

Interbehavioral Psychology and Radical Behaviorism: Some Similarities and Differences

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Both J. R. Kantor's interbehavioral psychology and B. F. Skinner's radical behaviorism represent well-articulated approaches to a natural science of behavior. As such, they share a number of similar features, yet they also differ on a number of dimensions. Some of these similarities and differences are examined by describing their emergence in the professional literature and by comparing the respective units of analysis of the two approaches—the interbehavioral field and the three-term contingency. An evaluation of the similarities and differences shows the similarities to be largely fundamental, and the differences largely ones of emphasis. Nonetheless, the two approaches do make unique contributions to a natural science of behavior, the integration of which can facilitate the development of that science and its acceptance among other sciences and within society at large.

Both J. R. Kantor's interbehavioral psychology and B. F. Skinner's radical behaviorism represent well-reasoned and forceful arguments for a natural science of behavior—a naturalism that stands in contrast to alternative systems of psychology. Despite this agreement on the nature of a science of behavior, the proponents of the two approaches differ on a number of issues, and at times deviously so. In some cases, the approaches are seen as so similar that one of them must be superfluous and insubstantial. In other cases, the approaches are seen as so different that one of them must be misguided or at least outmoded. The purpose of what follows is to examine some of these similarities and differences, first, by describing their emergence over time in the literature, and second, by comparing their respective conceptual units of analysis. The paper concludes with an evaluation of what is fundamental and what is superficial among the similarities and differences, and of what is explicit and what is implicit in the two approaches.

A paper of this length, of course, cannot provide a complete account of all the philosophical and technical issues involved, nor can it satisfy ardent proponents of either approach in their views of what was overlooked. Moreover, some of the observations contained herein cannot be supported by citations and should only be taken to reflect the accumulated scientific perspective of the author. What this paper does provide, though, is an overview of the similarities and differences, an evaluation of the issues involved, and some direction to other sources for more substantive analysis (see also Morris, 1982; Morris, Higgins, & Bickel, 1982, 1983).

THE EMERGENCE OF SIMILARITIES AND DIFFERENCES

J. R. Kantor received his formal training under the functionalist James Rowland Angell in the Department of Philosophy at the University of Chicago, from which he received his Ph.D. in 1917. His first books (Kantor, 1924, 1926) and almost all subsequent publications were philosophical in orientation. B. F. Skinner received his doctoral degree from the Department of Psychology at Harvard University in 1931 where he worked with William J. Crozier, the noted research physiologist. Skinner's (1938) first book

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was strongly empirical in nature, as have been many of his contributions since. Kantor's views, though, can contribute to empirical analysis, as seen in recent moves towards multiple-response methodology (cf. Delprato, in press) and as exemplified in the work of Henton and Iverson (1978) and Ray (e.g., Ray and Brown, 1975). Skinner, of course, has written conceptual papers that are important to anyone pursuing a natural science of behavior. Nonetheless, the two approaches do differ in that interbehavioral psychology has emphasized philosophical and conceptual analysis, while radical behaviorism has emphasized empirical and experimental analysis.

Kantor's publications throughout the 1920's illustrated the general themes and methods he expressed in subsequent work, especially in his emphasis on the relativity of knowledge, in the use of historical analysis to clarify psychological concepts, and in the role language plays in the analysis of human activity (see Kantor, 1971). Skinner made points similar to Kantor's later in his own work (e.g., Skinner, 1931, 1938, 1953), and even specifically commented that Kantor (1936) had been "on the right track" in the analysis of language (Skinner, 1979, p. 213). Indeed, Kantor's analysis of language were similar in important ways to those Skinner proposed 20 years later in *Verbal Behavior* (Skinner, 1957), especially in regards to the functional elements of verbal episodes and the nature of meaning and cause-effect relationships (Schoenfeld, 1969). Ironically, in light of the philosophical-empirical difference mentioned previously, Skinner has stated that *Verbal Behavior* would be his most important book (Skinner, 1980, p. 198), despite its being conceptually and not empirically based and as yet not broadly productive of basic or applied research.

