THE INTERBEHAVIORIST

A Newsletter of Interbehavioral Psychology

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Interbehavioral Psychology
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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 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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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

Interbehaviorists in ABA Special Interest Group Meeting

Time:

12-12:50, Sunday, May 26, 1991

Place:

Adams Room, Hilton Inn & Towers, Atlanta

Purpose:

To function as an opportunity for interbehaviorists to discuss issues of mutual interest as well as help one another solve problems peculiar to the interbehavioral perspective in psychology and philosophy. The meeting is open to anyone interested in interbehaviorism. Please encourage your students and colleagues to attend.

Agenda:

1. Contributions to the ABA Program, 1991 and 1992.
2. Report on **The Interbehaviorist** and discussion of its future.
3. Election of Officers & Committee appointments.
4. Opportunities for graduate training.
5. Interbehavioral news and notes.
6. Problem solving discussion (see note below.)

Problem Solving Discussion at ABA

As mentioned in the last issue of **The Interbehaviorist**, we had requested additional time for our S.I.G. meeting this year to provide an opportunity for us to consult with one another on problems we may have encountered in interbehavioral analysis, method, practice, or whatever. We had also planned to spend some time discussing the life and future of interbehavioral psychology and philosophy in a more structured way. Unfortunately, we were not allotted additional time by the ABA program committee and have just our usual 50 minutes to spend together. Nonetheless, it seems a good idea to attempt some of what we had planned. Consequently, I wish to suggest a topic for discussion following the business portion of our meeting (and invite others to do likewise). We will have insufficient time to deal with this issue satisfactorily, I'm sure. Still, it may be useful to open the discussion with the chance that it might continue elsewhere. I suggest the following: 1. What changes, if any, in the categorical constructs of interbehavioral philosophy/psychology are needed to faciliate its elaboration as an applied science?

ABA Expo and Social Hour

Time:

8:30-10:30 p.m., Friday, May 24, 1991

Place:

Grand Salon, Hilton Inn & Towers, Atlanta

The Interbehaviorists in ABA will have a poster display at this social hour. Drop by and say hello.

Some Interbehavioral (or possibly so) Presentations at ABA

We came up with the following selection of talks by subscribers to **The Interbehaviorist** that seemed likely to represent the interbehavioral point of view. We apologize for any misrepresentations, and for any omissions.

ABA Schedule

FRIDAY

SYMPOSIUM: ***Biochemical Events and Psychological Fields***
CHAIR: Linda Hayes *(University of Nevada)*
DISCUSSANT: Suzanne Gleeson *(Uniformed Services University of the Health Sciences)*
Setting Factors. Linda Hayes *(University of Nevada)*
Synchronizing medical and behavioral management. Debra Fredericks, Linda Hayes *(University of Nevada)*
Use of psychotropic medication with the

institutionalized developmentally disabled: Contingencies maintain staff behavior. David Stroffe, Linda Hayes *(University of Nevada)*

SYMPOSIUM: ***The Teaching of the History of Psychology: A Naturalistic Perspective on the Study of the Study of Behavior***
CHAIR: Bryan Midgley *(University of Kansas)*
DISCUSSANT: Jack Michael *(Western Michigan University)*
The distant past and its relation to current psychology: A tour of psychophysical dualism and nondualism. Noel Smith *(State University of New York-Plattsburgh)*
The history of psychology should not be boring: A platyopic alternative to myopia. William Verplank *(University of Tennessee-Knoxville)*
History of psychology from a behavioral standpoint. Mark Swain, Dennis Delprato, Peter Holmes *(Eastern Michigan University)*

INVITED ADDRESS: ***Feelings aren't epiphenomenal: Implications of verbal behavior for the analysis of emotions.*** Steven Hayes *(University of Nevada)*

SATURDAY

SYMPOSIUM: ***Fear of Going Cognitive***
CHAIR: Steven Hayes *(University of Nevada)*
DISCUSSANT: Hayne Reese *(West Virginia University)*
Lifespan cognitive development and speed of information processing: Notes from the underground. Joel Meyerson, Sandra Hale *(Washington University)*
Behavior analysis of complex human functioning: The example of analogical reasoning. Regina Lipkens, Steven Hayes *(University of Nevada)*
Behavior analysis ventures into complex processes: Are we falling into the deep end? Marc Branch *(University of Florida)*
Radical monism. Linda Hayes *(University of Nevada)*

PAPER: ***Setting events and problem behaviors in school settings.*** Robert H. Horner, Stella Dadson, Jan Ramsden, Lora Tuesday-Heathfield, Richard Albin, Robert O'Neill *(University of Oregon)*

SYMPOSIUM: ***Understanding Interbehaviorism***
CHAIR: Linda Hayes *(University of Nevada)*
DISCUSSANT: Hayne Reese *(West Virginia University)*
Some allies of Interbehaviorism. Noel Smith *(State University of New York-Plattsburgh)*
Implications of specificity logic for science. Linda Hayes *(University of Nevada)*
Science as an interbehavioral enterprise: Some reflections on Wittgenstien's language games. Emilio Ribes Inesta *(National Autonomous University of Mexico)*

PANEL DISCUSSION: ***Social Skills: Social Validation and Generalization with Persons with Developmental Handicaps***
CHAIR: Patrick Ghezzi *(University of Arizona)*
PARTICIPANTS: Dorothy Griffiths *(York Behavior Management Services / York Central Hospital-Richmond Hill, Canada)*
Susan Tough *(York Behavior Management Services / York Central Hospital-Richmond Hill, Canada)*

SUNDAY

SYMPOSIUM: ***Boundaries of Behavior Analysis***
CHAIR: Bryan Midgley *(University of Kansas)*
DISCUSSANT: Hayne Reese *(West Virginia University)*
Molar behavior analysis. William Baum *(University of New Hampshire)*

The boundaries of behavioral technology. Henry Pennypacker *(University of Florida)*

From MacDougall through Skinner and Kantor and beyond. William Verplank *(University of Tennessee-Knoxville)*

The domain of behavior analysis: Psychology as the science of behavior. Dennis Delprato *(Eastern Michigan University)*

PAPER: ***The experience of meaning.*** Kelly Wilson *(University of Nevada)*

SYMPOSIUM: ***Behavioral Development and the Notion of Stage***

CHAIR AND DISCUSSANT: Ann B. Pratt *(Capital University)*

A developmental stage notion enhances behavior analysis. Michael Commons *(Harvard Medical School)*

Mathematically demonstrated hierarchical complexity of tasks and behavior development theory. Edward Trudeau *(Harvard University)*

ADDRESS: ***Who, what, and when: Chronological comparison of Skinner to his competitors within the behavioristic movement.*** Paul Mountjoy *(Western Michigan University)*

INVITED ADDRESS: ***Cross purposes: A perspective on the conflict between Skinner And Kantor.*** Linda Hayes *(University of Nevada)*

PRESIDENTIAL ADDRESS: ***The aim and progress of behavior analysis.*** Edward Morris *(University of Kansas)*

MONDAY

ADDRESS: ***Coordinating psychology with other disciplines: Undergraduate learning communities with philosophy, history, and geology.*** Charles A. Lyons *(Eastern Oregon State College)*

SYMPOSIUM: ***Cognitive Development: Behavior-Analytic Findings and Commentary***

