

SKINNER'S REINFORCEMENT THEORY: A HEIDEGGERIAN ASSESSMENT OF ITS EMPIRICAL SUCCESS AND PHILOSOPHICAL FAILURE

Judith L. Scharff
University of New England

ABSTRACT: Affinities have been noted between radical behaviorism and phenomenology, hermeneutics, and poststructuralism, but this paper claims the most promising one has been neglected. Skinner's behaviorism is best seen as elucidating that time-sense characteristic of ordinary, habitual life which Heidegger calls a "temporalizing of everydayness." We usually live 'from moment to moment' as if we were just as predictable as the things around us, but Heidegger and Skinner agree there are moments when noticing this makes 'more of the same' seem unacceptable. Yet in Skinner's deterministic ontology such occasions are only envisioned via the anomaly of "self-management." With Heidegger, behaviorism can be the science of ordinary life, yet leave room for that real but ill-conceived 'volition' which Skinner rightly criticizes but wrongly rejects.

Thirty years ago, Kvale and Grenness (1967) eloquently demonstrated that radical behaviorism and phenomenology (especially Sartre's and Merleau-Ponty's) are philosophically similar insofar as both reject the need for positing an "inner person" to understand human activity. Kinships between radical behaviorism and Continental philosophy have also been noted more recently, but comparisons now are usually framed in relation to "hermeneutics" (e.g., Packer, 1985; Miller, 1994) and "poststructuralism" (Freeman & Locurto, 1994). What all these discussions tend to overlook, however, is the fact that Skinner's work (but not his own characterization of it) clearly illustrates the kind of time-sense which is characteristic of ordinary, routine life—a time-sense Heidegger calls the "temporalizing of everydayness" (1927, pp. 370-372, 404-420). This oversight represents a missed opportunity to sharpen our understanding of the phenomenological or Continental-philosophical implications of Skinner's actual science of human behavior and to play down his own misleading "behaviorist"

AUTHOR'S NOTE:

Please address all correspondence to: Judith L. Scharff, Department of Social and Behavioral Science, University of New England, University Campus, 11 Hills Beech Road, Biddeford, ME 04005-9599. Email: jscharff@mailbox.une.edu.

philosophical interpretation of it. The distinction between the science of human behavior and behaviorism is Skinner's own. "Behaviorism," he asserts, "is not the science of human behavior; it is the philosophy of that science" (1974, p. 3).

Faulconer and Williams (1985), for example, argue that the two major positions in psychology, what they call positivism and historicism, both fail in their studies of human behavior because both positions conflate intelligibility with certainty and share a "common conception of atemporality as the foundation of certainty" (p. 1179). Faulconer and Williams propose the establishment of a 'new' human science grounded in a Heideggerian (nonlinear) understanding of human temporalizing. In passing, they damn behaviorism with faint praise. On the one hand, they see in its analyses of reinforcement histories a legitimate opposition to positivism's tendency to ignore the importance of history in the study of human beings. They even call behaviorism "the most coherent historicist approach taken today because . . . it brings together positivism and historicism with their shared causal explanations" (p. 1181). On the other hand, they suggest that precisely because it shares this interest in causal explanation with positivism, and therefore also shares the atemporality presupposed in positivism's conception of causality, its study of human behavior is ultimately untenable.¹

This paper agrees with Faulconer and Williams that the fact that we are historical beings is important for the human sciences, and that these sciences should therefore be grounded in an understanding of human temporalizing. But it disagrees that, at least in psychology, this requires the founding of an entirely 'new' science. Heidegger notes that the temporalizing that actually structures everyday existence is quite different from the typical way in which we conceive of that temporalizing and "reckon" with time, and he argues that if we ignore this distinction, the latter almost invariably predominates at the expense of the former. (Heidegger, 1927, 404 ff.). This paper will show that precisely this tendency is present in the contrast between what Skinner *says* about his early research and what that research actually *discloses* about habitual human activity. Hence, it will be argued that with a Heideggerian reinterpretation of Skinner's reinforcement theory, the basis for a psychological science grounded in human temporalizing is already established.

¹ Smith (1986) has demonstrated that, contrary to widespread assumption, behaviorism and logical positivism developed simultaneously but without mutual influence. Further, he argues that Skinner is better understood as a pragmatist than a positivist. Hence, I will speak in what follows of Skinner's 'determinism' and not 'positivism.'

The argument will proceed in three parts. In part one, a critical analysis of Skinner's commitment to a deterministic ontology will reveal how, in the course of his research, this commitment becomes increasingly at odds with his own experimental findings. In parts two and three, a Heideggerian reassessment of these findings—conceived as they are by Skinner in terms of reinforcement histories and the predictability of human behavior—will try to recontextualize these very real and scientifically important matters by offering a philosophically more enlightened account of both habitual human activities and genuine change.

