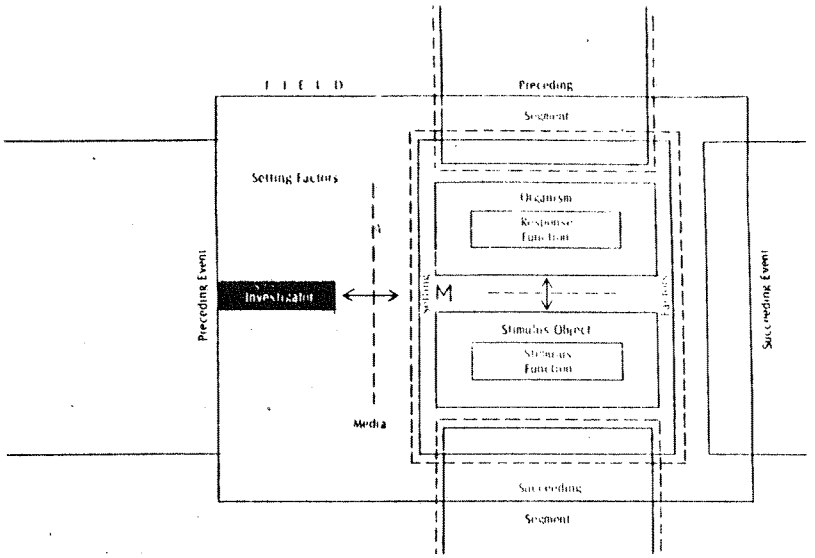
THE Interbehaviorist



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Too often, the appeal by psychologists to biological science has been nothing more than a symbolic clinging to the skirts of a make-believe biology.

L. J. Kamin, 1979. Excerpt from Eastern Psychological Association Presidential Address.

The Agora

Dennis Delprato of Eastern Michigan University supplied a copy of a doctoral program announcement from which the following is excerpted:

> Psychology in the School Community (a component of Transactional-Ecological Psychology, George Peabody College for Teachers, Vanderbilt University): Vanderbilt University offers a program leading to the Ph.D. degree in psychology with specialized training in transactional-ecological psychology (TEP). Psychology in the School Community is the school component of the TEP program, which provides a new and unified approach to doctoral training in those areas traditionally called clinical, community, counseling, and school psychology . . . . The TEP program is accredited by the American Psychological Association as a "combined professional-scientific psychology program . . . ..The school component is accredited by the National Council for Accreditation of Teacher Education . . . . Emphasis in the program is on the training of psychologists who will be able to conduct research and work at various system levels: individual, small group, and organization . . . Transactionalism is very broadly thought to be a system of inquiry that considers behavior a dynamic process involving the "environed organism" and the constantly changing properties of natural settings . . . . For information, write the Admissions Liaison Department of Psychology and Human Development, Box 512, George Peabody College for Teachers, Vanderbilt University, Nashville, Tennessee 37203.

A copy of the program announcement may be obtained from the editor or from Dennis Delprato.

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We end our ninth volume with significantly more subscribers than we had at the close of the last volume, a reversal of the trend in recent years. With this sign of the health of interbehaviorism as encouragement, I look forward to Volume 10, for which a subscription form is included with this issue. The first issue of Volume 10 will contain a most provocative interbehaviorally-oriented critique by Paul Mountjoy of Daniel Robinson's An Intellectual History of Psychology.

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Please note on the enclosed subscription form that, effective immediately, The Interbehaviorist has moved to Hartwick College in Oneonta, New York, where its editor will be an Associate Professor of Psychology.

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The feature article for this issue was contributed by M. H. and B. R. MacRoberts, who wrote in their cover letter:

> As you will see, the paper deals with ethology and interbehaviorism. Our efforts to persuade our ethological colleagues to listen to, much less publish, work that has an interbehavioral slant has met with almost universal failure (however, see reference 22 in the article) . . . if this article is acceptable for The Interbehaviorist, it can be sent as reprints to ethologists. Of course, psychologists could gain by looking at sister fields also.

