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Source: *Behaviorism*, Vol. 3, No. 2 (Fall, 1975), pp. 140-151

Published by: Cambridge Center for Behavioral Studies (CCBS)

Stable URL: <http://www.jstor.org/stable/27758839>

Accessed: 10-12-2017 02:37 UTC

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WILLIAM JAMES AND B. F. SKINNER: BEHAVIORISM, REINFORCEMENT, AND INTEREST¹

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Behaviorism, reinforcement, and operant conditioning seem to be almost interchangeable terms to a great many people; this is not surprising in view of the current popularity of a leading behaviorist, B.F. Skinner. Skinner's contribution is often seen as the application of the principle of reinforcement (and a few corollaries) to the problems of psychology; at the same time, he is recognized as the leading spokesman for behaviorism. Behaviorism is, of course, simply the position that the phenomena of psychology may be exhaustively treated as *behavioral* events and that behavior is significant in its own right, rather than simply as a manifestation of some more fundamental processes. This view certainly does not require Skinner's concept of reinforcement (nor anyone else's); for example, John B. Watson, the early proponent of the behaviorist position, made no explicit use of reinforcement. This will come as no surprise to most behaviorists, but it may be surprising to many outside the field.

It is important that behaviorism not be identified with Skinnerianism, because the latter very specific formulation is fraught with many problems which are irrelevant to behaviorism. What is wrong with Skinner's program is not an error in logic in *The Behavior of Organisms* (1938) or a failure by Skinner to answer some cognitive or humanist critic. The purpose of this paper is to point out what I believe to be serious limitations of Skinner's approach; to this end, I will point out some similarities and differences between his work and that of the nineteenth-century philosopher and psychologist, William James. James dealt with the same problems and his treatment of them was similar to Skinner's in some important ways. However, Skinner's heavy reliance on a single concept, the concept of reinforcement, as an all-purpose explanatory device, is a serious problem which finds no parallel in James' writings. Interestingly, James did discuss his reasons for rejecting a similar approach.

I will first discuss what the two men see as the basic dimensions of psychological phenomena: what is the subject matter? The second section summarizes Skinner's earlier

¹Preparation of this manuscript was supported by NIMH Grant MH-24997. Reprints may be obtained from John C. Malone, Jr., Psychology Department, The University of Tennessee, Knoxville, Tennessee, 37916.

and then his more recent (and popular) contributions. Next, I will comment on the descriptions of phenomena provided by James and by Skinner. Finally, I will argue that Skinner was premature in his extreme emphasis on the law of effect; behaviorism in general should not feel compelled to answer for this error.

RADICAL EMPIRICISM AND BEHAVIORISM: EXPERIENCE OR BEHAVIOR?

Skinner's arguments for behaviorism appear throughout his writings and are probably most clearly put in "Behaviorism at Fifty" (1964). Essentially, he urges the reader to assume, with him, that psychological phenomena are *behaviors* (e.g., thinking, seeing, speaking, imagining) which are no different in *kind* from behaviors like walking or bar pressing. Further, these behaviors are *not* merely manifestations of more fundamental processes, whether biological, psychic, or other. His arguments are clear and I will not pursue them, but they are apparently not self-evident. I am certain, for example, that many biological psychologists will never understand the assertion that the discovery of neural substrates for behavior constitutes a "relatively minor problem" (Skinner, 1964). This is, of course, their problem and not Skinner's.

James, as is well known, began with consciousness, rather than with behavior; "Psychology is the study of mental life" (1890, Ch. 1). The basic subject matter, that which is to be explained, is experience (or mental experience). At first glance this seems directly at odds with *any* behaviorist position, and in some ways it is. But once we consider what James counted as experience we find striking similarities to Skinner's behaviorist treatment.