Kantor was influenced by functionalists at Chicago such as Angell, who had been a student of William James at Harvard. While at Harvard, Skinner was influenced by the legacy of James's pragmatism and Mach's positivism and by Crozier's descriptive functionalism (see Day, 1980), all of which are congruent

with the contextualistic world view (cf. Pepper, 1942) of interbehavioral psychology. Kantor's views were also influenced by the objectivist trend in psychology, as can be seen in the naturalism of his approach and in the early and strong stances he took against mentalism and the instinct doctrine (Kantor, 1924, 1926). These points were well-articulated later by Skinner (e.g., Skinner, 1953), whose arguments against reducing learning and cognition to the structure and function of the brain (Skinner, 1931, 1938) were cited positively by Kantor (1947, pp. 79, 136).

Although Kantor defended behaviorism (Kantor, 1933), he was always critical of mechanistic, methodological, and cognitive behavior theory. Both Kantor (1938) and Skinner (1945) raised similar objections to the use of logical positivism and operationism to support these latter views (cf. Moore, 1975, 1981). The mentalism inherent in these approaches is subtle and pervasive, however, and even Skinner was made sensitive to this through Kantor's criticisms. As Skinner (1967) acknowledged, "Another behaviorist whose friendship I have valued is J. R. Kantor. In many discussions with him . . . I profited from his extraordinary scholarship. He convinced me that I had not wholly exorcized all the 'spooks' in my thinking" (p. 411). More specifically, Skinner (1938, p. viii) credited Kantor for sensitizing him to the dangers inherent in the concept of drive, which Skinner used in his early work (e.g., Skinner, 1938, 1953). These points suggest that Kantor was the behaviorist's behaviorist.

During Kantor's tenure in the Department of Psychology at Indiana University (1920-1959), he founded *The Psychological Record* (1937) in which Skinner published numerous early articles, and for which Skinner later served as an associate editor. In addition, Kantor brought Skinner down from Minnesota to head the department from 1945 to 1947. Both Kantor and Skinner had their followings at Indiana, and their approaches were the basis for much intellectual discussion (Fuller, 1973; Lichtenstein, 1973). For example, the

interbehaviorists urged the radical behaviorists to focus on human behavior as it occurs in everyday settings and is described in ordinary-language terms (cf. Wittgenstein, 1953). The radical behaviorists, though, argued for the development of a science of behavior that began from analyses of fundamental principles before examining the complex content of everyday life. This is a difference that has continued over the years, although it has lessened of late.

This brief chronology of historical events illustrates that Kantor was perhaps the first to articulate a truly behavioral system of psychology, and that interbehavioral psychology is not suddenly encroaching on the established conceptual domain of radical behaviorism. If anything, the opposite may be the case. Insensitivity to this point may be one reason why some interbehavioral psychologists have seemed contentious at times. The historical record, though, seems clear on this matter.

These comments complete this section, but before evaluating the similarities and differences described herein, the respective conceptual units of analysis need to be examined.

INTERBEHAVIORAL FIELDS AND THREE-TERM CONTINGENCIES

Kantor's basic unit of analysis is the interbehavioral field, comprised of the mutual and reciprocal interactions among variables related to five generic factors: (a) the organism, (b) the stimulus, (c) the media of stimulation, (d) setting factors, and (e) interbehavioral history. All behavioral events are composed of these factors and cannot be reduced to an analysis of any one or subset of them. In these and other matters, interbehavioral psychology is an integrated-field theory.

This integrated-field orientation is not necessarily antithetical to radical behaviorism. Skinner, himself, has acknowledged the usefulness of a systems concept, stating that he "found it helpful in thinking about the behavior of the organism as a whole" (Skinner, 1979, p.

101). In addition, Skinner (1953; see also Sidman, 1978) has clearly pointed out that

... any *unit* of operant behavior is to a certain extent artificial. Behavior is the coherent, continuous activity of an integral organism. Although it may be analyzed into parts for theoretical or practical purposes, we need to recognize its continuous nature in order to solve certain common problems. (p. 116)

Although basic and applied analyses of behavior seemingly make radical behaviorism appear elementaristic and mechanistic by focusing on linear cause-effect sequences among the constituents of the three-term contingency, radical behaviorism actually has more in common with other field theories and contextualistic approaches than with the learning theories of classic behaviorism (see Krechevsky, 1939, pp. 406-407; Verplanck, 1954, p. 307). But still, the three-term contingency is not an integrated-field approach, the latter of which is typically seen as a more advanced scientific view in general (cf. Einstein & Infeld, 1938) and which has much to offer on issues such as causation, mechanism, and the contextual determinants of behavior.