CHAIR: Ann Pratt *(Capital University)*

DISCUSSANT: Sidney Bijou *(University of Arizona)*

Is self-instruction another way to do task analysis? Donald Baer *(University of Kansas)*

Stimulus relations and cognitive development. Arnold Kunian *(University of Minnesota)*

Behavior analysis of cognitive development: The training of Piagetian conversation skills. Barry Parsonson *(University of New Zealand)*

An analysis of the relationship between object/person permanency and mother-infant attachment. Jacob Gewirtz *(Florida International University)*

ADDRESS: ***Towards a definition of social skills.*** Patrick Ghezzi *(University of Arizona)*

PAPER: ***A chronological comparison of Skinner to his competitors, a brief version.*** Paul Mountjoy *(Western Michigan University)*

SYMPOSIUM: ***Interbehavioral Analysis of Research Data***

CHAIR: William Gardner *(Jacksonville State University)*

DISCUSSANT: Roger Ray *(Rollins College)*

Cutting through the behavioral stream: An interbehavioral investigation of

behavioral systems and of some of their properties. Bryan Midgley, Edward Morris *(University of Kansas)*

Inductive analysis in pedagogy: The utility of an interbehavioral strategy. Tom Sharpe *(University of Nebraska)*

Linguistic interactions of normally developing and retarded children. Patrick Ghezzi, Elias Robles, Sidney Bijou *(University of Arizona)*

Vigilance as a precurrent psychological event in traffic accident avoidance. Kimberly Hayes, Cynthia Chapman, William Gardner, Donald Patterson *(Jacksonville State University)*

Tribute to Skinner in Mexico

A tribute to Skinner was organized by Emilio Ribes in conjunction with the Mexican Association for Behavior Analysis meeting held in Mexico City in March of this year. The editor and two of the assistant editors attended the meeting. It was interesting to note that almost all of the speakers mentioned Skinner's experimental preparation, including his investigative constructs (e.g., the operant), investigative practices, and the development of apparatus (the "Skinner box", cummulative record, etc.) as his most significant contributions to psychology. A few also mentioned his extrapolations from animal findings to certain human domains such as the design of cultures, eductaional systems, human development and language. No one credited him with a significant contribution to the philosophy of the science of psychology. The speakers included: Fred Keller, Peter Dews, Peter Harzem, Charles Shimp. Phil Hineline, Howard Rachlin, Jim Dinsmoor and Jacob Gewirtz. A similar tribute is planned for ABA. It will again be interesting to note for what Skinner is remembered by his followers.

That Little Extra

A number of subscribers made donations beyond their regular subscription fees for 1991, for which we are grateful. They were:

Sidney Bijou
David Cornwell
Debra Fredericks
Louise Kent-Udolf
Edward Morris
Thomas Sharpe
Noel Smith
Robert Thompson
Marian White McPherson

The Meaning of Mitsorg

In the last issue of **The Interbehaviorist**, it was noted that Kantor had used the pseudonym "A. Mitsorg" on a couple of pieces in **The Interbehaviorist** for which we had no explanation. We have since learned that mitsorg may be understood as "with care or concern" in German. Thanks to Regina Lipkens for solving the puzzle.

E-Mail Addresses of Some Subscribers to The Interbehaviorist

You can reach the following on BITNET or INTERNET. BITNET addresses do not have periods in them. On most systems, there are automatic gateways between the two networks, however some file transfer protocols will not work between them.

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If you would like to have your e-mail address published, please send it to **The Interbehaviorist.**

Article

Learning and Memory

Linda J. Hayes
University of Nevada

Everyday experience tells us that what we and others around us are doing today is different from it was yesterday, and the day before that. Our repertoires are changing -- we are learning. We note too that what we learn, by and large, is not here today and gone tomorrow. What we learned yesterday stays with us -- we remember it.

Systematic thinking, as is the hallmark of science, evolves out of everyday experiences of this sort and the systemic concepts of learning and memory are examples of this evolution. They occupy a central position in almost all present day psychological systems. Their technical exposition in the multitude of historical psychologies varies, of course, although perhaps not as widely as might be expected. For example, it would be in keeping with most historical and current perspectives in psychology to claim that learning is something that happens *to an organism*, or is enacted *by an organism*, or is in some other way related to the organism in particular. Memory, likewise, has almost always been assumed to be *of the organism* in some manner.

These claims reflects the widely held view that organismic events constitute the essential subject matter of psychology, and this applies both in cases where the essential subject matter is taken to be the behavior of an organism and where it is regarded as the organism's mental action. To reiterate, to argue that learning and remembering as psychological events happen to an organism or is accomplished by an organism, is to propose that organismic events constitute the subject matter of psychology. Most historical and current psychological systems have adopted this position.

I am not suggesting that there are no differences across psychologies -- behavioral and mentalistic alike -- as to their interpretations of these happenings. On the contrary, each has found it necessary, or at least workable, to come up with its own version of learning and memory theory. The principle difference between psychologies of these two general types has to do with their systemic assumptions concerning the relation of psychology to biology. Mentalistic theories propose a parallel relation. Behavioral theories an interactive one. Let us consider these positions in somewhat greater detail.

Mentalistic Theories

Modern mentalistic theories developed out of theological traditions in which the biological organism was of little or no importance, and this attitude has not changed in any fundamental way. There is still no real connection between the psychological entities and processes postulated by cognitivists and the biological substrate. Learning is held to be a conscious matter, involving the processing of information, the derivation of rules, the construction of schemas, the weighing of alternatives, and any number of other rational acts – none of which has anything to do with biology and all of which is enough to make one wonder at just how a flatworm could be so clever.

Memory is similarly conceptualized. From a cognitive perspective, the past experience of an organism is converted into a possession of the organism. These possessions are not of the sort that one's spleen or tonsils are a possession, though. They are not biological entities. They are not brain tissues. They are entities of some other sort. Memory, it is held, is the conversion of past experiences into copies of them, the storage of those copies until such time as they are necessary to explain behavior that cannot be explained by appeal to current conditions, and the retrieval of the stored copies for reexperience.

In summary, the reluctance of modern cognitivists to conceptualize psychological events in thoroughly naturalistic terms eliminates certain alternatives as to the relation possible to postulate between biological and psychological events. It is, first, not a reductionistic one, as this

would strip metal events of their special character. It is also not a genuine interaction, as to suggest as much would initiate the age old debate in psychology as to how events of fundamentally different substance are able to make contact. With these possibilities eliminated, the only real alternative is parallelistic, as I have tried to illustrate here.

Behaviorial Theories

Behavioral theories of learning and memory tend to be more interactionistic. No doubt this is due to their historical affiliation with biology and especially to their persuasion by the doctrine of natural selection. So persuaded by Darwin's theory are these theorists, that psychological events are subordinated to biological events -- subordinated enough on occasion to give rise to the suggestion that they are based on or may be reduced to biological events. Skinner's position is a case in point.

Skinner argues that operant learning is indicated by an increase in the probability of responses that have been effective in producing particular consequences. The consequences are the principle causal variable in this formulation and the ability of organisms to be influenced by them is said to be a product of natural selection (Skinner, 1971, p. 114-115).

