A Retrospective Appreciation of Willard Day's Contributions to Radical Behaviorism and the Analysis of Verbal Behavior

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Willard Day's contributions to radical behaviorism are grouped under three headings: (a) an emphasis on the distinction between radical and methodological behaviorism; (b) an emphasis on the interpretation, rather than the prediction and control, of behavior; and (c) an emphasis on the analysis of verbal behavior as a natural, ongoing phenomenon. The paper suggests that the contributions above are listed in ascending order of significance.

Willard F. Day, Jr., was a Virginia gentleman, an Episcopalian, a Republican, a musician, a connoisseur of oriental cuisine, and a scholar with an incredibly wide variety of interests, foremost among which was the work and thought of B. F. Skinner. Willard's deep interest in Skinner was not an outgrowth of an experimental research program in which he and his students studied rats that pressed levers or pigeons that pecked keys. There was not even any laboratory equipment for studying operant conditioning at the University of Nevada— Reno, where Willard spent the bulk of his influential career. Rather, Willard's interest grew out of a conviction that the world would be a better place if Skinner's work was more deeply appreciated. To this end, Willard liked to spend hours patiently listening to people talk about Skinner. He would then inspire them to go out and act according to whatever interpretation they made of Skinner's work. Few have had such a great impact on such a great variety of people.

Recognition of Willard's name is often associated with the publication in 1969 of two of his philosophically oriented articles in the *Journal of the Experimental Analysis of*

Behavior, a journal noted primarily for the publication of data relevant to the behavior of individual organisms (Day, 1969a, 1969b). In 1972, Willard launched the interdisciplinary journal Behaviorism, now Behavior and Philosophy. The journal quickly became an authoritative source for articles relating to behaviorism as a philosophy, and especially for articles relating to Skinner's work. Willard rapidly became a leading proponent of the philosophy underlying Skinner's position: radical behaviorism. Willard's own writing examined the history and nature of behaviorism, and his various articles were much discussed in seminars and classrooms around the country. As his interests evolved, Willard turned to the analysis of verbal behavior, for he felt keenly that radical behaviorism could make its most significant impact on contemporary psychology in the area of verbal behavior.

A retrospective look at Willard's professional career suggests that Willard's contributions to radical behaviorism and the analysis of verbal behavior may be grouped under three headings:

- (a) He emphasized the distinction between radical and methodological behaviorism;
- (b) he emphasized the interpretation, rather than the prediction and control, of behavior; and
- (c) he emphasized the analysis of verbal

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behavior as a natural, ongoing phenomenon.

The purpose of the present paper is to examine his contributions in these areas.

THE DISTINCTION BETWEEN RADICAL AND METHODOLOGICAL BEHAVIORISM

Willard's most widely recognized contribution is probably his emphasis of the distinction between radical and methodological behaviorism. Most persons undoubtedly understand behaviorism in a general way as a point of view that attempts to explain behavior using only concepts that are defined in "objective" terms. Bergmann (1956) provides a well-known statement of the general behaviorist thesis:

It must in principle be possible to predict future behavior, including verbal behavior, from a sufficiency of information about present (and past) behavioral, physiological, and environmental variables. (p. 270)

To be sure, Bergmann's statement above does generally illustrate the behaviorist position. However, there is much more to be said. As many students of the history of psychology know, behavioral psychology evolved in two successive forms. The first was the classical S-R behaviorism of John B. Watson, which was influential from its inception in 1913 to, say, around 1930. In a far-ranging discussion, Koch (1964, pp. 7-9) suggests that classical behaviorism was intimately concerned with such themes as objectivity, associationism, peripheralism, learning, empiricism, and environmentalism.

The second form was S-O-R mediational neobehaviorism, which arose during the 1930s, partly in response to perceived inadequacies of classical behaviorism. This second form, which many argue remains prevalent, is distinguished by the elaboration of the many intervening, "organismic" variables that are commonly thought to be necessary to secure appropriately theoretical explanations of behavior. Indeed, most persons today probably think of one or another form of mediational neobehaviorism when they think of behaviorism. Koch

(1964, pp. 9-16) has suggested mediational neobehaviorism may be seen as a marriage between the "orienting attitudes" of classical behaviorism and one or another interpretation of the "new" model of science associated with logical positivism and operationism.