Skinner's Determinism

For the first 17 years of his career, Skinner's commitment to determinism led him to conceptualize the operant, unsatisfactorily, as a special kind of reflex (Scharff, 1982; Coleman, 1984). There can be no doubt that deterministic assumptions directed his theorizing from 1931-1953. Skinner (1931) argued for a nonphysiological definition of the reflex which would open up the empirical study of the functional relationship of stimulus and response. He stated that "the reflex is important in the description of behavior because it is by definition a statement of the *necessity* of this relationship [of stimulus and response]" (1931, p. 446, italics in original). In other words, at this time Skinner chose the reflex as his subject matter because of its apparently *causal* explanatory power. The reflex assures that behavior is necessitated.

In 1932, Skinner's own data on behavioral variability created trouble for his necessitarian causal analysis. He asked, "if it is in fact true that a rat's approach to a bit of food is a reflex, why is the response not always evoked by the appropriate stimulus?" (Skinner, 1932, p. 32). To account for this variability and still defend his deterministic scheme, Skinner added "secondary laws" of behavior (*viz.*, conditioning, emotion, and drive) to his theory. These were supposed to produce descriptions of *orderly* variation and vindicate the thesis that the functional relationships described are necessitated.

Sometime in 1931, Skinner began to have rats press levers in his experiments, and he began to wonder how to account for the rats' first lever press within his reflex theory. In 1935, he claimed that this first lever press is an "investigatory" reflex and hence, elicited; but this ad hoc explanation was short-lived. By 1937, in "Two Types of Conditioned Reflex: A Reply to Konorski and Miller," he had distinguished between operant and respondent reflexes and said that operant reflexes are not to be considered elicited. However, his necessitarianism is strained to the breaking point by this move. In the case of respondent reflexes, it is reflex strength (as determined by the secondary laws of behavior and measured by rate of

responding) that accounts for variability. However, for the operant 'reflex' there is no measure of reflex strength because the rate of responding, for the operant, is directly correlated with the rate of reinforcement. Left with a reflex whose strength cannot be measured, how is one to lawfully account for behavioral variability?

Did this suggest to Skinner that he should abandon the notion of the 'necessity' of behavior? To the contrary, he reaffirmed in *The Behavior of Organisms* (1938) that "with rigorous control of all relevant operations the kind of *necessity* that naturally characterizes simple reflexes is seen to apply to behavior in general" (p. 26, italics added). Even though his own research empirically challenged the very concept of "reflex reserve," Skinner introduced this concept into his theory in order, once again, to vindicate his deterministic commitments (Skinner & Heron, 1937; Scharff, 1982). Before he could bring himself to separate the operant from the reflex, Skinner had to be satisfied that he was in a position to deny the possibility of any 'volitional' causes of behavioral variability. What finally convinced him that he was in such a position was his understanding, which he explained in *Science and Human Behavior* (1953), of the differential behavioral effects of schedules of reinforcement.

In this work, Skinner claims that his research on schedules of reinforcement can explain behavior that is reproduced in spite of its not being reinforced at each occurrence (i.e., the schedules can explain behavior that on a molecular level appears to be variable). Behavior can be reinforced every time it occurs, or every tenth time it occurs, or every few minutes, etc. Indeed, "most reinforcements occur intermittently" (Skinner, 1974, p. 65). On the basis of the fact that differing schedules of reinforcement produce varying patterns of behavior, we are promised that operant conditioning can now provide a complete description of every kind of orderly variation in behavior. With ratio schedules, reinforcement is given after a set number of responses (e.g., piecework in a factory). With interval schedules, reinforcement is given after a set amount of time has passed (e.g., a weekly quiz). With variable-ratio schedules, reinforcement occurs after a given average number of responses, but exactly which response will produce the reinforcement cannot be predicted. Each schedule articulates a different behavioral pattern, but the virtue of all such schedules is that many forms of behavior which do not at first appear to be lawful when construed in terms of a simple molecular reinforcement theory are easily seen to be lawful when understood in terms of a molar theory of behavior. Thus, for instance, to those who would argue that there is obviously no particular reinforcement that follows every single gambling response, Skinner (1953)

explains that it is the variable-ratio schedule of reinforcement that ‘controls’ the behavior of the gambler.

However, although Skinner’s new reliance on schedules of reinforcement undoubtedly increased radical behaviorism’s apparent explanatory power, there turned out to be a hidden price for his determinism to pay. When schedules of reinforcement were formally introduced, Skinner (1953) claimed that the functional relationships being studied were still, in fact, cause-and-effect relationships, where ‘cause’ is the independent variable (i.e., the particular schedule of reinforcement) and ‘effect’ is the dependent variable (i.e., the resulting pattern of behavior). But *this* functional relationship, as opposed to the reflex described functionally in earlier works, cannot be assumed to be necessitated. It was, after all, ‘reflexivity’ which assured the *necessity* of behavior. Hence, by separating the operant from reflex, Skinner was forced to reconsider at least the label he used to describe his deterministic convictions; and he began to speak of causality as probabilistic rather than necessitarian. As we shall see, it is not at all obvious that merely by invoking the Law of Indeterminacy, Skinner (1953) succeeds in demonstrating that he can retain his ontological commitment to determinism in an unaltered form. What is obvious is that he thought so. For he argued that the reason his science can only provide probable accounts of behavior is not because the world is indeterminate but because of the limitations of human scientists. Since we may not be able to study Y while studying X, if Y has an effect, our account of X will be incomplete, that is, we will only be giving a probable account. This limitation, however, does not prove that the world is unlawful. It merely illustrates the inadequacies of human science to provide the complete account and thus requires no compromise of its determinist commitment. Indeed, in retrospect Skinner tells us that his very choice of the later word ‘controlled’ to replace ‘necessitated’ was inspired by its apparently deterministic meaning. He knew that ‘control’ was a troublesome term and that ‘affect’ or ‘influence’ might have been less so, but he “was a determinist and control meant control and no other word would do” (1979, p. 345).