The causal efficacy of consequences, Skinner continues, has evolved in conjunction with two other sets of conditions. One of these is an inherited susceptibility to reinforcement by certain kinds of consequences (Skinner, 1981, p. 501). It is this that makes these consequences capable of increasing the frequencies of the behaviors they follow. The other condition is the availability of a supply of behavior not specifically committed to eliciting or releasing stimuli (Skinner, 1981, p. 501).

Given an inherited ability to be influenced by the consequences of our actions, inherited susceptibilities to be influenced by certain kinds of consequences, and a supply of behavior not specifically committed to other influences, the outcome is as follows: Responses occur for no particular reason. Some of these responses produce consequences which increase their frequency of occurrence by which they are maintained in the organism's repertoire. Other responses fail to produce consequences having this effect, and these responses are thereby not maintained. The outcome of selection by consequences, then, analogous to the modified species of natural selection, is the modified repertoire of the organism. Learning is this process, according to Skinner.

The concept of memory, while not typically addressed as such by behaviorists, has not been overlooked in behavioral theory. An organism's history of interactions with its environment is of central concern to behaviorists; and they too have a solution to the problem of how that history may be brought to bear in the present. Skinner, for example, argues that the past is brought to bear in the present by way of the presence of a changed organism -- conceptualized substantively not functionally. In his words:

"Something is done today which affects the behavior of the organism tomorrow. No matter how clearly that fact can be established, a step is missing, and we must wait for the physiologist to supply it. He will be able to show how an organism is changed when exposed to contingencies of reinforcement and that the changed organism then behaves in a different way, possibly at a much later date" (Skinner, 1974, p. 215).

In summary, both learning and memory have a biological basis in behavioral theory -- both are "of the organism" so to speak. In the case of learning, particular stimuli and their temporal arrangement with respect to behavior have the effects they do because of the way the organism, as a biological entity, is built. In other words, *that* we learn is attributable to a particular course of biological evolution. Likewise, remembering is a biological matter. The vehicle in which an organism's past experience is carried into the effective present is the biological organism -- its physiology.

Summary of Mentalistic and Behavioristic Theories

As I suggested earlier, the cognitive and behavioral constructions, while not wholely alike in this regard, do share certain views on the topics of learning and memory. Both assume that history or experience is something that an *organism* has, that is, learning in something that happens to an *organism*. It is the *organism* that learns and subsequently remembers. As such, both take the position that if an organism's history is to be brought to bear in the effective present, it must be done so via the organism.

In both cases, also, the past is assumed to bear

some responsibility for the present, which is why both are obligated to find ways of actualizing the past in the present condition. And both do so via the organism. A causal relation of past to present events can be postulated only if the past and present are conceptualized as having independent existence. In short, both behaviorists and cognitivists acknowledge a distinction between the past and present.

These arguments are not unusual by any means. On the contrary, they are quite conventional. So much so, in fact, that alternatives are difficult to imagine. Unfortunately, conventional wisdom particularly with respect to psychological history has not been particularly fruitful. It has left us lamenting how little we know about an organism's history in one breath; and in the next, explaining whatever it is an organism may be doing by appeal to that history. Something is amiss when the problem is the solution; and the solution is the problem.

My purpose in raising these issues is not to criticise conventional wisdom, as though by doing so the adequacy of some other position would be enhanced. Conventional wisdom serves the purposes of those who abide by it and is for them the truth concerning such matters. Neither is it my purpose to change anyone's belief. On the contrary my purpose has been to provide an intellectual background against which the unusual features of the interbehavioral analysis may stand out. Let us turn then to a very different set of assumptions -- those of interbehaviorism -- and see where it leads us in our quest for more satisfying concepts of learning and memory.

Interbehaviorial Theory

Recall that conventional treatments of learning and memory were articulated on the premise that organismic events constitute the essential subject matter of psychology. This premise is evident in the argument that learning happens *to* an organism or is accomplished *by* an organism, and that the past is present *in the organism* in some way.

The interbehavioral postulate as to the subject matter of psychology is completely at odds with this view. From an interbehavioral perspective a psychological event is a field of interaction, the focus of which is a function obtaining between stimulating and responding. While organisms and environments participate in psychological events -- there could be no psychological events in their absence -- they are not themselves the events of interest in this domain. It is the function obtaining between stimulating and responding that is the essential subject matter of psychology from an interbehavioral perspective.

Learning

Accordingly, the psychological event of learning is not of the organism for an interbehaviorist. Learning is not something accomplished by an organism. It is not something that happens to an organism. Learning is something that happens to a function obtaining between stimulating and responding. It is a modification of function -- a change in responding with respect to stimulating.

The interbehavioral field concept further suggests that learning, as modification of function, is incessant. That is to say, our interactions with our environments are constantly changing. To suggest otherwise would be to suggest that field events are possible of reconfiguration in every detail, as it is only in such a circumstance that a function could be assumed to be sustained without modification. Such a reconfiguration is not possible however because a "second" occurrence of a psychological event necessarily includes the first occurrence of that event, a factor not present in the first occurrence. Consequently, to the extent that a psychological event is a field event -- an organization of interacting factors -- the "second" occurrence, by including factors not present in the first occurrence, is not a second occurrence of that event. It is a different event, comprised of different factors. In summary, a psychological event is never repeated from an interbehavioral perspective. As an function obtaining between stimulating and responding, a given psychological event is but a point in the evolution of function wherein each current manifestation includes all previous manifestations. Learning, as such, is evolving function.

There is, further, no systemic requirement in interbehaviorism to locate, base, reduce, or otherwise connect psychological functions with substantive structures of any sort. They have no substantive structure in themselves nor do they acquire it through some form of association with other events. Psychological events are not held to reside in the organism, even when the events at issue are such things as thinking, imagining or dreaming. All functions, no matter how subtle,

are field occurrences. They are, as such, interrelated with all other event types, though bear no *special* relation to the events of any particular domain, including biology.

Memory

Turning more specifically to the issue of memory, recall that in more traditional theories the past is held to be causally responsible for the present. This presupposition makes it necessary for these theories to postulate a means by which the past could be brought to bear in the present, the means agreed upon being the organism. As we have just discussed this particular means cannot be adopted from an interbehavioral perspective. We will return to the issue of means. For the moment, however, let us consider the larger issue of memory from an interbehavioral perspective.

There are really two issues. First, is there a past distinct from the present that could bear causal responsibility for the present from an interbehavioral standpoint? And secondly, if there were, what would its causal responsibility mean from this standpoint?

Time. Let us consider first the issue of the past distinct from the present. The issue of time. Time, like weight or height or length, is a metric – not an event. As such, it occupies no place in the psychological field. The field concept depicts a psychological event at a particular point in time, specifically, the present moment. All factors depicted as participants in a field event participate in the present moment; no one participating to a greater or lesser extent than another, and no one's participation preceding or following that of another. An interbehavioral field is conceptualized as a simultaneous interaction of all co-present factors.

The interbehavioral field, so depicted, is not just the present field of interaction. There are no other fields – no past fields, no future fields. From an event standpoint, at least, there is only one field -- the field existing in the present moment. Accordingly, the facts of past and future are to be found in the continuously evolving present moment.

Given this interpretation, there is no possibility of a past exerting causal influence over the present, as there is no past distinct from the present to have such an influence. The past interactions of a given individual, rather, exist in the current interactions of that individual. They differ from current interactions only in that they operate exclusively on the basis of substitute stimulation. To reiterate, past interactions exist as current interactions. They have no other existence. The past *is* the present.