The interbehavioral field, though, like the three-term contingency, can be separated into its constituent factors for analytic purposes, thereby permitting a more specific examination of some similarities and differences between the two approaches. These factors are described below, first, by focusing on organism-environment interactions, and then on the factors comprising the contexts of those interactions—the media, setting factors, and interbehavioral history.

Organism-Environment Interactions

Within interbehavioral psychology, the organism and the environment can be described in two comparable ways—by their forms and by their functions.

The organism. Biological equipment aside, the organism may be described in terms of its response forms, that is, the structural aspects of its behavior, and in terms of its response functions. The latter are the whys, wherefores, or meanings of

behavior in interaction with the environment, defined in terms of the functional relation between behavior and the other factors in the field, most notably the stimulus. Radical behaviorism presents similar levels of analysis. Kantor's response form is analogous to response topography and is also captured by the concept of the response instance. Kantor's response function is similar to that of response class (cf. Skinner, 1935).

Both approaches are clear on several important points here. First, response functions and classes are not defined independently of the other factors in the field or of the contingencies of reinforcement, respectively. Rather, they are defined interdependently with those factors and other terms. Second, a response function may be comprised of a variety of response forms—no response function is inherent in a response form. Moreover, no response form has an inherent response function.

The stimulus. Interbehavioral psychology and radical behaviorism also offer similar analyses for the stimulus with which the organism interacts. Stimuli may be analyzed both in terms of their forms and in terms of their functions or classes (cf. Skinner, 1935). In both cases, stimulus functions and classes are not defined independently of the other factors in the field or members of the three-term contingency, respectively. In addition, a stimulus function may be comprised of a variety of stimulus forms—no stimulus function is inherent in a stimulus form. Moreover, no stimulus form has an inherent stimulus function.

The interaction. Interbehavioral psychology explicitly points out that the unit of behavior encompasses the mutual and reciprocally defining functional relationships between stimuli and responses. Skinner (1938) has directly acknowledged Kantor's contributions in this regard: "The impossibility of defining a functional stimulus without reference to a functional response, and *vice versa*, has been especially emphasized by Kantor" (p. 35). Although Skinner has couched his analysis in an experimental and ge-

neric language (e.g., respondent and operant response functions, and eliciting, discriminative, and reinforcing stimulus functions) instead of natural-language terms, his treatment of stimuli and responses, and of their interrelationships in the three-term contingency, is essentially descriptive (see Day, 1980, pp. 227–234), and hence similar to the interbehavioral position. What radical behaviorism may lack here is the clear interbehavioral emphasis on the "evolutional" nature of organism-environment interactions, especially in the view that stimulus and response functions are in continuous development. Indeed, the essence of both approaches is, in a sense, developmental (see Bijou & Baer, 1978).

The Context of Organism-Environment Interactions

Another point on which interbehavioral psychology is quite clear is in emphasizing that organism-environment interactions occur in contexts and, indeed, that responses and stimuli do not have functions or meaning apart from the contexts in which they occur. Within interbehavioral psychology, the three generic contextual factors are the media of stimulation, setting factors, and interbehavioral history.

The media of stimulation. The media of stimulation refer to the sensory means by which contact is made between the organism and the stimulus environment. The media are not properties of the organism—or of the stimulus, but are the physical conditions (e.g., light) that permit contact between the two. Radical behaviorism offers no analogous concept, though the factor must be at least implicitly acknowledged.

Setting factors. Setting factors are organismic or environmental conditions that influence which stimulus-response functions, previously established through an interbehavioral history, will occur at a particular time. In other words, setting factors serve a meta-function—a function defined by the effects of setting factors on facilitating or inhibiting partic-

ular organism-environment interactions. Setting factors are not defined by any formal characteristics. Although radical behaviorism has offered no similar concept, these conditions are acknowledged in respondent concepts such as habituation and dishabituation and in operant concepts such as satiation-deprivation, emotional predispositions, schedule control, and conditional discriminative stimuli. Recently, a more general recognition of these factors has taken place with the introduction of the concepts of the "establishing operation" and "establishing stimulus" (Michael, 1982) and by moves to examine the ecology of behavior (Rogers-Warren & Warren, 1977) and "setting events" (e.g., Wahler & Fox, 1981). In all of these cases, the intent has been to provide an analysis of the contextual determinants involved in all organism-environment interactions (see Larsen & Morris, 1983).