To sum up, this brief historical review of Skinner’s early work shows how he accepted, in essence, a Cartesian view of the world, with its forced options of idealism and empiricism. Causation must lie *either* in the conscious self or subject, as some sort of volition (e.g., Descartes’ power of judgment or Kant’s practical reason); *or* it must be found in the world, as some sort of external and observable force. Siding with the empiricists by placing causality in the environment, Skinner committed himself to finding a satisfactory environmental cause (*viz.*, schedules of reinforcement) before he could separate operant behavior from reflex. Otherwise,

there would always remain the unacceptable possibility that variabilities *might* be due to some form of 'internal' cause. We shall see, however, that it is possible to understand human behavior without appeal to either external or internal causes, provided the ontological assumptions that set up this forced option are overcome.

Reinforcement Histories and 'Choices'

Phenomenology is perhaps the best known attempt to overcome this Cartesian dualism. Expressed in the standard terminology, it proceeds by considering not subjects or objects but their "intentional" relatedness (see e.g., Husserl, 1960, pp. 7-41; Husserl, 1970, pp. 219-241).

Within phenomenology, Husserl's assertion that consciousness is always consciousness of something has been a main theme. . . . The phenomenologist unequivocally considers behavior as meaningful, human action. *Intentional behavior* is directed towards the world; it acts upon the world and reveals the world to man. Searching is 'searching for something,' running is 'running away from something,' looking is 'looking towards something.' A behavioral object is intrinsically tied to the object of the act. The necessity of an 'inner man' to guide behavior falls away when behavior is conceived as man's meaningful relatedness to the world. Behavior is a relation between man and world; neither can be defined independent of the other. That is, world and man can be isolated and described independently, but they cannot be fully comprehended within this dualism. (Kvale & Grenness, 1966, p. 137, italics in the original)

Phenomenologists who actually familiarized themselves with Skinner's empirical works and with the radical behaviorists' reinforcement theory would, I believe, find themselves at least in one respect strangely attracted to it.² As Kvale and Grenness point out, one phenomenologically appealing feature of radical behaviorism is above all that Skinner concentrates on "behavior as the fundamental subject matter of psychology" (1966, p.128)—thus apparently moving away from any sort of introspectionism, rejecting any appeal to an inner person, and pushing one towards an understanding of the intentional character of human existence. But of course Skinner never directly concerned himself with introspectionism or doctrines of the inner person. He was defending a deterministic ontology. Hence, it is up to phenomenologists to show that he missed an opportunity to shed light on precisely that phenomenon of intentionality which is in fact suggested by his empirical work.

² As it stands, however, phenomenologists typically have at best a cursory understanding of behaviorism in general and tend, out of hand, to dismiss Skinner as a latter-day Watson. For a pioneering discussion of this point, cf., Day (1969, 1988).

Skinner, we know, had at least some awareness of the phenomenological position. He participated in a symposium on “Phenomenology and Behaviorism” at Rice University in 1963.³ However, there is little evidence that he took its scientific promise seriously. He apparently confuses ‘intentionality’ with ‘intentional acts’ and thus identifies it as just another mentalistic concept. When phenomenologists say behavior is intentional, however, they do not mean it has an ‘intention’ behind it, that is, some inner cause that is pushing us to do this or that. Intentionality is not a feature of the will, conceived as a cause of behavior. Rather, intentionality is a characteristic of behavior itself when behavior is properly understood as our relatedness to the world. So, for instance, Merleau-Ponty entitled one of his early books *La Structure du Comportement* [“behavior”] (1942) in an effort to rescue the idea of behavior from the common assumption that it is basically either a mere external thing (i.e., just an observable physical event) or the material manifestation of something entirely inner and mental (i.e., an unobservable consciousness or mind). He argues that behavior, phenomenologically considered, is our multiform way of being with-, toward-, and in-the-world; and while this phenomenon is often treated *as if* it were just a physical process or merely the outer manifestation of a mental process, it is not directly experienced as either of these; hence, the dichotomy physical process/mental process cannot be the basis of a proper ontology of what it is that measurement and observation agree to ‘see’ of behavior in their one very specialized way.