In taking this stand, interbehaviorists avoid the troublesome problem of finding a plausible vehicle by which to carry the past into the effective present. They are not obliged to find replicas or residues of previous interactions inside the organism, as does the cognitivist. There are no previous interactions stored there. Neither is there a need to postulate a residue of past interaction in the substance of the organism, as does the behaviorist: The past history of psychological interaction does not exist as changes in organic tissue, at least no from a psychological perspective. The past history of interaction exists as current interaction. Our past is not stored within us. Our past does not change us. We *are* our pasts. As such, there is no need to postulate a means of making the past present.

Causality. Turning to the problem of causal responsibility, it may be obvious by now that there is no such concept in interbehavioral psychology. This is not so much a denial of causality as the absence of a need for it. When all factors present in a field are held to participate in it, and no field is ever repeated in every detail, and only one field constitutes the present moment in which all previous fields are included -- there is no need for a concept of causality. If, indeed, our past exists in our present interactions -- and no where else -- then it makes little sense to argue that our interfactional history is *causally responsible* for our current interactions. To suggest as much is to argue that our current interactions are responsible for themselves.

In sum, there no need to explain the facts of learning and memory by reference to casual variables of one or another sort as is the style of conventional thinking on these topics. From an interbehavioral standpoint, learning and memory may be understood simply as evolving functions.

Other Issues

As satisfied as I might be with this conclusion, I am certain that it will seem to some readers that I have failed to address myself to some rather important issues in this area. For example, have

learning and memory no distinguishing features? Are all psychological occurrences, in other words, to be understood as evolving functions without further differentiation? Or too, what role does motivation play in learning -- what role reinforcement -- in short, *why* do functions evolve as they do? *Why* did evolution not take a different course? I will deal with each of these issues briefly.

Distinguishing Characteristics of Learning and Memory

With regard to distinctions between learning and memory and between these concepts and any of a number of others, let me say that of course there are distinctions that could be made. By and large, however, the distinctions that could be made among types of interbehavior would have to do with differences in the specific factors participating in those various events, including the types of functions, the types of setting conditions, and the types of response systems. Some might involve universal, others conventional stimulus functions, some direct, some substitutive. Likewise, some might involve settings impacting the responding organism, others the stimulating objects. Some might involve glandular reaction systems, others skeletal, and so on.

These distinctions could be made and have been by Kantor and his followers in many other places (e.g., Kantor, 1924-26; Kantor & Smith, 1975.) In the case of learning, for example, Kantor (1926, pp. 338-362; 1959, pp. 128-138) distinguishes learning fields from those of other sorts by suggesting that the former involve new coordinations of stimulating and responding, not merely the occurrence of previously acquired functions. Learning fields are also distinguished in these works by the degree to which they are contrived for the purpose of establishing new functions.

This analysis, in that there is implied here the possibility of event reconfiguration -- event recurrence -- appears to contradict what I have argued to be an interbehavioral interpretation of learning. The contradiction is eliminated, however, when the different perspectives on analysis are taken into account. An analysis of learning in which events are assumed possible of recurrence is made from the standpoint of an applied science of psychology, where the goals of science are prediction and control. One cannot predict nor control the unique event. To accomplish goals of this sort it is necessary to subordinate the uniqueness of events to their similarities. In so doing a *type* of event may be said to recur. In the analysis that I have been attempting in this eassy, prediction and control are not the goals. I have been speaking from the standpoint of basic science, the aim of which is to describe events. From this perspective all events are unique events and the acquisition of new functions cannot be distinguished from the performance of "already acquired" functions. A similar analysis might be made of memorial fields (1926, pp. 85-118.)

To reiterate, I have been addressing issues of learning and memory as psychological events, not as *types* of psychological event. At the level of the psychological event, learning and memory are more alike than different.

Motivation and Reinforcement

Secondly, as to the role played by such things as motivation and reinforcement, I can only say that these concepts, when it is argued that they play a role, reflect a different set of postulates than those on the basis of which I have been making my case. The role these concepts have played in psychological theories to date is an explanatory one. There are no roles of this sort in interbehavioral perspective. From a descriptive standpoint. From this standpoint, motivation and reinforcement -- if these terms refer to anything at all -- they refer to events of the sort I have been speaking: They constitute interactions of stimulating with responding -- evolving functions. Their specific characteristics as psychological events have been addressed by Kantor and others elsewhere. The distinguishing characteristic of motivational events, for example, is their duration. I repeat, however, that it is not my intention to distinguish among psychological events of different varieties but rather to identify the psychological event per se. Hence I will not elaborate further as to the specific characteristics of motiavtional and consequential fields.

I would, nonetheless, like to comment further on the issue of motiavtion and reinforcement as explanatory processes. Throughout this paper I have been articulating the interbehavioral position as it stands in philosophical perspective. There is, as well, an interpretation of psychological events that may be considered interbehavioral in which some field participants are held to play

an influential role with respect to other field participants. Interbehaviorists sometimes argue, for example, that the role of the setting is to actualize functions. Which function obtains at any given moment is siad to be determined by the setting. The concept of interbehavioral history is also said to have a role of this sort to play on occasion. Reinforcement and motivational operations might be understood in this way for particular purposes. From my perspective as an interbehaviorist, however, the setting is merely a participant in a unique field, and like other participants, it has no special role to play. Similarily, from my perspective, the field is timeless.

Evolution of Functions

Finally, why do functions evolve as they do? Why do they take the course that they do and not some other course? With regard to the issue of evolution per se, I can only reply that change is a categorical concept in interbehavioral psychology. Functions are events and events by definition are processes of change. Hence the answer to the question of why functions evolve at all is simply that they do.

As to why they evolve as they do, why they take the course that they do and not some other course, our answer must be somewhat more involved, though in principle it amounts to the same answer. The question might be better framed: Could things be other than they are? The answer to this question from an interbehavioral perspective is no. This does not mean that how things *will be* is predictable. Prediction is not a requirement of the system. It means only that *in retrospect* nothing that is not could have been. The situation might *be* different, but it could not *have been* different than what it was. This is the case because all things are assumed to be involved in the same evolution. All things are related to all other things. Things are the way they are because they are the end point of the evolution of themselves. Had they been different they would be different. But they weren't different, they were what they were and, as a result, they are what they are. In short, functions evolve as they do, take the course that they do, because they take the course that they do.

Summary and Conclusions

By way of summary, I have argued that it is only when psychological events are localized in organisms that learning is held to be something an organism does and as such must be accounted for in terms descriptive of the oprganism's operation -- in biological or physiological terms, for example, or in those of comupter science.

Likewise, it is only when the past is conceptualized as existing independently of the present that past events can be claimed causally responsible for present events. It is thinking of this sort that requires the specification of a means by which the past may be brought to the present – that means being the organism.

In contrast to these views is the position of the interbehaviorist. From this standpoint, psychological events are conceptualized as evolving functions, without substantive structure, occurring in a context from which they cannot be torn. And in as much as the context and history of a psychologicalevent participate in that event as that event, there is nothing apart from the event to which may be attributed its occurrence.

Learning and memory are psychological events of this sort. They need no explanation – their analysis needs no reference to motivation, or reinforcement, or any other explanatory construction. They just are. They just are evolving functions. The fact of their evolution also just is. And the course of their evolution could not be other than it is. It just is.