Interbehavioral history. Interbehavioral history is the history of past interactions between organisms and their environments. Interbehavioral history—both phylogenetic and ontogenetic—is the source through which the response functions of organisms and the stimulus functions of the environment develop and evolve. In radical behavioral terminology, these histories are the source of classes of respondent and operant response functions and of eliciting, discriminative, and reinforcing stimulus functions. Both interbehavioral psychology and radical behaviorism adhere to historical causation in this regard.

AN EVALUATION

The introduction to this paper promised that the final section would evaluate the similarities and differences between interbehavioral psychology and radical behaviorism for what was fundamental and for what was superficial among them, and for what was explicit and what was implicit in the approaches. The evaluation is this. First, the similarities are fundamental similarities. Even Skinner has said that his differences with Kantor were

trivial compared to the similarities (Skinner, 1979, p. 325). Second, the differences are basically differences in what is explicitly and implicitly emphasized. The approaches are neither so similar that one of them must be superfluous, nor so different that one of them must be misguided. A science of behavior needs the complementary strengths and advantages that are explicit in both approaches, as is argued in what follows.

First, descriptions of interbehavioral psychology as obscurely philosophical or of radical behaviorism as naively empirical are mere caricatures—not characteristics—of the two approaches. A science of behavior, perhaps more than any other natural science, needs both scholarly philosophical and creative empirical work. Any interbehavioral assertion that basic and applied behavior analyses are inherently elementaristic and mechanistic is uncharitable. Kantor (1970), himself, cited the experimental analysis of behavior as "one of the first adequate scientific formulations of experimental psychology" (p. 102). Any radical behavioral assertion that useful philosophical analysis cannot be achieved by those who do not pursue empirical analyses of behavior is unsympathetic. Both sets of assertions overlook and misrepresent the many kinds of valuable contributions that can be made to science.

Second, while interbehavioral psychology and radical behaviorism share a contextualistic world view, the programs on which Kantor and Skinner embarked were different. Kantor's program sought a descriptive understanding of naturally occurring human behavior in all its rich forms and functions. This view of behavior takes into account the specific nuances of behavior expressed in the culture's natural language (see Wittgenstein, 1953) that are not reducible by simple analogy to generic principles of behavior (cf. Deitz & Arrington, 1984). Skinner's program sought a descriptive understanding of basic principles of behavior for their value in prediction and control. In doing so, his program has contributed immensely to effective action in basic and

applied research. One program is not necessarily right or wrong—interest depends on context. The approaches simply pursue different ends within a naturalistic framework.

The last issue has to do with the professional and public acceptance of a science of behavior. Kantor was always quite clear about the need for behavioral scientists to set out their metatheoretical positions in an explicit fashion (cf. Kantor, 1959, 1981). Metatheoretical positions reflect important controlling factors in the interaction of scientists with their subject matter. The development of a science of behavior on the basis of unexamined assumptions has too often led to metaphysical positions not in keeping with a natural science (see Kantor, 1963, 1969). Radical behaviorists have rarely taken up this explicit philosophical exercise, perhaps because of their strong empirical orientation. Having an empirical orientation, though, does not mean that scientists can step outside the ongoing historical and cultural stream into some supposed objective reality of their data (cf. Day, 1980). By not always explicating their metatheoretical positions clearly and accurately, radical behaviorists may have promoted misunderstandings among themselves (cf. Hayes, 1984), misconceptions by professional peers (see Moore, 1984), misrepresentation by the media (see Turkat & Feuerstein, 1978), and the miseducation of students (Todd & Morris, 1983). Although a culture's eventual adoption of a scientific system may have once depended largely on the benefits of its attendant technology, the current ability of the media and educational systems to misrepresent the behavioral sciences may delay or deny such an evolution. The adoption of a science of behavior by a culture, then, may not only depend on the benefits of its technology, but also on how correctly and explicitly the metatheoretical assumptions are presented. As long as those assumptions are left implicit or unexamined, they are open for misunderstanding and misrepresentation (cf. Day, 1980, p. 255). Interbehavioral psychology is quite explicit and sophisticated about meta-

theoretical assumptions. These need to be integrated with the empirical and conceptual strengths of radical behaviorism to improve the acceptability of a natural science of behavior.