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Interbehaviorism and animal communication theory

M. H. MacRoberts and B. R. MacRoberts[1]

Interbehaviorism has, of course, received a poor hearing from psychologists, but among ethologists interbehaviorism is virtually unknown. The purpose of this paper is to show briefly and simply that an interbehavioral approach is applicable to the study of animal behavior. We use the study of animal communication (zoosemiotics) as an exemplar.[2]

In order to understand zoosemiotics, one first needs to know something about semiotics.[3] Semiotics is concerned with the process of the transfer of ideas from one to another by means of language. As Sebeok[4] puts it, semioticians "face the twin task of constructing a model for the addresser to specify how a message is encoded and transformed into a signal carried by a variety of channels to the addressee; and of constructing a model for the addressee to specify the ways in which [animals and humans] utilize their knowledge of their code to recognize the messages they receive."

An interbehaviorist may note that underlying Sebeok's description of the semiotician's task is a commitment to an "in-brain to in-brain" model of communication, a model with a long tradition going back to the Patristics but becoming solidified in its modern form in the seventeenth century. Today the in-brain to in-brain model is dominant among semioticians. Hayakawa[5] expresses it so clearly that the essential point cannot be missed: "Now, human beings have agreed, in the course of centuries of mutual dependency, to let the various noises that they can produce . . . systematically stand for specified happenings in their nervous systems. For example, we who speak English have been so trained that, when our nervous systems register the presence of a certain kind of animal, we may make the following noise: 'There is a cat.' Anyone hearing us expects to find that, by looking in the same direction, he will experience a similar event in his nervous system . . . ." Similar statements

in the literature on communication are legion.

Between the seventeenth and twentieth century, one major addition was made to this model. Because almost the entire semiotic event is in-brain and thus unobservable, dissatisfaction developed, beginning with C. S. Peirce, which resulted in what today is called the action theory of meaning.[6] James[7] expressed it this way. "The current of life which runs in at our eyes, or ears is meant to run out at our hands, feet, or lips." Thus, the meaning of words (ideas) is to be found in their behavioral manifestations, for example, if a person announces, "It is time to go," and he and everyone else leaves, there is a connection between the idea and action, whereby the action indicates the meaning of the utterance. The action theory, then, is an attempt to materialize in-brain events as observable activity.

The action theory of meaning usually is pitted against the referential theory. Philosophically, the referential theory is realistic, for example, "house" refers to the object with windows and a roof across the street. This theory is given short-shrift by semioticians on the grounds that 1) while it works well with nouns, it fails entirely with syncategorical words such as "and," "if," or "the" and 2) it fails to take into account the supposed complexities of "perception" and "cognition"; that is, because the referential theory is not easily subsumed by the dominant in-brain to in-brain model, the theory goes by the way.

With this brief summary of semiotics, we turn to zoosemiotics, the study of animal communication. Fundamental in the dualistic tradition of the West is the dichotomy between humans and other animals. Humans have "minds" of one type, animals have minds of another type. The difference has been devilishly hard to pin down, but there is basic agreement that humans have conceptual thought, which animals lack,[8] whereas both men and animals have "emotions," that is, hunger, fear, sexual impulses, and so forth. Whatever the assumed

differences, however, both human and animal behavior is characteristically conceptualized as emanating from an organism impinged upon by stimuli that are immediately transformed into light or sound waves and then into neural action. This conceptualization is as evident in zoosemiotics as it is in semiotics.

According to W. J. Smith,[9] a zoosemiotic event is " . . . characterized by three essential features: a communicator, a signal, and a referent. The communicator's role is to transmit a signal, encoding therein a message which is in some way descriptive of some aspect(s) of the state of the central nervous system (CNS) of that individual. The message may refer among other things to a generalized anxiety, an emotional state such as aggression or fear, an activity being performed or probably about to be performed by the communicator, etc. The code used in forming the signal must be held in common by both communicator and recipient. To the recipient, the signal comes as one of many simultaneous inputs to the CNS." S. T. Smith[10] further develops the concept of message, "The message is the information about the displaying individual that the recipient of the display would know in the theoretical event in which he received only the display, unaccompanied by information from contextual sources. Messages indicate which behavior, of the communicator's entire repertoire, he is performing or is likely to perform . . . . "