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Article

Idealism, Realism, Coherence, and Correspondence in Kantor's Interbehavioral Philosophy

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The question whether there is a real independent world and whether we can know it has been asked by philosophers throughout the ages. Another question closely related to the first one is whether our beliefs of the world can correspond to the actual world. In the first section of this paper, the doctrines of idealism and of realism are described. Then, we discuss Kantor's position on these issues. In the second section, the two traditional theories of truth, the correspondence theory and the coherence theory are presented. Next, we describe a third theory of truth, the impure coherence theory, that was constructed to avoid the problems inherent in the correspondence and coherence theories. Finally, we discuss the nature of truth in Kantor's interbehavioral philosophy.

Idealism

Idealism in its philosophical sense, as opposed to naturalism, is the view that mind and spiritual values are fundamental in the world as a whole (Acton, 1967, p. 110). Naturalism is the view that mind and spiritual values have emerged from or are reducible to material things and processes (Acton, 1967, p. 110). In another sense, philosophical idealism is opposed to realism and is the denial of the common-sense realist view that material things exist independently of being perceived (Acton, 1967, p. 110). It is thus possible to hold a naturalistic and an antirealistic position or to be an antinaturalist and a realist. More often, however, arguments against common-sense realism have been used in order to establish an antinaturalistic position. In this paper, the term idealism is used as opposed to realism. We use the term antinaturalist to indicate the idealistic position as opposed to naturalism in order to avoid confusing between the two meanings of idealism.

Two arguments that are very prominent in idealist theories are the metaphysical and the epistemological arguments for immaterialism. Immaterialism is the name given by Berkeley to the thesis that there is no such thing as material substance (Acton, 1967, p. 111). The metaphysical argument states that it is impossible that matter can be independently real; nothing can exist apart from mind, since if we try to think of something existing unthought of we have to think of it (Acton, 1967, pp. 112, 117). Berkeley's argument "esse est percipi" expressing that the colors, shapes, and sounds that are taken to belong to independently existing material objects are in fact sensible qualities that cannot exist apart from being perceived is called the epistemological argument for immaterialism.

In idealism, epistemologically, the known is absorbed in the knowing of the knower and metaphysically, the material is absorbed in the spiritual for the antinaturalist or the real world of objects and events is absorbed in the actions of the organism for the naturalist. In a weaker sense of idealism, it is the thesis not that minds create the world or that there is no world but that the character of things are determined by the mind logically not causally (Walker, 1989, pp. 38-39). In this sense, there is a known but its character is logically determined by the knowing of the knower. There is a world but its nature depends entirely upon mind.

Realism

In modern philosophy realism is the view that material objects exist externally to us and independently of our sense experience (Hirst, 1967, p. 77). Realism is thus opposed to idealism, which holds that no such material objects or external realities exist apart from our knowledge or consciousness of them (Hirst, 1967, p. 77). Realist philosophers object to idealism because idealists fail to distinguish between the

act of perceiving and knowing and the object of the act. In realism, epistemologically, the known exists independently of the knower and metaphysically, the material world exists independently of the mind for the antinaturalist and the real world of things and events exists independently of the organism for the naturalist.

Direct realism is the view that perception is a direct straightforward confrontation or contact with the external object (Hirst, 1967, p. 80). In contrast, indirect or dualist realism claims that perception is primarily of mental representations of the external object or that our perception of the external object is by means of private, mental sensa (Hirst, 1967, p. 78). Indirect realists distinguish between external material objects as the causes and ultimate objects of perceiving and private sensa which are the mental effects of brain processes due to the action of those objects on the sense organs (Hirst, 1967, p. 80). Many philosophers have taken the idealist position because of a serious defect of *indirect* realism: it is difficult to see how we can break out of the circle of private sensa and observe the external objects (Hirst, 1967, p. 81).

The realist not only believes that there is a world of objects and events independent of us but also that when we investigate the nature of this world, the nature of what we find is independent of our cognitive capacities and investigative methods. In other words, our concepts and investigative methods do not create or influence the data. The observer remains outside the things he observes.

Idealism and realism in Kantor's philosophy

On the basis of a historico-context analysis Kantor concludes that traditional spiritistic philosophy is invalid because it misrepresents and mystifies scientific work (1981, p. 8). Kantor argues that in train with traditional dualistic philosophies come such verbal puzzles or pseudoproblems as the independence or dependence of things upon knowledge, whether the mind creates reality, or the existence of an outer world (1959, pp. 9, 41; 1981, p. 96). Cosmic-reality problems, traditional ontology and epistemology have no place in Kantor's interbehavioral philosophy (1959, p. 41; 1981, p. 126).

Kantor objects to antinaturalistic philosophies based on mind-body principles because antinaturalists regard things and events as creations and projections of spirit (Kantor, 1981, p. 6). Kantor objects the position that the soul is the source of knowledge and that it guarantees all existence. In Kantor's words: "Throughout the entire history of psychology and philosophy including the present, knowledge along with every other psychological act or process has been attributed to the mind of the knower. Little if anything in the knowing process has been credited to the things or events known" (1981, p. 51). According to Kantor spiritistic philosophers integrated observers and observed and they adopted the slogan that the observer is part of the observed (1981, p. 121).

Kantor's goal is to develop a valid philosophy and avoid the errors of traditional philosophy by holding a naturalistic position and by assuming that nature comprises of integrated fields and that valid philosophical propositions must be built up on the basis of observation of things and events (1981, pp. 4, 72). From the standpoint of actual things and events spiritistic substances are reducible to nothing more than institutional verbiage (Kantor, 1981, p. 6).

The assumption that nature comprises of integrated fields typifies Kantor's philosophy as idealistic and realistic. In Kantor's interbehavioral philosophy and psychology events occur in fields with responses of organisms in reciprocal action with stimulus objects. Here, Kantor's position is idealistic and realistic: the sources of the interaction are to be found in the organism as well as in the stimulus objects.

However, the assumption that valid philosophical propositions must be built up on the basis of observation of things and events characterizes Kantor's philosophy as more realistic than idealistic. Kantor is especially concerned not to unite the observed with the observer or to have the observer create the observed. as the following quotations indicate: "Specifically valid psychology will dictate a strict differentiation between stimuli, that is, objects and events confronted with, and the responses toward those things" (Kantor, 1981, p. 98, 1981). And, "Colors, as well as all other properties, charac-

teristics, and relationships ought to be regarded as existing and confrontable things. ... In no way does the individual who reacts to stimulus objects create them" (Kantor, p. 123, 1981).

Kantor argues that characteristics and properties of events are originally autonomous and independent of the investigator (1959, p. 99). The basic goal of scientific work is to obtain light on these characteristics of natural events. This excludes any assumption that procedures, measurements and recordings determine the properties of things investigated (Kantor, 1959, p. 99). To do so he has to make a move from a field approach with symmetrical stimulus and response functions to a field structure in which the stimulus objects seem to be dominant source in the interactions. He does this by making the following assumptions. First, although philosophers are subject to ideological influences, they are able to free themselves from traditional invalid philosophies. Secondly, by means of proper methods the treatment of refined data which show a dependency upon the investigator's attitudes and manipulation as well as the traits imposed by his apparatus, do not depart radically from the original events and the basic research motive of discovering their characteristics (Kantor, 1959, p. 99).