Skinner’s confusion on this point can be detected in his claim that “a person acts intentionally . . . not in the sense that he possesses an intention which he carries out, but in the sense that his behavior was strengthened by consequences” (1971, p. 108). What this shows is that, while the phenomenologists view the move *toward* the study of behavior as a positive move *away* from either the idealist or the empiricist pole of Cartesian dualism, Skinners’ empiricism prevents him from seeing his work in this light. He thinks of control or cause as something the environment, the whole material world out there, does ‘to’ the behavior, and he conceives of ‘behavior’ as another material thing over here. The implication seems to be that a good scientist looks exclusively toward contingencies working ‘in’ the

³ It is difficult to tell what picture of phenomenology Skinner might have obtained from this conference. None of the participants discussed either Husserl in general or intentionality specifically at any length, and no clear distinction was made between Husserlian phenomenology, the various species of Heideggerian, experiential, and hermeneutical phenomenologies, and other nonbehaviorist and “third force” orientations (e.g., J. J. Gibson and C. Rogers). The papers from the conference and transcriptions of their discussion are in Wann (1964).

individual's environment. In this way, one studies an individual's past history of reinforcement, including the specific schedules in which these reinforcements were delivered, with the confidence that enough knowledge of this kind makes an individual's behavior predictable.

Nevertheless, the fact remains that a phenomenologist might actually find Skinner's account of behavior and reinforcement acceptable—*if it were understood and expressed in non-deterministic language*, that is, if one were to drop Skinner's notion of 'contingencies' and say instead that an understanding of past intentional relationships can help explicate present intentional relationships. What prevents Skinner from making this move? The question cannot be answered until the issue of 'what is it like to be related to the world' is *itself* made a topic of discussion. To accomplish this it is necessary to explain briefly Heidegger's particular brand of phenomenology and where it goes beyond Husserl's original scheme.

In Husserl's phenomenology, intentionality is always conceived as relationships of consciousness and objects, and the purpose of phenomenology is to study the essential structures of these relationships. Such a study, Husserl holds, will result in the fundamental clarification of every sort of 'being' an entity can have. Heidegger, however, objects that phenomenology conceived in this way never asks about the being of the consciousness for whom all these entities 'are.' Most especially, it does not ask whether 'being conscious' is the most essential way to characterize human being (Heidegger, 1975, pp. 83-86, 229-230; Heidegger, 1979, pp. 148-157).⁴ Heidegger argues that 'consciousness intending objects' is only one (albeit very familiar) mode of our "being-in-the-world" (what he also calls our "existence" or way of being). In *Being and Time* (1927), he offers a study of existence "as such" and seeks to distinguish various modes of being-in-the-world, including that of consciousness-having-objects, in terms of their various ways of 'temporalizing' themselves.

It is this "temporalizing of temporality," says Heidegger, that most fundamentally characterizes our way of being. In everyday life, however, we do not see this. We are preoccupied with particular things and events in the world. We do not normally focus on our own existing as such—that is, on our own "being," on what it is like to be with and understand things and events in our ordinary, preoccupied ways. So, we do not recognize everyday existence as a *mode* of our existence; nor do we see the sort of "temporalizing" which makes it the mode that it is. We use time; we measure things in it; we notice its passage. But

⁴ Citations to Heidegger's works will be to the German original, because the German pagination can be found in the margins of the often very different and even incompatible English translations listed in the References.

we do not see that this using and measuring and noticing, when more deeply considered, manifests only one, very familiar way of being-in-the-world—a way of *presently* ‘timing’ so as to anticipate the *future* as being more of the same as *before*.

It is not necessary here to discuss the details of Heidegger’s intricate analysis of this everyday temporalizing and its mode of ‘reckoning’ with time. (See Heidegger, 1927, pp. 404-428.) For our purposes, it is enough to note that he insists upon considering this temporalizing ‘concretely,’ that is, as an actual, lived-through activity, not just in terms of its future-past-present ‘structure.’ So considered, this activity is seen to involve the past, not as ‘pushing along behind’ us, but as ‘already coming back at us from the future’ in the form of an ‘anticipation’ of how matters will be (Heidegger, 1962, pp. 20, 382-387; Heidegger, 1975, pp. 361 ff.). In other words, the future is not now experienced as a complete blank, but rather as the site where more of the same that ‘has been’ will also ‘be.’ Hence, in everyday life, the most telling feature of our routine and habitual activity is not its *present* grip on us but the fact that, in terms of such activity, we already ‘have’ a *future*. Our lives are for the most part ‘timed’ in this ‘concrete’ way.

Heidegger calls this concrete temporality of our lives its factual-historical character, or “historicity.” And it is his analysis of historicity that permits us to reconceptualize Skinner’s account of reinforced behavior in such a way that its empirical value can be separated from its unfortunate philosophical interpretation. As our days are normally and usually lived through, says Heidegger, one enacts and re-enacts the familiar ways of saying and doing things that we have ‘grown up into,’ accompanied by a way of taking ourselves that is consonant with these practices. One greets every new situation in terms of these practices (e.g., my native language ‘already’ provides me the needed words; as a city-dweller, I refrain from looking people in the eye on crowded streets; as a North American, I silently depend in distinctive ways upon ‘the laws’). The manner in which human beings now ‘are’ their past in their anticipation of their future, says Heidegger, may thus be seen to involve its always already occurring for them “out of their future.” All of this, however, remains hidden from us in our everyday preoccupations, and we normally avoid (and even evade) the task of ‘genuinely responding’ to what comes back at us from the future as our way of ‘having already been.’ We do not see the sort of future we already anticipate; we simply live it. And as a result, though we always remain capable of recognizing the unexpected, unusual, untried, or more promising possibilities it offers up to us, and though we might and always can thus change the course of our lives, more typically, we continue to just anticipate more of the same in *habitual and predictable* ways.