In these terms, then, displays of animals are considered to be statements about emotions or tendencies, following from which the function of a display is, as W. J. Smith[11] suggests, " . . . to make the behavior of the communicator more predictable to the recipient by making available some information about the internal state of the communicator." W. J. Smith[12] provides an illustration: "A small bird seeing an approaching hawk . . . may utter a vocal display indicating a high probability that it (the

communicator) is, or soon will be, engaged in an attempt to escape. Other small birds, upon hearing his vocalizations, may seek cover immediately."

Consequently, according to zoosemiotic theory, the message of a display is identified "by examining in detail the use of the display and abstracting those features of the communicator's behavior that are common to all of the situations [in which the display is used] ."[13] The word "all" is important here. It pinpoints the sought-after unitary commonality or referent of the display.

The search for a general set of messages has led to the conclusion that although a particular species may have many different displays, the messages encoded are not nearly so numerous or so diverse as the displays themselves.[14] In fact, W. J. Smith[15] concludes that "all birds and mammals, and perhaps other vertebrates, may encode as messages selections from the same small set of referent classes." This conclusion, naturally, is reached because at the time of displaying, animals do only a limited number of things --- they may flee, approach, stay, locomote, and so forth. Because the display is said to encode the tendency behind these actions, it follows that there will only be a few messages, i.e., there are only so many emotions, as it were.

For the communicatee's part, the model begins with the signal (display), which is received and decoded. The signal, which is supposed to correlate with a disposition or tendency of the communicator that is reflected in the communicator's concurrent or subsequent acts (manifestations of in-brain events), thereby conveys information about what is on the communicator's mind. When the communicatee knows what is on the communicator's mind, he responds. The meaning of the display, that is, what the communicatee makes of it, is simply equated with the communicatee's response to it. The communicatee's response, like the communicator's, is also considered to reflect in-brain events.

In this view, under no circumstances is the display considered to refer to the "external" world. In fact, external stimuli, although sometimes referred to as "initiators" or "elicitors", are given no serious attention as possible referents and are really not a part of the behavior event.[16]

Without further explication of current conceptions of communication by zoosemioticians, and without criticizing this approach except to say that it is totally mentalistic and therefore suffers from the same problems that plague all mentalistic approaches --- confusion of media of contact for stimuli, reduction of complex event fields to in-brain events, limitation of observation to only a small fraction of what is supposedly happening, and so on --- we will briefly indicate the way that we believe animal communication events should be interpreted.

Kantor[17] characterizes language as being bistimulational and referential. Basically, the speaker responds to two things simultaneously, the thing spoken of and the person spoken to. The speaker's response adjusts the hearer to the thing spoken of. "There is the cat!" is a response made to the lost cat for which both have been searching. The statement adjusts the hearer to the cat.

It is a small step to transfer this bistimulational-referential model to animal communication. For example, many animals have what are called "alarm calls." Basically, these are given by social species in response to approaching predators. Hearers of these calls respond by hiding, fleeing or becoming inactive and attentive. Here we have a perfect example of bistimulational-referential behavior. The communicator, in a complex social and environmental field, responds to predators by calling and this adjusts social companions to the presence of predators. In such a description, there is no talk of light waves, in-brain events, transference of information, information theory, motivational states, emotions, the communicator's tendencies or next acts, or the communicatee knowing what is on the communicator's

mind. Kantor's radically novel approach to human language is allowed by his wholesale rejection of traditional assumptions, beginning with the traditional model of perception and ending with brain or mind dogma.