To summarize Kantor's position on the issue of idealism and realism, it seems to me that Kantor wants to avoid idealism as opposed to naturalism by holding a realist position. He thus opposes the idealist or antirealist position that mind creates the world and the absorption of the known by the spiritual knower. He holds a direct realist position that separates the known from the knower, the stimulus objects and events from the organism. His position is also idealistic in the sense that besides the stimulus objects the organism is the source of responses functions in the interactions. He gives the known and the knower an equal function in the act of knowing.

Thus Kantor emphasizes realism to avoid antinaturalism. Maybe Kantor confuses idealism as opposed to naturalism with idealism as opposed to realism. Most antinaturalists are antirealist but one does not entail the other (Acton, 1967, p. 77). Being realist does not secure your position as naturalist. You can be an antinatural realist or a natural realist. What Kantor opposes is being an antinatural antirealist.

Correspondence Theory of Truth

The correspondence theory is one of the two traditional theories of truth, the other being the coherence theory. The correspondence theory of truth states that truth consists in some form of correspondence between a proposition and the real world whose nature and existence are quite independent of what may be believed about it (Walker, 1989, p. 2). This theory is thus based on a realistic assumption.

Realist argue that the existence of a man, for instance, implies the truth of the statement in which we assert his existence. But the truth of the statement is in no way the cause of his existence; for we call the statement true or false according as he exist or not. Our statements are matched to the world, the world is not matched to our statements. The truth-value of a statement is something that it possesses independently of our actual capacity to decide what that truth-value is (Walker, 1989, p. 19).

The correspondence theory has one main problem: it is hard to see how we could ever lay a belief against an independent world and determine its truth that way (Walker, 1989, p. 9). What is open to controversy is how we construe the correspondence relation (Walker, 1989, p. 3).

Coherence Theory of Truth

According to the coherence theory of truth, to say that a statement (usually called a judgment or belief) is true or false is to say that it coheres or fails to cohere with a system of other statements (Walker, 1989, p. 2; White, p. 130). This theory has close historical links with idealism.

Opinions differ about what is to be meant by coherence. It has been taken to be simply consistency with the basic principles of the system, but in general the system will itself determine what coherence with it amounts to (Walker, 1989, pp. 4-5).

The appeal of the coherence theory is that it offers to obliterate the problem of how our beliefs can correspond to the world. Coherence theorists argue that no intelligible account can be given of the correspondence relation (Walker,

1989, p. 21). "What singles out any one relation R as 'the' relation of reference?" has no answer (Putnam, p. 206, 1988).

Coherence theorists also object to the notion of correspondence theory that facts are independent of our beliefs about them, as explained by Putnam: " If objects are, at least when you get small enough, or large enough, or theoretical enough, theory-dependent, then the whole idea of truth as being defined or explained in terms of a 'correspondence' between items in a language and items in a fixed theory-independent reality, has to be given up" (1988, p. 209). The main strand of this argument of the coherence theory has to do with classification. It is the denial that there are objective similarities among things, independently of the way we classify them (Walker, 1989, p. 15). If there were such objective similarities, there is no way in which we could know about them, since we can be aware of things only by applying concepts to them and hence by classifying them (Walker, 1989, p. 17). However, stating that the nature of this objective reality is determined by the coherent system of beliefs is not saying that the system of beliefs create the world.

Thus, truth cannot be a matter of correspondence with independent reality, and there would seem nothing else for it to be than some kind of internal coherence amongst our beliefs (Walker, 1989, p. 16). Some coherence theorists think of this set of truth as a determinate totality but others argue that what can be recognized as true is indeterminate and open-ended.

Impure Coherence Theory

Some philosophers claim that no pure coherence theory can be satisfactory (Walker, 1989, p. 210). Their first criticism is that it is not wholly up to us how we classify. They do not agree that there is nothing save the practice of the community to make one classification right or wrong (Walker, 1989, p. 166).

Their second criticism is that the coherence theory cannot take into account the facts of experience: the theory cannot give an account what is it for a proposition to be believed (a belief is always a belief about some state of affairs that lies outside the making of the belief) (Walker, 1989, pp. 168, 177).

Their third criticism is that at least some beliefs must play a foundational role in the system. This is what the coherence theorist denies. To know that a particular belief is justified is to know that it coheres with the other beliefs of the system, which must be justified themselves by coherence with the beliefs of the system and so on. In order to be able to do so, we must take at least for granted a certain amount of beliefs with foundational status which can be used to justify the rest (Walker, 1989, pp. 179-183).

The impure coherence theorists try to escape these objections to the pure coherence theory by combining coherence with correspondence (Walker, 1989, p. 6). The impure coherence theory offers a correspondence account of the truth of statements about our experiences, but a coherence account of the truth of more theoretical statements which we construct on the basis of them (Walker, 1989, p. 6).

The impure coherence theory obliterates the three problems of the pure theory. It is no longer wholly up to us how we classify. It is through observation that we make contact with what is independent real (Walker, 1989, p. 214). Foundational status is assigned to the class of observation statements for which truth consists in correspondence. These observation statements determine what the coherent system itself is (Walker, 1989, p. 213). It is by their means that the truth-values of other (theoretical) statements are assessed (Walker, 1989, p. 173).

The impure coherence theory avoids the problems of the pure coherence theory but cannot avoid the main problem of the correspondence theory, namely, how can the observation statements correspond to the way things are? There are several ways to solve this problem. First, it is possible to hold he belief that the beliefs are true of the world as a matter of pure accident despite the lack of any explanation why our beliefs and the world should match (Walker, 1989, p. 222). Another solution would be to assume that the correspondence is guaranteed by the goodness of God (Walker, 1989, pp. 222-223). A third possibility is that the correspondence is the result of evolution (Walker, 1989, p. 223). What is needed is not simply a

causal account but an account why beliefs should match the world (Walker, 1989, p. 224). But the evolutionary account says almost nothing about this. It is hard to see what theories have to do with survival as we look at the many nonhuman animals that survive (Walker, 1989, pp. 224-225). The only way out seems to be to hold the position that these principles of correspondence work for us now. But this does not assure that it will keep working any time in the future.

The impure coherence theory provides a third alternative as a theory of truth. The system of beliefs is neither read off from the world as the correspondence theorist says, nor read into it as the coherence theorist argues. It combines a realist and an idealist position.

Coherence and Correspondence in Kantor's Philosophy

Kantor's philosophy can be typified as an impure coherence theory. According to Kantor, the actually encountered things and events should be the *starting* point for all valid speculation in a scientific valid philosophy (1981, pp. 4-11). According to Kantor, "While constructions are very different from the things observed, experimented upon, or speculated about, they must in the *final* [emphasis mine] analysis be derived from those things" (1981, p. 10).

Kantor does not hold the position of a correspondence theorist that *all* our statements should be directly derived from the actual world, as seen in the following: "At any rate, they [interpretive constructions] point directly and immediately to the constructing individual and less directly to the events being described or explained" (Kantor, 1959, p. 138). He also does not hold the position of a pure coherence theorist that our statements cannot correspond to the actual independent world but that they all must cohere with each other to be valid. Kantor's view is that of an impure coherence theorist: he assigns foundational status to observation statements.