Keeping this Heideggerian analysis in mind, we can now see that what the actual research of reinforcement theorists demonstrates is the extent to which our everyday temporalizing of temporality in the usual and familiar ways results in what looks like and can be explicated as lawlike behavior. Indeed, if Heidegger is right, then precisely so long as and to the extent that we continue to deal with and measure things 'in' passing time and thus ignore the way this already commits us to letting more of the same possibilities merely repeat themselves, we will in fact continue to act as 'expected.' If this is correct, then there is no small irony in the fact that Skinner's own commitment to determinism directs his thinking in such a way that he 'must' interpret all behavior in accordance with the flattened out, linear everyday conception of time's moment-to-moment passage which manifests the mode of 'conscious' existence that Heidegger has shown to be ontologically inadequate. Skinner, positioning himself so to speak 'in the present,' claims that "the strength of behavior was determined by what had already happened rather than by what is going to happen in the future" (1979, p. 203). From this viewpoint, the only connection one can imagine present and future *having* to each other is some kind of (causal?) linkage. For the way we *experience* the transformation of a routine anticipated future by taking up unusual or out of the ordinary possibilities cannot 'appear' to someone looking on, 'consciously,' from the outside.

What Heidegger stresses, however, and what we understand from experience is that our continuous, familiar everyday routines arise not out of some unalterable flow of 'fact' but instead out of human habitual assumption. In other words, human temporalizing is really not, at bottom, the linear progression of moments by which we usually interpret (i.e., 'measure') our lives. Hence, what can happen is that this characteristically assumed interpretation of time might yet come to be recognized as *being* an interpretation. That is, we can come to understand that, for the most part, *we 'are' already acting as if the future must be like the past.* Precisely with this recognition, we can see that this way of being need not be so, and then we are open to seeing new possibilities within the familiar contours of our already-having-been. In short, 'behavioral' change can occur, and habitual ways of acting can be transformed.

Small wonder, then, that Skinner finds 'behavioral variation' disconcerting and tries so hard to extend deterministic explanations to cover it. For from his observational perspective, the only alternative to his manner of reasoning about this variation would have to involve crediting some unobservable faculty or occult power (e.g., the will) with the capacity to somehow drive a wedge between the

present and the future by putting the past behind us.⁵ Yet in this antipathy to special interior powers, Heideggerians are in complete agreement with Skinner. Voluntaristic, or libertarian theories of action get this whole affair wrong. If one imagines that the past is behind us pushing, then one has already defined away any possibility that there might be some power by which we could resist this pushing by ‘choosing’ a new and different future that is ‘not like what was.’ Such an imagined power of willing or free choice comes too late and would already be by definition, like every other behavior, carrying with it the very past that it is supposed to get us over. Doctrines of voluntarism and free will are not, however, the only alternative to Skinnerian determinism. From a Heideggerian standpoint, ‘being open to possibilities’ is really not a faculty or special power at all, but instead simply involves *recognition* of the concrete temporalizing of habitual, routine, everyday life, of the way in which this is usually hidden from us, and thus finally of the way in which the ‘taking up’ of possibilities involves addressing oneself to the past already coming back at us from the future.

Radical behaviorists might object at this point that what is really happening here is that Heidegger’s theory is being used to propose that recognition (i.e., understood as some form of expectation) is a partial ‘cause’ of behavior, whereas Skinner carefully avoids such proposals.⁶ But this objection misses the point, and the principle advantage, of a Heideggerian interpretation of human activity. Heidegger is not committed to the view that all significant phenomena are either external events or events that are “within the skin”; nor would he, like Skinner, be satisfied to “restore some kind of balance” between the two (1974, p. 18). Any such balance would remain conceptually within a Cartesian ontology that forces one to choose between thinking of every human phenomenon as either observably (and reliably) on the outside or introspectably (and more problematically) on the inside. What Heidegger urges is an ontological alternative to this conception of human activity, not just a supplement to Skinner’s way of explaining the usual regularity of that activity. The point is that by following Heidegger’s analysis of human temporalizing, behavioral change becomes philosophically intelligible and defensible, whereas with Skinner’s reinforcement theory and conception of environmental causality, it is not.

⁵ Skinner’s discussions generally emphasize that portion of the traditional philosophical debate concerned with freedom as ‘freedom from’ or ‘liberty’ rather than as free ‘will’ (1971, ch. 1).

⁶ Skinner, in discussing whether to choose a model of “prescientific man” (somewhat free to act) or “scientific man” (genetically and environmentally determined), says “neither view can be proved, but it is in the nature of scientific inquiry that the evidence should shift in favor of the second” (1971, p. 101).

