

ANSWERING OBJECTIONS TO SELF-MANAGEMENT AND RELATED CONCEPTS

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ABSTRACT: Confusion and controversy surrounding the area of "self-management" stem from a failure to consider the multi-level nature of self-management and a lack of terminological consensus among researchers. The current paper analyzes both conceptual and empirical objections to self-management. Included in the discussion is a description of the effectiveness of self-management as well as an attempt at incorporation of self-management within the overall radical behavioral framework.

Key words: self-management, self-reinforcement, rule-governed behavior, radical behaviorism.

A young woman is born into an orthodox Jewish family. Through modeling and reinforcement, she learns to perform behavior associated with that ideology. She then relocates to a secular environment, with no social contingencies to maintain her ritual-following. Despite the predictions of reinforcement theory, her ritual-following does not extinguish. Without any identifiable external reinforcers to explain the maintenance of her behavior, we must invoke some other mechanism to explain the continued performance of the rituals. One attempt to explain this common maintenance of behavior is "self-management."

As stated by Kazdin (1975), self-management research brings behavior analysts closer to the work of other psychologists than does any other area. No other behavioral process, by its very nature, seems to question the underlying assumptions of behavior analysis as much as does "self-management." The notion that behavior should not be explained in terms of an inner autonomous "self" is one of behavior analysis' main messages (e.g., Skinner, 1971). It is therefore not surprising that ideas regarding the various topics that make up self-management have provoked strong debate (e.g., Catania, 1975; Goldiamond, 1976a, 1976b; Mahoney, 1976; Rachlin, 1974; Thorsen & Wilbur, 1976).

Skinner (1953) is generally cited as the first individual to describe self-management, the means by which an individual systematically alters her/his own behavior via operant methods. If we regard self-management as behavior, we can state the definition more precisely: Self-management is the act of applying

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behavioral principles to one's own behavior (Kazdin, 1975). As stated by Skinner (1953):

When a man controls himself, chooses a course of action, thinks out the solution to a problem, or strives toward an increase in self-knowledge, this is behaving. He controls himself precisely as he would control the behavior of anyone else—through the manipulation of variables of which behavior is a function. His behavior in so doing is a proper object of analysis, and eventually it must be accounted for with variables lying outside the individual himself, (p. 228)

Skinner (1953) called this area "self-control." This term has led to some philosophical confusion, however. Is the locus of control of behavior within the "self in question, or is it within the environment? "Self-management" is the preferred term for this set of procedures (Brigham, 1980) for two reasons. "Self-management" does not as strongly suggest control by an inner autonomous being and distinguishes the "self-control" behavior management strategy described by Skinner (1953) from the "self-control" described by Rachlin and Green (1972).

Rachlin and Green (1972) described parameters by which infrahumans would put off immediate reinforcement and choose a larger, delayed reinforcer. Rachlin and Green likened their laboratory situation to one in which a human worker puts aside money for some later time. They conceptualized self-control as a delay of gratification process. The disparity between short- and long-term reinforcers, and short- and long-term aversives, is no doubt a large portion of the subject matter of self-management. The importance of this concept has been expanded upon by other researchers. Mischel, Shoda and Rodriguez (1989), for example, found that pre-school children differed in their ability to "self-control" (delay gratification) and that those with greater self-control skills grew to be more socially and cognitively competent adolescents.

Malott (1989), however, suggests that Rachlin and Green's analogy is lacking. He notes that in many cases the essential problem is not delayed outcomes but rather outcomes with small and only cumulative effects or improbable outcomes. Further, Malott (1986) suggests that the delay process studied by Rachlin and Green does not actually correspond to the human analogue. The delays in the Rachlin and Green study involved only a matter of seconds with conditioned reinforcers to bridge the gap, while the human situation may involve months or years without any bridging stimuli. In view of Malott's objections, and as a matter of definition, we should draw a distinction between self-control and self-management. "Self-control" should be used for procedures that involve overcoming disparities between the effects of long- and short-term consequences, while "self-management" should be reserved for the more general program of applying operant principles to one's own behavior. While this will in all probability prove to be a useful distinction, the terms have historically been used interchangeably, (e.g. O'Leary & Dubey, 1979; Rosenbaum & Drabman, 1979; but see Brigham, 1980, for an argument against interchangeability).