The important point is that although Skinner was of the same intellectual generation as the mediational neobehaviorists, his position is entirely different. Thus, neither the analysis of Bergmann (1956) nor that of Koch (1964) adequately distinguishes Skinner from other people also called behaviorists. Acknowledging such differences is important in light of such pieces as Skinner (1938), Skinner (1945), Skinner (1953), and especially Skinner (1957), which all clearly differ from other behaviorist work of the time.

Skinner (1945) eventually applied the term "methodological behaviorism" to characterize the various kinds of mediational neobehaviorism that arose in the 1940s and that have been popular ever since. Skinner took great pains to distinguish methodological behaviorism from his own position, which he called "radical behaviorism" (see Schneider & Morris, 1987, for a historical review of the usage of the two terms). The precise conceptual differences between radical and methodological behaviorism are complex, and concern such issues as ontology, behavior as a subject matter in its own right, the relation between verbal behavior and explanation, and methodology, among others (see Day, 1983; Moore, 1975). Of particular importance is the underlying set of epistemological assumptions guiding how phenomena that are not publicly observable are to be accommodated in a science of behavior.

In any case, suffice it to say that Willard was concerned people did not appreciate these differences, and therefore did not appreciate Skinner's unique contribution to psychology. Thus, Willard's many papers contrasting radical with methodological behaviorism were not simply academic pedantry. Rather, the papers were a means to stimulate an accurate and valuable

understanding of the nature of radical behaviorism.

Willard wrote explicitly about the nature of radical behaviorism, and the differences between radical and methodological behaviorism, in at least five places over the years, although the topic is implicit in almost all his work. The first two are the papers published in the Journal of the Experimental Analysis of Behavior, previously mentioned. In the first (Day, 1969b), Willard proposed four basic dimensions of radical behaviorism. The four are (a) a focal interest in the control of behavior, (b) a focal awareness that any scientist is a behaving organism, (c) a focal interest in verbal behavior controlled by directly observed events, and (d) a focal awareness of the importance of environmental variables. Much of Willard's writing in this paper was presumably under the audience control of Sigmund Koch, who in a 1963 symposium had asked for some statement of the defining characteristics of the behaviorist thesis from Skinner's point of view (see Day, 1969b, p. 317, for relevant comments on this matter).

In the second Journal of the Experimental Analysis of Behavior paper (Day, 1969a), Willard noted 10 similarities between Skinner's position and that of the philosopher Ludwig Wittgenstein, whose work Willard studied on a fellowship in England. The similarities are (a) an antipathy to logical positivism, (b) anti-reductionism, (c) anti-dualism, (d) the significance of private events, (e) the impossibility of a purely private language, (f) the behavioral nature of language, (g) an opposition to reference theories of language, (h) the nature of meaning, (i) antimentalism, and (j) an interest in description.

The third treatment is in a chapter specifically composed for an edited book (Day, 1976). Here the list is shorter: (a) a concern with the contingencies involved in behavioral control, (b) an opposition to mentalism, and (c) a particular conviction with respect to social planning, namely, that if we are to survive as a species we should begin to structure our social envi-

ronment so that it acts to produce people who have the behavioral equipment necessary for us all to survive. Noteworthy is the appearance of this third characteristic, which had previously not been mentioned in Willard's writing. Presumably, its inclusion was occasioned by the publication of Beyond Freedom and Dignity (Skinner, 1971), in which such concerns are voiced.

The fourth treatment is early in another chapter for an edited book (Day, 1980). The chapter provides a historically oriented analysis of behaviorism, but at the beginning Willard lays out what he takes as four salient features of the behaviorism of the present: (a) a focal interest in the study of behavior, as a subject matter in its own right, (b) antimentalism, (c) a commitment to biological evolutionism, and (d) a commitment to materialistic determinism.

The fifth treatment is narrative rather than ostensive (Day, 1983). The treatment was originally a convention talk given in 1978, and then developed in a journal article:

When it comes to a statement of what radical behaviorism is, the most straightforward thing to say is that it is the attempt to account for behavior solely in terms of natural contingencies: either contingencies of survival, contingencies of reinforcement, or contingencies of social evolution. (p. 101)

This last passage presumably reflects the increasing appearance of the evolutionary metaphor in Skinner's own writing, where behavior is selected by its consequences just as a species is selected by its ability to adapt to its environment (for example, see Catania & Harnad, 1988, pp. 11-76).

Taken together, these treatments suggest an ongoing concern with getting it straight about Skinner. However, Willard also made other contributions. Let us now turn to a second: his emphasis on interpretation.