The problem arises for Skinner's theory when we try to explain a radical change, or an unexpected transformation in previously 'regular' human behavior. A housewife becomes a graduate student. Someone in her mid-forties abruptly changes careers. Someone in his late fifties takes up the violin. For environmental determinists such as Skinner claims to be, it is a matter of definition that the environment 'must' be the cause of such behavioral changes. But how can histories of reinforcement 'control' our behavior in such a way that we somehow 'notice' that we are dissatisfied with our contingencies and then appear to 'choose' new ones? Skinner himself has occasionally spoken suggestively, if somewhat mysteriously, of techniques of "self-management" (1974; Skinner & Vaughn, 1983). We are told that this phenomenon "raises the same question as self-knowledge: Who are the managing and managed selves? And again, the answer is that they are repertoires of behavior" (1974, p. 194). But what, in principle, can 'self-management' be for a radical behaviorist? The matter to be accounted for is that, somehow, an understanding of how we are controlled by the environment opens us up and allows for the possibility of our 'managing ourselves' more skillfully. But how can reinforcement theory make room for such a circumstance in cases where the reinforcer and the reinforced are the same person? How could this occur without undercutting the very sense of reinforcement as, by definition, an *observed* phenomenon? The problem in all this for the radical behaviorist is that something like an 'understanding of how we are controlled by the environment' inevitably smacks of "intentional" (i.e., subjective) explanation, and the presence in such accounts of appeals to "immediate, fictional" (i.e., mental) causes, assures that they must fail to be explanations at all (see, e.g., Baum & Heath, 1992). But as we have seen, Heidegger's characterization of being-in-the-world, and of our capacity to *understand* this condition, refuses to accept the forced option between looking at this condition from the outside and assuming that the only alternative is to guess what is inside.

Let us ask, then, from a Heideggerian viewpoint, what kind of behavioral change is actually possible when we come to understand how we are controlled by the environment. That is, how far does what is mostly misconceived as 'volition' extend? Having once seen that we are usually acting as if the future must necessarily be a mere repetition of the past, are we then, as Sartre, the early existentialists, and many humanistic psychologists would have it, free to become almost anything at all, by just choosing it? (See, e.g., Faulconer & Williams, 1985, for discussion of freedom and humanistic psychology, pp. 1181-1182.) For Heidegger as for Skinner, the answer has to be No. For both of them, behavioral change must be understood 'historically.' For Heidegger, however, this does not

mean the change must be understood deterministically. Drawing on the notion of repetition which Heidegger took over from Kierkegaard, it will be possible to conclude that, at least to a limited extent, Skinner's empirical work (Skinner, 1953) can actually help to clarify the nature of such behavioral change, even if Skinner's philosophical evaluation of that work obscures this.

Reinforcement Histories and Heidegger

The key to understanding Heidegger's position here is to recognize that the appropriate description of ordinary/expected vs. out of the ordinary/unexpected human behavior is not by means of the opposed categories of determined vs. free actions, but rather by means of the more closely related ideas of merely repetitive actions (involving an 'awaiting') and 'authentically' repetitive actions (involving an explicit and transformative 'taking up' of what is 'handed down' to us) (Heidegger, 1927, pp. 339, 385). As we saw above, Heidegger claims that so long as we are busied with daily routines, we conceive and deal with things in their 'time,' but do not notice that this timing of them is precisely our own merely repetitive mode of existing as 'awaiting' them. By recognizing this particular temporalizing inherent in everydayness, however, new possibilities or ways of acting appear to open up in that very past which is already coming back towards us—possibilities that can then be 'taken up' and explicitly 'handed down' in a genuine repetition. Genuine repetition is thus to be understood as creative, self-conscious repetition.⁷

What is especially significant in the present context is that the possibilities that arise for genuine repetition, just as much as the more familiar possibilities involved in habitual and routine repetition arise, according to Heidegger, *out of one's history*, not out of something like the plans of a rational will. What is usually called 'volition,' then, is really this coming-to-recognize, not just *that* one does not have to mindlessly repeat the past in the present, but also *what* might possibly be worth doing instead. On this issue, radical behaviorism is half right. Like Heidegger, Skinner insists that the way to understand present human activity is in terms of its history, not in terms of some present or simultaneous cause (Baum & Heath, 1992, pp. 1314-1315). Unlike Heidegger, however, the environmental

⁷ It should be noted that, while my proposal is like Heidegger's 'genuine repetition,' it is being utilized here 'ontically,' not 'ontologically'—that is, to understand personal growth or personal change in the lives of individual human beings, not to raise Heidegger's own general questions of what it is for anything to 'be,' and what it is to ask this question at the time of the 'ending' of the traditional metaphysics of presence [see, e.g., the essays in Guignon (1993), or more ambitiously, Pöggeler (1987, 1997)].

determinism of Skinner's theory allows it to work smoothly for habitual and routine action, but poorly for the creative and out of the ordinary. At this point, the specter of volition rightly suppressed by Skinner's theory re-emerges in the recognition that some sort of 'self-management' must be a possibility.