Let us now briefly return to the referential theory, which semioticians and zoosemioticians have so cavalierly discarded. As pointed out earlier, the theory has been rejected on two grounds. First, syncategorical words have no "existential" referents. Secondly, referential theory is based on realistic assumptions (there is a world outside organisms with which they make contact). Regarding the first criticism, in point of fact, no one speaks syncategorically. Semioticians have simply confused formal grammar and "word-things" with actual speech. Regarding the second criticism, as Kantor[18] has shown, the "received" views of perception, neurophysiology, and cognition are specious and represent little more than attempts to make "scientific" traditional assumptions originating in post-Hellenic philosophy. These responses to criticism of the referential theory place the shoe on the other foot and make it necessary for semioticians to justify their reliance on traditional assumptions.

In a paper of this length, it is impossible to do more than scratch the surface of this complex subject. Our purpose, however, has not been to cover semiotic-zoosemiotic theory completely but to indicate to interbehaviorists the feasibility of moving further afield in their endeavors to place behavior studies on a sound footing. As ethologists, we have found Kantor's work directly applicable to the study of animal behavior.[19] In fact, Kantor's[20] The Scientific Evolution of Psychology might easily be a treatise on the assumptional bases of ethology. His studies of physiology[21] are equally applicable, and so on. Of the behavioral sciences, psychology is probably the most advanced. It has had its behaviorist revolution and the seeds have been sown for the interbehaviorist revolution. Ethology has yet to have any revolution but remains largely in the grips of Mentalism.

References and notes

1. The authors wish to thank L. C. Shaffer for introducing us to interbehaviorism.
2. We rely heavily on the work of W. J. Smith because his is perhaps the best recent articulation of zoosemiotics. However, any one of a number of recent works provide the essentials of this approach. See J. P. Hailman, Optical Signals, University of Indiana Press, Bloomington, 1977, and T. A. Sebeok (Ed.), How Animals Communicate, Indiana University Press, Bloomington, 1977.
3. Modern classics are C. Morris, Signs, Language and Behavior, Braziller, N. Y., 1946, and C. Cherry, On Human Communication, M.I.T. Press, 1966.
4. T. A. Sebeok, "Animal Communication." Science, 147, 1965, 1006-1014, p. 1013.
5. S. I. Hayakawa, Language in Thought and Action, Harcourt, Brace, N. Y., 1949, p. 27.
6. W. P. Alston, Philosophy of Language, Prentice-Hall, Englewood Cliffs, N. J., 1964.
7. W. James, quoted in E. C. Moore, American Pragmatism: Peirce, James, and Dewey, Columbia University Press, N. Y., 1961, p. 142.
8. M. Adler, The Difference of Man and the Difference It Makes, Holt, Rinehart, Winston, N. Y., 1967.
9. W. J. Smith, "Message, meaning and context in ethology," American Naturalist, 99, 1965, 405-409.
10. S. T. Smith, "Communication and other behavior in Parus carolinensis," Publication of the Nuttall Ornithological Club, 11, 1972, p. 2.
11. W. J. Smith, "Messages of vertebrate communication," Science, Vol. 165, 1969, 145-150, p. 145.

12. W. J. Smith, "Animal communication," in W. E. Preede (ED.), The New Encyclopedia Britannica, Macropedia, 4, Benton, Chicago, 1974, 1010-1019, p. 1011.
13. S. T. Smith, op. cit., p. 2.
14. W. J. Smith, The Behavior of Communicating, Harvard University Press, Cambridge, 1977.
15. W. J. Smith, op. cit., 1969, p. 145.
16. See S. T. Smith, op. cit., W. J. Smith, op. cit., 1977, but also J. P. Hailman, "A review of The Behavior of Communicating," Auk, 95, 1978, 771-774.
17. J. R. Kantor, An Objective Psychology of Grammar, Principia, Chicago, 1936, and J. R. Kantor, op. cit., 1977.
18. J. R. Kantor, Problems of Physiological Psychology, Principia, Chicago, 1947, and J. R. Kantor, The Scientific Evolution of Psychology, Vol. I and II, Principia, Chicago, 1963 and 1969.
19. M. MacRoberts and B. R. MacRoberts, "Referent in animal communication," Bird Behaviour, in press.
20. J. R. Kantor, op. cit., 1963, 1969.
21. J. R. Kantor, op. cit., 1947.