CONCLUSION

One defining characteristic of the field of behavior analysis is its assumption that behavior is a proper subject matter for the natural sciences. The development of the natural science of behavior, and hence of the field behavior analysis, does not require an exclusive dedication to just one or the other of interbehavioral psychology or radical behaviorism. What that science probably will require, though, is an integration of the unique strengths and contributions of both approaches. Some conceptual and technical differences between the two approaches do, of course, exist and will continue to appear (e.g., Parrott, 1984; cf. Smith, Mountjoy, & Ruben, 1983), but the instances in which the approaches do not correlate should not be taken to mean that they are not generally of one class. Although the proponents of interbehavioral psychology and radical behaviorism should certainly maintain their critical acumen, they are probably too few to afford unnecessarily acrimonious and destructive debates. Instead, they should look more sympathetically at that which is good and strong and unique in the other so that the natural science of behavior can be better attained.

REFERENCES

- Bijou, S. W., & Baer, D. M. (1978). *Behavior analysis of development*. Englewood Cliffs, NJ: Prentice-Hall.
- Day, W. F. (1980). The historical antecedents of contemporary behaviorism. In R. W. Reiber & K. Salzinger (Eds.), *Psychology: Theoretical-historical perspectives* (pp. 203-263). New York: Academic Press.
- Deitz, S. M., & Arrington, R. L. (1984, May). *Some benefits for behavior analysis from Wittgenstein's language games*. Paper presented at the meeting of the Association for Behavior Analysis, Nashville, TN.
- Delprato, D. J. (in press). Response patterns. In H. W. Reese & L. J. Parrott (Eds.), *Advances in behavioral science*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Einstein, A., & Infeld, L. (1938). *The evolution of*