How does Kantor deal with the correspondence problem? Kantor emphasizes the distinction between constructions and the things observed. What is his account of the relation between them? Although Kantor argues that constructions are very different from the things observed, he postulates that there is a continuity between scientific constructions and the original crude events (1959, pp. 88-89; 1981, p. 10). "Proposition 7. Postulate 6. Event-construct continuity. Psychological constructions are continuous with crude-data events" (Kantor, 1959, p. 88).

Whenever the scientist studies an original crude event, he endows it with properties additional to those it originally possesses and it becomes a refined event (Kantor, 1959, p. 80). But a close parallel between crude and refined data can be brought about by means of rigid statistical controls, care with scales, use of proper origins and coordinates, etc. (Kantor, 1959, pp. 99-100). When you assume that the psychological events consist of interbehavioral fields, it is difficult to accept the argument that refined data can closely parallel preanalytic crude data as Kantor does. Kantor seems to say that we should try with proper methods to observe and describe the actual things and events as purely as possible, i.e., without influence from a priori categories. The problem is how can we know when our refined data parallel the crude data? Kantor would answer that refined data that parallel crude data will lead to effective orientation with respect to things and events and will lead to prediction and control which will confirm the procedures and applications (Kantor, 1959, p. 102).

Kantor further argues that his continuity is also designated to emphasize that whenever it is necessary to build upon prior constructions such building must be carefully controlled (1959, p. 89). He stresses the point that the events themselves are not constructs: "The fact that the scientist constructs abstractions, descriptions, and laws concerning events is not be confused with the belief that the events themselves are constructs" (Kantor, 1959, p. 89).

Here, Kantor makes clear his objection to a pure coherence theory. He wants to avoid spiritistic theories without any reference to the actual real world and which absorb the known into the knower. But the problem with Kantor's argument that constructions differ from the actual things observed is that in his interbehavioral psychology there is no distinction possible between descriptive and interpre-

tative constructs and the events themselves because you cannot interact with the events without observing, describing, interpreting them and vice versa you cannot observe, describe, interpret, or construct without interacting with the events. Your history is always a participant in the interaction and pure observation or description is not possible. Naming and categorizing the world is always based upon the organism, its history, the context and the stimulus objects. In Kantor's philosophy, the known and the knower equally participate in the knowing.

To conclude Kantor's position on coherence and correspondence, his interbehavioral philosophy can be typified a an impure coherence theory that gives foundational status to observation statements. Kantor tries to give an intelligible account of the correspondence relation between beliefs and the real world. However, some criticisms remain as to how this account of the correspondence relation can be possible in an interbehavioral philosophy

Conclusion

We discussed Kantor's position on the issues of idealism, realism and the nature of truth in his philosophical system. We came to the conclusion that Kantor's interbehavioral philosophy can be characterized as both idealistic and realistic but with the emphasis on realistic.

The impure coherence theory of truth defines the nature of true statements in Kantor's theoretical system. His philosophy offers a correspondence account of the truth of observation statements but a coherence account of the truth of theoretical statements which are constructed on the basis of the observation statements.

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Author's Notes

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Proposition 7. Dependency Relations are Strictly Operational. Psychologists frequently use a dependence formula -- R = f(s) -- in which emphasis is placed upon the responses of organisms as the dependent variables, while stimulus objects are regarded as the independent variables. These relations are only operationally justified. Such assumptions are not valid except in specific investigational circumstances and do not imply that the events are structured on such a basis. R = f(s) is therefore a pragmatic device. The same thing is true when the range of independent variables is enlarged to include factors beyond the stimulus -- for example, conditions of the organism, number of stimulus presentations, and time factors.

Kantor (1958, pp. 89-90).
Interbehavioral Psychology.

Comments

A Joint Newsletter with Allies?

Noel W. Smith
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In the Newsletter, numbers 2-3, 1990, the editor notes the decline in subscribers as well as the lack of any indication that interbehavioral psychology can grow. She suggests the possibility of strengthening our position by a joint newsletter with "allied collectivities" as "an archival forum". I will advance one suggestion along that line but only as a point to be debated, not as one I necessarily advocate. I will do so by way of a description of a conference.

At the Fifth Annual Meeting of the Cheiron Society in 1973 (at Plattsburgh) I organized a symposium called "Contextual Interactionists". Clarence Shute spoke on Aristotle, Whitehead, and Buber; David Miller on Mead; Rollo Handy on Dewey and Bentley; and Paul Fuller on Skinner and Kantor. Parker Lichtenstein was the discussant. (The proceedings of the symposium were published in **The Psychological Record,** 1973, **23,** 281-334.)

Without endorsing the principals in these papers or their followers as necessarily being satisfactory allies, I will suggest that a newsletter by the title of "Contextual Interactionists" might provide the scope that would permit a selection of allies to combine efforts to address some common issues and to debate or clarify others. We would not expect to be in agreement on all points but only have enough in common that a joint effort toward that commonality would be worthwhile. One section of the Newsletter could be set aside for the exclusive use of each party, as, for example, "The Interbehaviorists."

It would take a lot of discussion to decide on who constitutes "contextual interactionists," and once decided we might or might not be able to persuade them to participate. And some might want other participants that we would not. Some prospective participants might like the proposition but dislike the title. I am sure still other problems would occur. The road would almost surely be bumpy. Whether it would be worthwhile we need to ponder.

Now that Linda has made the suggestion, I hope others will join in to discuss it.

A Naturalistic Analysis of Transcendence

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Editor's Note:

The following commentary emerged in the context of a behavior theory and philosophy seminar at the University of Nevada, Reno. Students were required to write brief weekly commentaries on issues addressed in the readings and class discussions. The following is one such commentary. The particular question addressed was:

Kantor rejects all notions of transcendent reality. Is there a naturalistic way of understanding transcendence, and can some religious talk be understood through that elaboration?

Kantor again and again dismisses religious talk as having no referent in the world of things and events. Transcendent reality is seen as being purely the invention of religious people. From some religious perspectives, engagement with religious text and teachings, along with contemplation and participation in prayer and other devotional activities can bring one into contact with a reality which transcends ordinary reality. Contact with this transcendent reality is then said to shape the subsequent activities of the devotee. Kantor attributes this sort of religious activity to "systems of defense against the evils of human existence both cosmic and cultural" (1981, p. 281). The artifacts

of these defenses are autistic verbal formulations such as heavens, gods, transcendent realities, and so on.

From a monistic perspective, reference to another reality is problematic. This is only so, however, if there is an ontological commitment to another reality (i.e. two realities, one of which exists apart from observing and otherwise interacting organisms). If, however, the worlds or realities we are speaking of are psychologically construed, more than one ceases to be problematic. Furthermore, verbal behavior can be understood as making such transcendent realities possible.

For nonverbal animals the world is meaningful (i.e. has the stimulus functions that it has) by virtue of that organism's direct interactional history with respect to environing events. Verbal organisms not only have their direct interactional history, they additionally engage in verbally constructing their world. As result of this verbal construction, the world which is then psychologically present for them is in fact a different world (from a psychological perspective) from the world of their direct interactional history. The stimulus equivalence literature contains numerous examples of transfer of stimulus functions across members of a class of disparate stimulating events without any history of direct training.