THE INTERPRETATION, RATHER THAN THE PREDICTION AND CONTROL, OF BEHAVIOR

Willard also emphasized the interpretation, rather than the prediction and control of behavior. Indeed, for Willard one of the most important features of Skinner's position was precisely that it allowed people to make sense out of their everyday lives. Willard was especially fond of such quotes as the following from Skinner (1974), emphasizing the significance of interpretation:

Obviously we cannot predict or control human behavior in daily life with the precision obtained in the laboratory, but we can nevertheless use results from the laboratory to interpret behavior elsewhere. . . . [A]ll sciences resort to something much like it. . . . [T]he principles of genetics are used to interpret the facts of evolution, as the behavior of substances under high pressures and temperatures are used to interpret geological events in the history of the earth. (pp. 228-229)

Willard's emphasis of interpretation, as opposed to formal experimental control, presumably grew from two factors. One was his rejection of the formalism of logical positivism and traditional experimental methodology. Willard was trained as an experimental psychologist, with a specialty in sensation and perception. He was wellacquainted with traditional experimental methodology, which was based heavily on operationism and logical positivist epistemology. According to this methodology, hypotheses were formed, carefully controlled conditions were imposed, publicly observable data were recorded, tests of statistical inference were conducted, and conclusions were reached. The carefully controlled conditions of the scientific method were presumed to provide the only kind of knowledge that could be trusted.

Wittgenstein and Skinner, and of course Willard also, rejected this entire conception of knowledge. Knowledge was simply not the unique achievement of symbolic processes codified by formal hypothesis testing experiments. Such an approach manifested mentalism to the highest degree. Rather, knowledge was simply a name for various forms of adaptive behavior, which from Skinner's perspective were produced by contingencies.

A second factor was Willard's belief that many of the relevant contingencies affecting human behavior just could not be easily studied in the laboratory. That difficulty did not mean that radical behaviorists should restrict themselves to the study of contingencies that could be more easily studied. Rather, radical behaviorists should engage these contingencies at the level of interpretation. The interpretations should be non-mentalistic, non-reductive, and derived from the other principles that were part of the radical behaviorist position. Pragmatic, effective action was the key, and consideration of the broad scope of human activity revealed that interpretation often provided the basis for effective action.

Accompanying Willard's interest in interpretation was his interest in the "confirmation" of interpretations. An interpretation is confirmed when additional variables are generated that increase its probability of promoting effective action (Skinner, 1957, p. 425). For example, if we look up information about some event, we add a textual response to clarify our understanding of the event. If we ask an expert, we add an echoic. If we manipulate other verbal behavior concerned with the same event, we supplement the interpretation with intraverbals. If we use instruments to amplify aspects of the events with which we are concerned, we bring ourselves into contact with new stimuli that sharpen stimulus control over our actions, and thereby increase the probability the interpretation will develop into a tact. These processes were all intimately associated with the contingencies underlying everyday action, and were not reflected in ordinary studies of behavior.

At times, Willard rejected a traditional, formalistic approach to knowledge with an almost anti-scientific fervor. Willard was always ready with a challenge if one inadvertently spoke of knowledge in ways that focused too tightly on scientific procedure (see for example, his comments on Moore, 1975, in Day, 1987, p. 27). Willard always insisted on "going beyond the facts" and on assessing contingencies that were difficult if not impossible to bring into the laboratory for investigation. He was interested in how a client might influence interactions with a therapist, and vice versa. He was interested in how parents might influence interactions with their children, and vice versa. In short, he wanted to develop analytic repertoires so that persons could see contingencies at work in their everyday lives, and thereby live more effectively. A conspicuous challenge in this regard was the interpretation of verbal behavior as an ongoing natural phenomenon, to which we now turn.

THE ANALYSIS OF VERBAL BEHAVIOR AS A NATURAL, ONGOING PHENOMENON

Willard was also deeply committed to the analysis of verbal behavior as a natural, ongoing phenomenon. He was interested in the study of verbal behavior in the sense of discourse analysis. He was interested in studying how an audience influenced what was spoken and how it was spoken. He was interested in studying how the content of a conversation changed when the setting changed, and in studying how people talked about their experiences. All of these interests dealt with verbal behavior in a natural setting. None of these interests were easily captured in traditional studies of language. Phenomenological and hermeneutic literature, and even enlightened literature on clinical interviewing, was more relevant to these interests than reading standard experimental literature, including most literature from the experimental analysis of human behavior. Yet, all of this literature needed to be put in good order, which is to say interpreted according to Skinner's radical behaviorism.