Fundamental to Skinner's position is the familiar argument against the conventional dualism of mind and body (or mind and behavior). Public and private events have the same dimensions (since both are behaviors); for example, "thinking" *is* a behavior to be analyzed, but this does not mean that "thoughts" will be found in the brain (or elsewhere). The reason that we persist in seeking neural or psychic mechanisms which correspond to thoughts and the reason that we speak of the "encoding, storage, and retrieval" of ideas (or sensations, etc.) owes to an ancient misconception variously called the "copy" or "representative" theory (Skinner, 1964) or the "illusion of the double world" (Kvale and Grenness, 1967). This is simply the dualist notion of subject-object; according to this view, we apprehend the world by creating copies of it and these copies are *somehow* responsible for our experience. Skinner argues instead that *action*, rather than reproduction, constitutes experience and that the search for copies is misguided. As he put it in 1964:

Suppose someone were to coat the occipital lobes with a special emulsion which, when developed, yielded a reasonable copy of a current visual stimulus. In many quarters this would be regarded as a triumph in the physiology of vision yet nothing could be more disastrous, for we should have to start all over again and ask how the organism sees a picture in its occipital cortex and we should have much less of the brain available in which to seek an answer (Skinner, 1964).

These arguments against the existence and causal status of mental copies do not, of course, mean that we do not experience what we call "mental states". We do indeed, and

verbal reports based on introspection are completely acceptable as data, so long as we do not make the error of treating such reports as indications of mental entities which then "cause" behavior.

Anyone who wishes to understand behaviorism must understand the significance of Skinner's argument against the mentalist copy theory, for it is central to the behaviorist position. Skinner is, however, not the first to make it, nor in his case against mentalism necessarily the best, as is clear in James' "Essays in Radical Empiricism" (1912).

Though he begins with subjective experience, rather than with behavior, James' empiricism parallels Skinner's behaviorism; James is clear in renouncing the notion that mental entities differ in kind from physical things, just as Skinner argues that mental activity is the same in kind as physical activity. For James, experience may be either a thought or a thing; common experience seems dualistic only because we assume that experience talked of twice (i.e., ideas and objects) must refer to two things. We do not *feel* as though we experience the world as *mental* nor does experience suggest that we produce copies of objects and later recall these copies as ideas. The working out of the details of James' position is beyond the scope of this paper; suffice it to say that in his treatment of the nature of experience he reaches at least as radical a position as does Skinner and, like Skinner, the stress is on *activity*. [I should point out that Skinner never clearly abandons dualism entirely, though there is no reason why he should not. For example, in "The Phylogeny and Ontogeny of Behavior" (1966a), he repeatedly refers to the environment as something "real" and prior to experience and in 1964 he wrote that "the world we live in is the world of physics." His inconsistency here has been noted by others (e.g., Kvale and Grenness, 1967)].

Thus, Skinner and James agree that the division of reality into mental and physical is not a forced conclusion and may act only to hamper our understanding of behavior and/or experience. It may not be astonishing to find similarities at this level; one's metaphysics may be a different matter from one's program for psychology. In the next section I will summarize (briefly) Skinner's programmatic contribution and compare his method for dealing with specific phenomena with that of James.

SKINNER'S EARLY CONTRIBUTIONS

In the 'thirties' Skinner (1931, 1935) elegantly demonstrated that behavior traditionally viewed as spontaneous or "voluntary" could be shown to be lawful; this was a formidable task at the time. At that time, order meant "reflex" and the reflex arc served as the conceptual unit for analyses of behavior by Watson, Hull, and others. But reflex behavior demanded identifiable stimuli and these were often difficult to find in the environment (or in the organism). Skinner avoided this problem, as is well known, by appealing to the consequences of behavior for order, rather than to antecedent stimuli.

This involved a masterful "redefinition" of the reflex and the establishment of the operant as the "unit" of voluntary behavior. In a series of arguments, Skinner seemed to show that the operant was itself reflex in nature and was therefore as lawful as any other reflex.