Understanding the religiously generated experience of transcendence, one need only understand that reality as constructed as a result of a history of interacting with religious materials and devotional activities is a different reality (psychologically) than reality before such interactions. Transcendent experience goes beyond, in that the environing events can be understood according to the world as construed before, as well in terms of the world as construed after, the religious experience. There are now two realities (psychologically) with the latter being necessarily more or beyond the former. This is so, in the sense that the context within which a particular behavioral act is understood is enlarged in the latter transcendent case. (That is, events in it have more stimulus functions).

A biblical example may serve to illustrate my point. In the synoptic gospel Mark, Jesus' experience in the garden at Gethsemane is described. He knows that he is about to be betrayed and arrested. He come to the garden to pray. The text describes him as being "sorrowful to the point of death" (*The Jerusalem Bible,* 1967, p. 66). He throws himself to the ground and asks of God, "that if it were possible, this hour might pass him by" (*The Jerusalem Bible,* 1967, p. 66). Ultimately though, he knows that he is participating in a larger history of human salvation. Rather than succumb to the immediate contingencies and escape, he elects to stay--in light of the broader context. Devotees of this religion interact with this material and assess their current life circumstances in light of this story as metaphorically related to their own present situation. The text calls them to assess which ways they are about to respond to immediate contingencies, rather than consider the broader implications of a given act. They come to see each act as a recapitulation of this participation in a salvation history both personal and on the broader human scale. Now they respond to the act not only in its original historical and current context, but also in the context of their personal participation in a history of salvation (the later being a verbally constructed context). The prior context is thus transcended in the sense that the act in context is considered in a broader context.

This notion of transcendence does not appeal to other worlds or realities (ontologically), and thus does not violate any monistic premise. Additionally, it appeals only to observable things and events as explanatory, which presumably meets the requirements of a naturalistic analysis.

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Feeling Reactions in Interbehavioral Psychology

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Recently, I acquired a newly published collection of papers by B. F. Skinner (1989), the first chapter of which is entitled "The Place of Feelings in the Analysis of Behavior". I have now read this paper several times in an attempt to broaden my understanding of this important topic, but I regret to say that the result has been somewhat disappointing. In the present commentary, I shall refrain from criticizing Skinner's paper, but shall, instead, call attention to the more carefully organized and thorough interbehavioral treatment of feelings offered by Kantor (1924). Like Skinner, Kantor considered human behavior, including feelings, from a position of non-mentalistic objectivity. This means that feelings are events, or, more precisely, aspects or characteristics of events that occur in time and space — the very nature of which demands that they be described and analyzed by psychologists as well as by physiologists and biochemists.

The first thing that is necessary for a truly objective psychology of feelings is to define what is meant by a "feeling interaction". This is not as difficult, as most psychologists make it out to be when they attempt to develop their analysis on the basis of classical mind-body assumptions. What is needed is an unencumbered, purely observational approach to a human individual (a person) interacting with his or her contextual surroundings, both physical and social. In all instances, it is the behavior of the individual in the total situation that is important for psychology.

The first thing that must be done in an interbehavioral analysis of feeling is to distinguish such reactions from other types of psychological activity. As a total class, they are best referred to as affective interactions in that they do not, in themselves, act upon their stimulating agents. In affective interactions, it is the reacting individual who is acted upon, although he or she is certainly not passive in the process. Affective interactions are definitely adaptive and are more primitive and basic than are a person's more scientifically amenable cognitive reactions. In contrast, affective reactions provide never-ending subject matter for drama, literature, and the daily news.

In the interbehavioral analysis, the elements of affective interactions should first be compared to those of non-affective behavior. This may be done through the use of an eight-point scale that ignores differences between different affective reactions and between different reactions of a non-affective nature. This scale, which is described in detail elsewhere (Kantor, 1924; Mahan, 1968), includes discrimination, attention, changes in visceral mechanisms, stimulation by objects and persons, glandular functioning, involvement of the sympathetic division of the autonomic nervous system, involvement of the limbic system and the thalamus and hypothalamus of the central nervous system, and relative activity of the skeletal and smooth musculature.

A particularly important consideration in the analysis of affective (feeling) interactions is their position and functioning within complex interactions. Most, but certainly not all, adaptive interactions have an affective aspect, the prominence of which will differ in some degree with the circumstances. The affective aspects of complex interactions are present in an infinite variety of types, the most recognizable of which have been given common names. Such names have become established to fill a vital communicative need and they have had considerable influence upon conceptualization of affective interactions. Various classification systems for affective interactions have been attempted, that devised by Kantor (1924) having included very useful major categories.

One of the outstanding characteristics of affective interactions is their susceptibility to conditioning. This sensitivity results not only in a variety of problems, but also in presenting a challenge to therapists who utilize behavioral techniques. Such techniques are now being widely applied in a variety of situations (includ-

ing disasters) and their use is bringing more and more favorable attention to behavioral psychology as a specialized profession.

As the purpose of my commentary is only to call attention to the important contribution that interbehavioral psychology has made to an understanding of affective (feeling) interactions, I will simply conclude by pointing out some of the important aspects have not been touched upon above. These include individual differences in such reactions and the formation and changing of affective habit patterns, including their duration over long periods of time, their presence and transmission as cultural characteristics, and their pathology in a variety of forms.

Readers who are further interested in this important topic should turn to chapter XII of Kantor's (1924) *Principles of Psychology* for 40 pages of thorough coverage. This is also available in a 15 page synopsis (see Mahan, 1968). Students of behavior who are unfamiliar with the interactional approach to feeling interactions may be pleasantly surprised. And, behavior therapists, especially, will be presented with a better understanding of the principles upon which their technical approach has, knowingly or unknowingly, been painstakingly established.

References

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Kantor on Operational and Explanatory Laws

The distinction between operational and explanatory laws possibly applies more to psychology than to physics of chemistry. In the latter sciences the entire distinction between description and explanation frequently breaks down becuase the worker's operations yield all the information obtainable concerning the essential character of certain events. Such physical laws as that of the lever, Hooke's law of elasticity, and the law of the freely falling body illustrate this point.

Operational laws generally yield correlational propositions which formulate correspondences between factorsin event fields, such as the balencing of l's and w's in the lever situation. The fact, however, that one may select and emphasize certain factors when manipulating them has led to the notion of dependency laws. From the proposition PV = K one may assert that P = K/V.

Dependency Laws in Psychology. Psychologists have often attempted to repudiate correlational laws in favor of dependency, on the questionable ground that functional equations are relatively more basic. Coupling this belief with the psychological tradition, psychologists have developed a strong conviction that responses are dependent varibales are are what they are because of stimulus and environmental conditions. In this situation the employment of R = f(s) for y = f(s) constitutes a flagrant example of substituting descriptions and symbolic presentations for original events.

The above mathematical expressiontaken by itself really indicates only a correlation between two variables. Its importance in science lies in the fact that no description of any event can be made with less than two terms. But even in Boyle's law one can put volume or pressure as the emphasized or "dependent" variable. In psychological situations nothing is easier to demonstrate than that the stimuli are as dependent upon responses as responses on stimuli. To disregard the mutuality of occurrence is to slip into the objectionable causal way of thinking.

An important suggestion here is to distinguish between variables -- the special relations of a mathematical system -- and event factors, which are usually, if not always, entirely different things.

Kantor (1958, pp. 95-96).
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