Willard conducted a variety of projects on verbal behavior with his students. These projects were not formal tests of hypotheses, or anything remotely close to standard verbal learning experiments. Willard's rejection of formal methods, coupled with his emphasis on interpretation, guaranteed an idiosyncratic approach. Rather, Willard conceived of the projects as demonstrations that validated the essential correctness of Skinner's approach to verbal behavior. For example, in many of the projects, subjects were simply induced to talk, and attempts were made to relate changes in environmental circumstances to changes in the talk, without formally controlled conditions (see Leigland, 1989, pp. 33-34).

In later years, Willard and his students focused on what has come to be known as the "Reno method" of analyzing verbal behavior. The following passage describes this method:

In research of this type, the researcher transcribes interesting verbal material. The researcher then identifies, describes, and classifies aspects of the verbal material which have similar effects upon his or her behavior as a reader. In this way, classes of verbal behavior are identified. The researcher subsequently makes assessments regarding the variables which operate in the functional control of the verbal behavior by relating it to aspects of its historical and current environmental context. These assessments are seen to be directly under the control of the researcher's experiences in observing behavior, repeated exposure to the data provided in the transcript, and professional training of the scientific verbal community associated with the work of B. F. Skinner. (from Bennett, 1988, p. 2, as cited in Dougher, 1989, p.

Despite a considerable amount of investigatory effort by Willard, his students, and his colleagues, relatively little using the Reno method was actually published. Consequently, readers may not have a feeling for how the Reno method or its derivatives might be profitably implemented. One example illustrating how the Reno method was used is an exploratory project on language development by Stafford, Sundberg, and Braam (1988; see also Dougher, 1989; Leigland, 1989). In this investigation, an 11-year old severely mentally impaired individual who used sign language served as the subject. The researchers were concerned with exploring the conditions under which mands and tacts of varying complexity could be established. No formal experimental design was used, but rather the researchers allowed themselves to go in the directions indicated by the subject's behavior. For example, at one point the researchers attempted to establish five-component verbal responses in relation to stimulus settings (e.g., "foodblue [or green]-cup [or bowl]-on-table"). The subject had a choice of emitting the response as either a mand or a tact. The researchers modified their procedure to permit the collection of response latencies, hoping to learn more about the nature of the response. They found that mands were

made with shorter latency. They also conducted probe trials to test for transfer of stimulus control. These probe trials were conducted by exchanging the cup and the bowl. However, they again found it useful to modify their procedure somewhat by including forced-choice trials, in an attempt to facilitate the transfer of stimulus control. Happily for the subject and the researchers, these modifications resulted in the transfer of stimulus control to the new object and its accompanying array, as well as a reduction in the difference between the latencies of the responses.

The point is that in a very real sense, "the subject's behavior becomes an independent variable, and the experimenter's behavior a dependent variable" (Stafford et al., 1988, p. 71). Willard felt very strongly that work promoting such insights revealed the true value of the radical behaviorist approach to the study of verbal behavior, and ought to be encouraged. Willard and his students were somewhat apprehensive about the way their work was received by the rest of the behavioral community, but they persisted nevertheless.

Willard had hoped to eventually produce a book about the Reno method and its particular foundation in Skinner's approach (Knapp, 1989, p. 1). Willard strongly felt that the Reno method showed great promise, particularly when contrasted with alternative procedures of verbal analysis that had emerged from the psychoanalytic tradition. Knapp (1989) describes Willard's interests in this area in the following way:

In the proposed book, Willard wanted to bring together the doctoral work of several of his students: Brian Lahren's research on stimulus control of descriptive verbal behavior, Marguerite McCorkle on the stimulus control of women's talk about sex-role conflict, John Gibbin on a functional analysis of defensive verbal behavior in psychotherapy sessions, Darrell Downs on the stimulus control of pauses in on-going verbal behavior, Harold Cook on observable stimulus-response relations in descriptive and explanatory verbal behavior, Diane Spooner on the development of new discriminations in assessing stimulus control, Marcia Bennett on a conceptual analysis of radical behaviorist epistemology, and Michael Dougherty on an overview and analysis of [work antedating the

Reno method]. . . . Each of these works represented some aspect of what Willard had come to believe important in the understanding of talk. He thought that "when all the work is considered together as a whole, a much better picture of how each study plays its own part in developing our systematic position emerges. (p. 1)

As many readers may know, Willard was in the process of writing a chapter for an edited book at the time of this death. He presented an early version of the chapter at the convention of the Association for Behavior Analysis in Philadelphia in May, 1988. A revised version of the chapter now bears the title "On certain relations between contemporary philosophy and radical behaviorism" (Day & Moore, in press), and will appear in *Perspectives on Classical and Modern Behaviorism* (Todd & Morris, in press).