An operant is a class of behaviors mutually strengthenable by a class of consequences, or reinforcers. The level of specificity in delimiting that class of behaviors is

uniquely determined by the smoothness of the data resulting. So defined, Thorndike's "Law of Effect" was transformed to a rule allowing the identification of operants and consequently the demonstration of order in behavior. The subsequent publication of *The Behavior of Organisms* (1938) showed the promise of this formulation and *Schedules of Reinforcement* in 1957 (with Ferster) gave a glimpse of the wide range of orderly behavioral changes resulting from the manipulation of reinforcement contingencies.

Skinner's original goal (i.e., 1935) was to show that all behavior was orderly, in the sense that the discovery of a reflex is a demonstration of order. Thus, the original arguments for the operant were arguments for the reflex nature of behavior controlled by its consequences. Since that time, the popularity of the operant has established it as a "unit" in its own right; the prestige of the reflex is no longer required (Skinner, 1966b).

The operant-reinforcement approach is reassuringly simple, though its implications are not. The task is simply to discover reflexes, conditioned reflexes, and operants. Insofar as we can do this (i.e., show that a given behavior falls into one or a combination of these categories) we *explain* these behaviors; i.e., we demonstrate order. Skinner and his followers have been able to argue quite convincingly that all behavior, however complex, may in time be treated in this manner.

Now, Skinner's original analysis is hard to fault and the research based on this strategy has seemed very successful. In my view, however, his main impact has been elsewhere; it is the effect that he has had on readers who have no inkling of his substantive early writings. They know his more recent and more popular works, for example, *Science and Human Behavior* (1953) and *Beyond Freedom and Dignity* (1971). The earlier work and a good deal of his recent writing is extremely substantive (e.g., 1966a), the sort of case which other theorists such as Guthrie (e.g., 1952) or Spence (e.g., 1943) had to take seriously; it was no mean task to replace the S-R habit with the operant. But the popular works, which are concerned more with application, differ in substance, if not in persuasiveness; the monumental task of analyzing complex behavior appears not so difficult as it seemed.

In his popular works, Skinner *has* argued forcefully for the general behaviorist position and against spirits, minds, and other metaphysical entities. Virtually identical arguments were made by earlier writers (e.g., Sechenov, 1866; Watson, 1930; Hull, 1943), but Skinner is an especially gifted writer and his arguments are therefore more convincing. All of this is to the good; it is a mammoth undertaking to convince the man in the street that his behavior is potentially understandable and Skinner does it well. Critics are usually those who disagree with this thesis, who recoil at the possibility of any sort of "deterministic" treatment of human behavior. These critics do not usually know exactly *what* it is that they are attacking; as a result, they argue against a strange amalgam of Pavlov, Watson, Hull, Skinner and La Mettrie, as well as against introductory textbook summaries. Typical examples of this sort of unenlightened criticism are Chomsky (1959) and Koch (1964). Criticism is certainly due, but this sort is misplaced.

In addition to his arguments for behaviorism, Skinner argues with equal persuasiveness for his *particular* explanatory mechanisms. The reader is left with the disposition to believe that behavior may indeed be objectively treated and that Skinner's particular formulation is not only convincing but is also the *only* objective formulation. This is apparent in (e.g.) *Science and Human Behavior* (1953), which gives the impression that

Skinner is not only *essentially* correct but that his explanatory terms are uniquely capable of accounting for behavior in general. After all, doesn't he account for thinking, language, perception, the self, social behavior, ethics, and all other possible areas? A closer examination shows that this is, of course, not the case; there is no real account. What we find is that Skinner's application of conditioning principles to complex behaviors often amounts to mere translation of terms; a simplified description of a behavior (e.g., problem-solving) is cast into operant terms. Such a translation may, one could argue, help to clarify what seem otherwise to be very nebulous problems, but translation *alone* adds little to our understanding. Some of his followers who specialize in translation of this sort will probably not see this as a failing, but I believe that it is, particularly when the translation involves the "analysis" of a phenomenon which is not clearly described in the first place.

An adequate description of a phenomenon must be an essential prerequisite to an understanding of it. One of William James' main contributions was his painstaking care in description and his caution in applying general principles. A comparison of James' and Skinner's descriptions of phenomena, their casting of the problems, may clarify the criticisms I made above.