- physics: From early concepts to relativity and quanta. New York: Simon and Schuster.
- Fuller, P. R. (1973). Professors Kantor and Skinner—The "Grand Alliance" of the 40's. *Psychological Record*, 23, 318-324.
- Hayes, S. C. (1984). But whose behaviorism is it? [Review of *Behaviorism, science, and human nature*]. *Contemporary Psychology*, 29, 203-206.
- Henton, W. W., & Iverson, I. H. (1978). *Classical conditioning and operant conditioning: A response pattern analysis*. New York: Springer-Verlag.
- Kantor, J. R. (1924). *Principles of psychology*, Vol. 1. Bloomington, IN: Principia Press.
- Kantor, J. R. (1926). *Principles of psychology*, Vol. 2. Bloomington, IN: Principia Press.
- Kantor, J. R. (1933). In defense of stimulus-response psychology. *Psychological Review*, 40, 324-336.
- Kantor, J. R. (1936). *Objective psychology of grammar*. Bloomington, IN: Principia Press.
- Kantor, J. R. (1938). The nature of psychology as a natural science. *Acta Psychologica*, 4, 1-61.
- Kantor, J. R. (1947). *Problems in physiological psychology*. Bloomington, IN: Principia Press.
- Kantor, J. R. (1959). *Interbehavioral psychology*. Granville, OH: Principia Press.
- Kantor, J. R. (1963). *The scientific evolution of psychology*, Vol. 1. Granville, OH: Principia Press.
- Kantor, J. R. (1969). *The scientific evolution of psychology*, Vol. 2. Granville, OH: Principia Press.
- Kantor, J. R. (1970). An analysis of the experimental analysis of behavior (TEAB). *Journal of the Experimental Analysis of Behavior*, 13, 101-108.
- Kantor, J. R. (1971). *The aim and progress of psychology and other sciences*. Chicago: Principia Press.
- Kantor, J. R. (1981). *Interbehavioral philosophy*. Chicago: Principia Press.
- Krechevsky, I. (1939). [Review of *The behavior of organisms*]. *Journal of Abnormal and Social Psychology*, 34, 404-407.
- Larsen, S. E., & Morris, E. K. (1983, May). On the usefulness of the setting event concept in behavior analysis. Paper presented at the meeting of the Association for Behavior Analysis, Milwaukee.
- Lichtenstein, P. E. (1973). Discussion: "Contextual Interactionists." *Psychological Record*, 23, 325-333.
- Michael, J. L. (1982). Distinguishing between discriminative and motivational functions of stimuli. *Journal of the Experimental Analysis of Behavior*, 37, 149-155.
- Moore, J. (1975). On the principle of operationism in a science of behavior. *Behaviorism*, 3, 120-138.
- Moore, J. (1981). On mentalism, methodological behaviorism, and radical behaviorism. *Behaviorism*, 9, 55-77.
- Moore, J. (1984). On the tactful specification of meaning [Review of *The encyclopedic dictionary of psychology*]. *Journal of the Experimental Analysis of Behavior*, 41, 387-395.
- Morris, E. K. (1982). Some relationships between interbehavioral psychology and radical behaviorism. *Behaviorism*, 10, 187-216.
- Morris, E. K., Higgins, S. T., & Bickel, W. K. (1982). The influence of Kantor's interbehavioral psychology on behavior analysis. *The Behavior Analyst*, 5, 158-173.
- Morris, E. K., Higgins, S. T., & Bickel, W. K. (1983). Contributions of J. R. Kantor to contemporary behaviorism. In N. W. Smith, P. T. Mountjoy, & D. H. Ruben (Eds.), *Reassessment in psychology: The interbehavioral alternative* (pp. 51-89). Washington, DC: University Press of America.
- Parrott, L. J. (1984). Listening and understanding. *The Behavior Analyst*, 7, 29-39.
- Pepper, S. C. (1942). *World hypotheses*. Berkeley: University of California Press.
- Ray, R. D., & Brown, D. A. (1975). A systems approach to behavior. *The Psychological Record*, 25, 459-478.
- Rogers-Warren, A., & Warren, S. F. (Eds.). (1977). *Ecological perspectives in behavior analysis*. Baltimore: University Park Press.
- Schoenfeld, W. N. (1969). J. R. Kantor's *Objective Psychology of Grammar and Psychology and Logic*: A retrospective appreciation. *Journal of the Experimental Analysis of Behavior*, 12, 329-347.
- Sidman, M. (1978). Remarks. *Behaviorism*, 6, 265-268.
- Skinner, B. F. (1931). The concept of the reflex in the description of behavior. *Journal of General Psychology*, 5, 427-458.
- Skinner, B. F. (1935). The generic nature of the concepts of stimulus and response. *Journal of General Psychology*, 12, 40-65.
- Skinner, B. F. (1938). *The behavior of organisms* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Skinner, B. F. (1945). The operational analysis of psychological terms. *Psychological Review*, 52, 270-277.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Macmillan.
- Skinner, B. F. (1957). *Verbal behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Skinner, B. F. (1967). B. F. Skinner. In E. G. Boring & G. Lindzey (Eds.), *A history of psychology in autobiography* (pp. 385-413). New York: Appleton-Century-Crofts.
- Skinner, B. F. (1979). *The shaping of a behaviorist*. New York: A. A. Knopf.
- Skinner, B. F. (1980). The experimental analysis of operant behavior: A history. In R. W. Rieber & K. Salzinger (Eds.), *Psychology: Theoretical-historical perspectives* (pp. 191-202). New York: Academic Press.
- Smith, N. W., Mountjoy, P. T., & Ruben, D. H. (Eds.). (1983). *Reassessment in psychology: The interbehavioral alternative*. Washington, DC: University Press of America.
- Todd, J. T., & Morris, E. K. (1983). The misrepresentation of behavior analysis in psychology textbooks: Misconception and miseducation. *The Behavior Analyst*, 6, 153-160.
- Turkat, I. D., & Feuerstein, M. (1978). Behavior modification and the public misconception. *American Psychologist*, 33, 194.

- Verplanck, W. S. (1954). Burrhus F. Skinner. In W. K. Estes, S. Koch, K. MacCorquodale, P. E. Meehl, C. G. Mueller, W. N. Schoenfeld, & W. S. Verplanck (Eds.), *Modern learning theory: A critical analysis of five examples* (pp. 267-316). New York: Appleton-Century-Crofts.
- Wahler, R. G., & Fox, J. J. (1981). Setting events in applied behavior analysis: Toward a conceptual and methodological expansion. *Journal of Applied Behavior Analysis*, 14, 327-338.
- Wittgenstein, L. (1953). *Philosophical investigations* (G. E. M. Anscombe, trans.). New York: Macmillan.