Willard's rough draft for the chapter includes some material that is not in the final version, but which is highly relevant to the discussion here. In this material, Willard cites the following passage from Brinker and Jaynes (1988), in which they accuse Skinner of an exceedingly unfortunate change in epistemological position between 1945, when he published his paper on operationism, and 1969, when he published a collection of theoretical papers:

The promise of this 1945 paper then, is that an analysis of reinforcement contingencies from the verbal community for verbal behavior will lead to truly operational definitions of terms and therefore to a complete behaviorism.

Twenty-four years later, Skinner seems to have rescinded this promise of operationism. In 1969, he insisted that an observer of contingencies, even the simple contingencies in an operant conditioning chamber, will not be able to describe the contingencies....

Thus [Skinner's revised conception of] operationism really requires the [experimental] demonstration of behavioral control....

Skinner [in the 1969 paper] seems to have moved away from his 1945 position and abandoned the possibility of understanding any behavior, verbal or otherwise, based on an analysis of natural contingencies. The later position is that understanding is equivalent to experimental control. [T]his position, rather than the 1945 one, . . . is very poorly suited to an analysis of verbal behavior. (Brinker & Jaynes, 1988, pp. 169-170)

Willard then closed this section of the

rough draft by noting that the line of thinking set forth by Brinker and Jaynes in the preceding passage was very close to the upshot of what he had been arguing in his own professional work throughout the preceding 20 years. Clearly, Willard was deeply committed to the interpretive study of verbal behavior as an ongoing natural phenomenon, and was making every effort to follow through on this commitment.

SUMMARY AND CONCLUSIONS

The present paper has suggested Willard Day's contributions to radical behaviorism and the analysis of verbal behavior may be grouped under three headings:

- (a) He emphasized the distinction between radical and methodological behaviorism;
- (b) he emphasized the interpretation, rather than the prediction and control, of behavior; and
- (c) he emphasized the analysis of verbal behavior as a natural, ongoing phenomenon.

Most people probably recognize Willard's name because of his numerous scholarly papers associated with the first of these contributions, the distinction between radical and methodological behaviorism. Accordingly, if most people were asked to comment on the relative significance of his contributions, they would likely say that his most significant contribution was his emphasis of the distinction between radical and methodological behaviorism, his second most significant contribution was his emphasis on interpretation, and his third most significant contribution was his emphasis on the analysis of verbal behavior. That is, most people would presumably say that the three contributions above are listed in descending order of significance.

If Willard was asked, and assuming he would have accepted these three contributions as valid characterizations of his work, the best guess is that he would have said they are in fact listed in ascending order of significance, rather than descending. That is, his third most significant contribution was his emphasis of the distinction between radical and methodological

behaviorism, his second most significant contribution was his emphasis on interpretation, and his most significant contribution was his emphasis on the analysis of verbal behavior. As suggested in the preceding section, Willard felt the analysis of verbal behavior was ultimately the area in which he felt radical behaviorism was going to have a lasting impact, and it was a natural extension of a concern with the interpretation of behavior.

As many know, two topics that have received much attention recently in the experimental analysis of behavior are (a) the study of rule-governed behavior and (b) the study of equivalence classes. The study of rule-governed behavior is concerned with how verbal behavior descriptive of contingencies is acquired, and with how it affects subsequent non-verbal behavior. The study of equivalence classes is concerned with how novel usages are acquired, as a sort of "emergent" property of verbal behavior. As readers can see, both of these topics concern the intimate relation between verbal and non-verbal behavior, which at first blush one would judge to be close to Willard's heart. Yet, Willard evidenced no particular interest in either of these two topics, except to speak critically of most of the work as "ordinary behaviorism," presumably because of the reliance on controlled laboratory procedures (Day, personal communication, May, 1988).

Willard's vision regarding the study of verbal behavior soared well into the interpretive domain. He regarded an emphasis on controlled laboratory research as part of a scientific orthodoxy that prevented the field from freeing itself from the continuing burden of methodological behaviorism. Willard was no doubt very impatient with others for spending too much time on the wrong topics, and for not sharing his vision about the interpretive study of verbal behavior. That vision remains a challenge for all who are interested in the analysis of verbal behavior.

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