JAMES AND SKINNER: TREATMENT OF PHENOMENA

James' descriptions of psychological processes must be his chief contribution to the discipline. Anyone who has not read his (1890) chapters on habit, the stream of thought, the consciousness of self, association, imagination, perception, reasoning, and will has missed the clearest prose and most insightful self-description ever written. For example, he discusses (1890) a simple fact of our experience, which is what we treat as the "real" form of objects:

. . . the real form of the circle is deemed to be the sensation it gives when the line of vision is perpendicular to its centre — all its other sensations are signs of this sensation. The real sound of a canon is the sensation it makes when the ear is close by. The real color of the brick is the sensation it gives when the eye looks squarely at it from a near point, out of the sunshine and yet not in the gloom. . . . The mind chooses to suit itself, and decides what particular sensation shall be held more real and valid than the rest (James, 1890).

This does not, of course, constitute an explanation of anything; it was intended as a description of a phenomenon already familiar to us. Similarly, James describes the "stream of thought" (1890, Ch. IX):

The truth is that large tracts of human speech are nothing but *signs of direction* in thought, of which direction we nevertheless have an acutely discriminative sense, though no definite sensorial image plays any part in it whatsoever . . . And has the reader never asked himself what kind of a mental fact is his *intention of saying a thing before* he has said it? It is an entirely definite intention, distinct from all other intentions . . . and yet how much of it consists of definite sensorial images, either of words or of things? Hardly anything! Linger, and the words and things come into the mind; the anticipatory intention, the divination, is there no more. But as the words that replace it arrive, it welcomes them successively and

calls them right if they agree with it and wrong if they do not . . . and yet what can we say about it without using words that belong to the later mental facts that replace it?

Perhaps best known is his short illustration of the act of volition or “will” (1890, Ch. XXVI), used to support his doctrine of *ideo-motor* action, a notion which is still very current (Greenwald, 1970; Kimble and Perlmutter, 1970):

We know what it is to get out of bed on a freezing morning in a room without a fire, and how the very vital principle within us protests against the ordeal . . . we think how late we shall be, how the duties of the day will suffer; we say, ‘*I must get up, this is ignominious, etc.*’; but still the warm couch seems too delicious, the cold outside too cruel, and resolution faints away again and again just as it seemed on the verge of bursting the resistance and passing over into the decisive act. Now how do we *ever* get up under such circumstances? If I may generalize from my own experience, we more often than not get up without any decision or struggle at all. We suddenly find that we *have* got up. A fortunate lapse of consciousness occurs; we forget both the warm and the cold; we fall into some reverie connected with the day’s life, in the course of which the idea flashes across us. ‘Hollo! I must lie here no longer’—an idea which at that lucky instant awakens no contradictory or paralyzing suggestions, and consequently produces immediately its appropriate motor effects.

It was “meditation on this case” in his own experience which led James to his well-known model for volition, to which I refer the reader if he is not already familiar with it. His language in this and the other examples is probably objectionable to many of his modern readers on grounds that it is “*mentalist*” or what have you, but such objections are naive. The behaviorist’s criticism of mental terms is not an assertion that mental events do not occur and cannot be described or investigated; for example, Skinner has spent a good deal of time discussing mental events (or behaviors). The problem with mental terms is that they are often taken to be *entities* of some (metaphysical) sort which underlie behavior; i.e., they are treated as causal entities. This is, of course, what behaviorism cannot accept. In James’ case mental terms are never treated as entities of this sort, but as activities themselves and the sort of description James provides may run counter to some extremely narrow interpretations of behaviorism, but it is not in any way in conflict with Skinner’s behaviorism. Anyone who still objects is advised to read James’ “*Essays in Radical Empiricism*,” which should provide sufficient evidence that James’ mentalism is not of the objectionable kind.