In the radical behaviorist's theory of the history of reinforcement, then, genuine repetition that occurs when one alters one's contingencies can only make its appearance as an inexplicable anomaly. Skinner was too good a scientist to have simply overlooked or ignored those instances in which we actually do 'change' our behavior and contingencies. But given his environmental determinism, such instances remain in principle a theoretical embarrassment. An understanding of histories of reinforcement can help to explicate (make understandable) new possibilities (change in action), but it cannot predict *which* possibilities will be taken up. There are two reasons for this. First, the changes themselves will be creative. That is, we do not merely take up some activity from our past that was rewarding and repeat it unaltered in the present. Rather, we take some past activity that was rewarding and incorporate it in some altered fashion into our present so that in the future we will receive more of its rewards. Second, *what* is rewarding is mostly, and in complex ways, personal. I say 'personal' here, rather than subjective, for the purpose of stressing again the fact that Heidegger does not accept the assumption that if one is not observing external events, one is consulting what is allegedly 'inside' us. For him, as for phenomenologists generally, even those who pride themselves on adhering to a third-person epistemology already *know what to observe* because they silently draw on the experience of being related-to and acting-with their human and natural surroundings. That is why, to understand the *particular* changes in life that some one *individual* makes, one must have a very rich history of his or her reinforcements—including both what is 'personally' rewarding and what is currently and just as personally unsatisfactory about the habitual and routine. As is often the case, this rich history may only reveal itself in post hoc observations when choices made or possibilities followed out do not, according to the usual story of that history, 'make sense.'⁸

Faced with such phenomenologically elusive and theoretically embarrassing events, radical behaviorists often respond that these apparently creative and unpredictable choices are not really choices at all, but are easily understandable in terms of a perfectly straightforward implication of reinforcement theory, namely,

⁸ Skinner, of course, might want to invoke the Law of Indeterminacy here.

that the explanation of such changes lies in discovering the contingent relationship with the ‘greatest strength’ in terms of the greatest amount of past reinforcements. For, Heidegger, however, the matter is not so simple. To fully understand such changes one must consider much more closely and in detail just how complex and rich is that past which is coming back toward the person in the form of new possibilities from the future.⁹ Granted that, on the one hand, this means that even for the most radical transformations in behavior, we may always search through personal histories for post hoc behavioral analysis to help us *understand* the change. The problem, on the other hand, is that *prediction*—which would require that all ‘contingencies’ be ‘observable’ in advance by the researcher—is impossible.

Finally, then, taking Skinner’s behaviorist science more seriously than his philosophy of that science appears to lead to the following, somewhat surprising, two-part conclusion. Because behaviorist theory is unique in its stress on the importance of personal histories for human action, it offers a way, *both* of establishing the sort of ‘new’ science described by Faulconer and Williams (1985) *and* of achieving a clear understanding of the very phenomenon of volition Skinner tries to suppress. Thus on the one hand, the reason he can speak of habitual human behavior in what Faulconer and Williams characterize as an “atemporal” (or linear-temporal) way is not because he is forcing upon this behavior an inappropriately deterministic model of explanation. Rather it is because, as Heidegger shows, in everyday life we temporalize temporality in such a way that we *actually do tend to silently understand our lives* as being just as determined and predictable ‘from moment to moment’ as the world of things with which we are involved. On the other hand, when Skinner tries to use the same conceptual machinery of reinforcement schedules to illuminate those occasions when ‘more of the same’ becomes unacceptable, the best he can offer is the anomalous idea of “self-management.” Yet from a Heideggerian perspective, what is philosophically important about this idea is not that it gets unusual and creative possibilities wrong but that it can help us *explicitly recognize how* for the most part we really ‘are’ determined and predictable. For in this very recognition, habitual

⁹ Certainly behaviorists need not in principle object to a ‘complete’ or ‘fuller’ history of reinforcement. But it is unlikely they would be as sensitive as Heideggerians to the necessity of it. Do behaviorists typically question themselves when they already have an explanation that takes rather fewer contingencies into account but nevertheless seems satisfactory in terms of reinforcement theory? Do they look for the complex when they already have a simpler explanation? While looking for a more complete history of reinforcement does not fall outside of the behaviorist scheme, their deterministic ontology does, I think, tend to lead them towards accepting a reduced explanation.

everydayness can lose its stranglehold on our understanding of how life goes and instead begin to appear as only *a way* rather than *the way* of repeating the past we always already 'are.' That there actually are occasions when one's personal history 'opens up' this way, both Skinner and Heidegger agree. Only Heidegger, however, makes it philosophically intelligible. Perhaps we might say that in reaching this conclusion, we have genuinely and creatively 'repeated' Skinner's work in order for it to open up 'new possibilities' . . . of itself.