Still, mental terms are mental terms, so why not avoid confusion and do away with them anyway? There is really no advantage in this; James’ descriptions are reports of *phenomenal* experience and any analysis of experience requires such description prior to analysis. His writing could be translated to objective language, but the purpose would no longer be served. Learning that my getting out of bed is a function of differential stimulus control based on past consequences correlated with rising or staying in bed misses the point. It is a less accurate description of the phenomenon and it is less accurate because it attempts to explain in *advance* of description. As I said above, phenomena are not necessarily self-evident (as the lack of progress in most areas of psychology testifies) and accurate description is essential.

James' psychology and philosophy is replete with similar cases of description; when it came to *explanation*, he was a functionalist. Following the extreme Darwinism of the day, he sought the *function* of the processes he described. His chapters on "habit" and "will" exemplify this point of view and his attempt to show the adaptive value of consciousness is best seen in "On the Function of Consciousness" (1890, Ch. V).

When we examine Skinner's writings, we find what at first seems a great similarity with James. In *Science and Human Behavior* (1953), the chapter headings suggest that Skinner is attempting to describe a wide range of psychological phenomena, as James did in 1890. The headings read "Self Control," "Thinking," "Private Events," "The Self," "Social Behavior," and so on. But what we find under those headings is only the most cursory, common-sense descriptions, which are then translated into the conditioning language which is often not even unique to Skinner but could as easily derive from Pavlov, Guthrie, or Hull.

Because of the absence of adequate description of behaviors, Skinner's analysis shows only that most of human behavior can in principle be cast into the language of an operant analysis. It is true that this is probably Skinner's intent anyway; he is trying to make a case for the *possibility* of an operant treatment of all behavior. But his analysis is usually trivial to the point of banality. Does it increase our understanding to suggest that "deciding" amounts to the manipulation of stimuli until a response can be emitted which results in an escape from indecision? It is, of course, *possible* to look at deciding, problem-solving, and similar activities in this way, but is such a translation informative? Do we better understand the phenomenon of imprinting when we describe it as an "inherited susceptibility to reinforcement" (Skinner, 1966a)? "Mental events" and "awareness" *may* be viewed as behaviors strengthened by society, which reinforces the naming of internal states, but is *that* really informative?

Compare Skinner's (1953, Ch. XVIII) treatment of the "self" as a "functionally unified system of responses" with part of James' treatment (1890, Ch. X) and his interpretation, which is similar to Skinner's:

For this central part of the self is felt. It may be all the Transcendentalists say it is, and all that Empiricists say it is into the bargain, but it is at any rate . . . no mere summation of memories or mere sound of a word in our ears. . . . But when it is found, it is *felt*, just as the body is felt, the feeling of which is also an abstraction, because never is the body felt all alone, but always together with other things . . . coming to the closest possible quarters with the facts, *it is difficult for me to detect in the activity any purely spiritual element at all. Whenever my introspective glance succeeds in turning round quickly enough to catch one of these manifestations of spontaneity in the act, all it can ever feel distinctly is some bodily process, for the most part taking place within the head.*

He goes on to describe the bodily experiences (activities) which he associates with attending, assenting, negating, and so on, concluding that:

. . . *it would follow that our entire feeling of spiritual activity, or what commonly passes by that name, is really a feeling of bodily activities whose exact nature is by most men overlooked.*

Skinner is not particularly interested in phenomenal description, or even in careful objective description of the behavior of others. His goal seems to lie in convincing his

readers that whatever the phenomena and whether it has been well described or not, his analysis can deal with it. His account, in turn, rests almost entirely on the concept of reinforcement; all depends on the number and strength of behaviors in our repertoires, environmental stimuli present, and (ultimately) upon histories of reinforcement. One may wonder whether such heavy reliance on a single concept is justifiable, especially when that concept is routinely used in a less than rigorous way.

James, who was much more concerned with description, *could* have stressed an explanatory concept which is strikingly similar to “reinforcement” as that term is often used by Skinner. The fact that he didn’t provides an interesting and instructive comment on the two men.