REFERENCES

- Baum, W. M., and Heath, J. L. (1992). Behavioral explanations and intentional explanations in psychology. *American Psychologist*, *47*, 1312-1317.
- Coleman, S. R. (1984). Background and change in B.F. Skinner's metatheory from 1930 to 1938. *Journal of Mind and Behavior*, *5*, 471-500.
- Day, W. F. (1969). Radical behaviorism in reconciliation with phenomenology. *Journal of the Experimental Analysis of Behavior*, *12*, 315-328.
- Day, W. F. (1988). Hermeneutics and behaviorism. *American Psychologist*, *43*, 129.
- Faulconer, J. E., & Williams, R. N. (1985). Temporality in human action: An alternative to positivism and historicism. *American Psychologist*, *40*, 1179-1188.
- Freeman, M., and Locurto, C. (1994). In Skinner's wake: Behaviorism, poststructuralism, and the ironies of intellectual discourse. *New Ideas in Psychology*, *12*, 39-56.
- Guignon, C. (Ed.). (1993). *The Cambridge companion to Heidegger*. Cambridge: Cambridge University Press.
- Heidegger, M. (1927). *Sein und Zeit*. Tübingen: Max Niemeyer [16 subsequent editions and Heidegger, M. (1977). *Gesamtausgabe* (Vol. 2). English, *Being and time* (J. Stambaugh, Trans., from 10th German ed. of 1963, with marginalia). Albany: State University of New York Press, 1996; also J. Macquarrie & E. Robinson, Trans. New York: Harper and Row, 1962].
- Heidegger, M. (1975). *Die grundprobleme der phänomenologie*. *Gesamtausgabe* (Vol. 24). Frankfurt: Vittorio Klostermann [*The basic problems of phenomenology* (Rev. ed., A. Hofstadter, Trans.). Bloomington: Indiana University Press, 1988].
- Heidegger, M. (1979). *Prolegomena zur geschichte des zeitbegriffs*. *Gesamtausgabe* (Vol. 20). Frankfurt: Vittorio Klostermann [*History of the concept of time: Prolegomena* (T. Kisiel, Trans.). Bloomington: Indiana University Press, 1985].
- Husserl, E. (1960). *Cartesian meditations: An introduction to phenomenology* (D. Cairns, Trans.). The Hague: Martinus Nijhoff. (Original German published 1929)
- Husserl, E. (1970). *The crisis of the European sciences and transcendental phenomenology* (D. Carr, Trans.). Evanston, IL: Northwestern University Press. (Original German published posthumously 1954)
- Kvale, S., & Grenness, C. E. (1967). Skinner and Sartre: Towards a radical phenomenology of behavior? *Review of Existential Psychology and Psychiatry*, *7*, 128-150. (Reprinted, 1986-87, *Review of Existential Psychology and Psychiatry*, *20*, 135-155.)
- Miller, H. L., Jr. (1994). Taking hermeneutics to science: Prospects and tactics suggested by the work of B.F. Skinner. *The Behavior Analyst*, *17*, 35-42.

SKINNER ON REINFORCEMENT: HEIDEGGERIAN ASSESSMENT

- Merleau-Ponty, M. (1942). *La Structure du comportement*. Paris: Presses universitaires de France [*The structure of behavior* (Alden L. Fisher, Trans.). Boston: Beacon Press, 1963].
- Packer, M. J. (1985). Hermeneutic inquiry in the study of human conduct. *American Psychologist*, *40*, 1081-1093.
- Pöggeler, O. (1987). *Martin Heidegger's path of thinking* (Rev. ed., D. Magurshak & S. Barber, Trans.). Atlantic Highlands, NJ: Humanities Press. (Original German published 1963)
- Pöggeler, O. (1997). *The paths of Heidegger's life and thought* (J. Bailiff, Trans.). Atlantic Highlands, NJ: Humanities Press. (Original German published 1992)
- Scharff, J. L. (1982). Skinner's concept of the operant: From necessitarian to probabilistic causality. *Behaviorism*, *10*, 45-54.
- Skinner, B. F. (1931). The concept of the reflex in the description of behavior. *Journal of General Psychology*, *5*, 427-458.
- Skinner, B. F. (1932). Drives and drive strength. *Journal of General Psychology*, *6*, 23-36.
- Skinner, B. F. (1935). Two types of conditioned reflex and a pseudo-type. *Journal of General Psychology*, *12*, 66-77.
- Skinner, B. F. (1937). Two types of conditioned reflex: A reply to Konorski and Miller. *Journal of General Psychology*, *16*, 272-279.
- Skinner, B. F. (1938). *The behavior of organisms*. New York: Appleton-Century-Crofts.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Macmillan.
- Skinner, B. F. (1971). *Beyond freedom and dignity*. New York: Alfred A. Knopf.
- Skinner, B. F. (1974). *About behaviorism*. New York: Alfred A. Knopf.
- Skinner, B. F. (1979). *The shaping of a behaviorist*. New York: Alfred A. Knopf.
- Skinner, B. F., & Heron, W. T. (1937). Effects of caffeine and benzedrine upon conditioning and extinction. *Psychological Record*, *1*, 340-346.
- Skinner, B. F., & Vaughn, M. E. (1983). *Enjoy old age: A program of self-management*. New York: W.W. Norton.
- Smith, L. D. (1986). *Behaviorism and logical positivism: A reassessment of the alliance*. Stanford, CA: Stanford University Press.
- Wann, T. W. (Ed.). (1964). *Behaviorism and phenomenology: Contrasting bases for modern psychology*. Chicago: University of Chicago Press.