REINFORCEMENT AND INTEREST

According to Skinner (1953, p. 122), “. . . taking an interest is only another way of expressing the consequences of operant reinforcement.” Thus, among other things, a reinforcer may be “less rigorously” treated as a stimulus which is interesting. As such, the concept of reinforcement is exactly what James meant when he described *ideas* as interesting. I will illustrate this in the following paragraphs.

Though James never gave up the idea that behavior could be “free,” he suggested in his famous theory of ideo-motor action (1890, Ch. XXVI) that voluntary behavior may be explained by recourse to “ideas,” which consist of sensory feedback arising from previous action. The idea of a movement (its feedback) produces its movement, unless inhibited by ideas corresponding to incompatible action. Thus the idea of movement of a limb produces that movement unless inhibited by another idea, for example, the feeling of that limb being burnt.

What is crucial in this account are the factors which result in the domination of a particular idea; since the idea is a stimulus, the problem is to determine what makes a stimulus powerful, “attention-getting,” or “interesting.” James considered the possibility of prior pleasure and pain associated with ideas as the basis of “interest” or attention-getting power. But he quickly discarded the possibility: “. . . we need not seek an illusory simplification at the cost of half the facts” (1890, Ch. XXVI). He recognized that “interest” must include not only associations of pleasure and pain, but the “. . . tediously haunting, morbidly fascinating, and . . . mawkishly silly.”

I don’t feel it unfair to say that Skinner, particularly but not exclusively in his popular writings, has often used the term “reinforcement contingencies” as James *could* have used “interest.” (Read *Beyond Freedom and Dignity* and substitute “interest” for “reinforcement;” perhaps my point will be clearer). James, unlike Skinner, recognized that “interest” is only a summary term for our ignorance of all the ways that the world acts in phylogeny and ontogeny to make events more or less interesting. If reinforcement is used in a similarly vague way, then a translation of psychological phenomena into reinforcement-derived terms is of limited usefulness. Thus, it is very important that a reinforcer be defined more precisely than simply as an “interesting event.”

WHAT IS A REINFORCER?

The history of the concept of reinforcement has been ably traced a number of times (e.g., the thorough treatment by Wilcoxon, 1969). For Skinner, of course, a reinforcer is empirically defined; it is any event which strengthens a behavior upon which it is contingent. It does not have any necessary connection with pleasure, pain, arousal, adjustment, biological survival, need reduction, or any other underlying theoretical mechanisms.

By now it seems apparent that the list of possible events which can serve as reinforcers is endless, ranging from the delivery of food to a hungry organism to response-dependent electric shock, which is avoided under other circumstances (e.g., Byrd, 1969). If we are ever to progress past the tautology that reinforcers are “interesting events,” it is essential that we become much clearer about just what a reinforcer is. The task of specifying that characteristic common to all reinforcers has really never gotten much attention; even those who criticize Skinner’s “narrowness” seem incapable of thinking of reinforcers other than food or shock. Aside from the excellent work of Premack (e.g., 1959) and Timberlake and Allison (1974), little has been done to specify what will act as a reinforcer in advance of its application. This is not to say that anatomical substrates for some forms of reinforcement are not being sought, but success in this area will be of limited help, since neural substrates cannot aid us in clarifying vague empirical concepts. An “interest” center is not the answer.

Perhaps the task is hopeless, but if this is the case it may be wise to consider the possibility that behaviorism may one day progress beyond the concept of reinforcement. At any rate, it is essential that we *recognize* the problem; pronouncements like the following are not of much help (MacCorquodale, 1970):

But the fault, if any, is in nature, not in our theories. Reinforcers seem in fact to have only one universal property: they reinforce, and no amount of dissatisfaction will either add a correlated property nor disprove the fact that they do reinforce.

Contemporary research continues to deal with a relatively narrow range of reinforcing events (e.g., food, water) and with a similarly restricted set of behaviors. This is not a criticism in itself, only a reminder that Skinner’s generalizations rest upon what is still a very meager empirical base. The concept of reinforcement has virtues, both theoretical and practical, which may lead to an overemphasis of its importance; cf. Spence (in Hull, 1943):

Since reinforcements play an exceedingly potent role in modifying behavior, a technology based even on such knowledge is bound to be strikingly effective, especially in comparison with what the traditional procedures in the area are likely to have been.

Or, as a sympathetic critic (Kantor, 1970) suggested, one word summarizes too much:

As it happens, and this is not a virtue, most of the conditions of behavior are neglected in favor of one kind, that is reinforcement. . . . It is a relevant comment here that though anyone can claim the semantic license to refer to every

kind of behavior condition by the word "reinforcement," this is certainly not to the advantage of behavioral analysis.

So as the word "reinforcement" has come to be used, it is open to question whether our understanding of the concept justifies the vagueness with which we must refer to reinforcers. Skinner's early work was certainly ground-breaking, largely because his was the one analysis which bridged the gap between the reflex as an anatomical unit and the sort of behavior which is of most interest to us. This leads to the last argument, the fact that Skinnerian psychology is applicable to the solution of human problems and this fact alone renders any criticism of the concept of reinforcement moot.

THE APPLIED ANALYSIS OF BEHAVIOR

Skinner's heavy reliance on the contingencies of reinforcement may be justified in part by the success of operant conditioning methods in animal research and in applied human settings; e.g., in various behavior-modification techniques. My praise for James is irrelevant, since he contributed nothing capable of such application. In fact, while Skinner undeniably aided in popularizing the practical application of the "Law of Effect," behavior modification is by no means restricted to operant conditioning methods; cf. Watson's (1930) contribution to what is now called "systematic desensitization." And, as is well known to animal trainers, the principle of reinforcement antedates formal operant methods by more than a few decades. As far as James is concerned, anyone familiar with his writings knows that it is replete with sound practical advice which may have benefited his readers over the years more than have the operant methods employed on man.

For a critique of the research which has developed around Skinner's specific formulation, see Kantor (1970). Kantor's suggestions are certainly not the only alternatives to present strategies, but they emphasize the fact that areas other than the intensive study of the effects of reinforcement are important (and neglected). In addition, it is becoming evident that *some* changes in basic views will be necessary to deal with even the simplest cases of animal learning. One of the most salient examples is "behavioral contrast," which has proven especially troublesome for a straight-forward operant analysis (e.g., Reynolds, 1961; Malone and Staddon, 1973; Malone, 1975). "Reinforcement," like "interest," is a problem itself; it should not be treated as an all-purpose explanatory device.

CONCLUSIONS

I am a great admirer of Skinner, but I am often disturbed by the excessive claims for his methods made by his followers (and by his critics!). I have argued that a comparison of James' and Skinner's work shows similarities and that Skinner's *particular* formulations are not particularly important.

In their delineation of the subject matter of psychology, we find that James' radical empiricism is very similar to Skinner's behaviorism. However, Skinner's early contributions, including the concept of the operant are certainly not *required* by his behaviorist views, though they are compatible with them.

Skinner's more recent work is less substantive — the weakness lies in his efforts to apply a very tentative and specific formulation to the explanation of cursorily described phenomena. This invites comparison with James' excellent descriptions; I tried to convey the flavor of these by including excerpts, but a real appreciation requires the reading of his work.

Comparing James and Skinner further, I suggest that Skinner's "analyses" often amount to mere translations to conditioning language. His heavy reliance on "reinforcement contingencies" is almost a literary device; it is a gross simplification to apply this term to the many events which may act as such. I point out that James *could* have used the word "interest" in a similar way, but he recognized the shortcomings of such an approach.

The word "reinforcement" is often used as an admission of ignorance concerning *both* the behavior in question and its antecedents. Skinner's treatment is successful in dealing with a wide range of phenomena only if one remains patient with his very cavalier treatment of key concepts. If the proper definition of a reinforcer requires a knowledge of the entire history of the species in question and of the individual in question then an account based on reinforcement is of little help. The "contingencies of reinforcement" may act as an aid in formulating problems; the concept does not explain anything unless we can better understand what we mean when we use it.

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John C. Malone, Jr.

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