Procedural Objections

Even with this distinction between self-control and self-management made, some researchers (e.g., Catania, 1975; Goldiamond, 1976a) have charged that the entire area of self-management is a mass of logical contradictions (i.e., they have a priori reasons for rejecting self-management). These authors contend that self-reinforcement (and related terms) are misnomers, claiming:

(a) that the increases in probability of behavior which define reinforcement are not present (the process of reinforcement thus not being accurately depicted),

(b) that it is not the "self that is being monitored (or reinforced) but rather some behavior of the organism (thus Catania's suggestion that self-awareness is actually the subject matter, and his insistence that two behaviors are in question—the target behavior and the delivery of reinforcement; see also Skinner, 1953), and

(c) that the judgment as to whether the response has met criteria for reinforcement is, in all cases except self-management, generally made by others. In self-management, reinforcement is thus not independent of organism.

Most seriously, however, Catania and Goldiamond fear

(d) that self-reinforcement might become an explanatory fiction. Invoking self-reinforcement might halt the search for the real consequences affecting behavior, which are likely to be found outside the self-managing individual.

Answering Procedural Objections

The objection that the increases in probability of behavior which define reinforcement are not observed in self-reinforcement was made by Skinner (1953):

Something of this sort unquestionably happens, but is it operant reinforcement? . . . it must be remembered that the individual may at any moment drop the work in hand and obtain the reinforcement. We have to account for his not doing so. . . . The ultimate question is whether the consequence has any strengthening effect upon the behavior which precedes it. Is the individual more likely to do a similar piece of work in the future? It would not be surprising if he were not, although we must agree that he has arranged a sequence of events in which certain behavior has been followed by a reinforcing event. (p. 238)

To answer this objection, we must remember that when reinforcement is externally delivered, we do not assume that because a response has been followed by a consequence it has been reinforced. An increase in the future probability of a given response is essential to the definition of reinforcement, no matter who or what is delivering the consequence. If self-delivered consequences did not lead to an increase in the future probability of the target response, then it is not self-reinforcement, it is merely the self-delivery of consequences (Mace & West, 1986).

As an elaboration on this first objection, Skinner suggested that we must account for the fact that the individual does not just drop the work and take the reinforcing stimulus. As Hayes, Rosenfarb, Wulfert, Munt, Korn, and Zettle (1985) wrote, "In self-reinforcement... a consequence not earned is a consequence delayed,

because the subject owns the consequence to begin with" (p. 211). This was the case in the Hayes et al. experiment, where the reinforcer was owned by the subject and self-delivery of consequences with this stimulus had no strengthening effect on behavior. This was not the case in other studies where the reinforcing stimulus was owned by the individual (e.g., Ninness, Fuerst, Rutherford, & Glenn, 1991; Newman, Buffington, & Hemmes, 1996; Newman, Buffington, O'Grady, McDonald, Hemmes, & Poulson, 1995; Newman, Ryan, Tuntigian, & Reinecke, in press; Richman, Riordan, Reiss, Pyles, & Bailey, 1988; Stahmer & Schreibman, 1992).

Malott (1989) suggests that a limited hold on consequences could eliminate this problem of reinforcer ownership. An individual would have to take the reinforcer immediately after engaging in the response or would lose the opportunity to self-reinforce (i.e., there would be no other way for the individual to obtain the reinforcer, save by engaging in the target response in question). This solution aside, it is certainly true that we must account for non-consumption of the reinforcer. This is not a terribly strong objection, however. For that matter, in an external reinforcement situation, why doesn't the organism just physically take the reinforcer and therefore come to own the stimulus? The answer, presumably, is that there is something within the reinforcement history of the individual that makes such behavior unlikely. A case could be made, for example, that students have received reinforcement for being "honest," or that they have received punishers for "cheating."

A second objection is that it is not the "self that is being reinforced, but rather some behavior of the individual. This point is correct, but this is also the case with externally delivered reinforcement. In technically correct discussions, we do not speak of reinforcing an organism, but of reinforcing a response of that organism. In self-reinforcement, it is some target behavior of the individual that is reinforced. Catania and Skinner are correct that there are two responses under consideration, the target response and the delivery-of-reinforcer response. This relationship is implicit in the definition of self-reinforcement. In order for the stimulus to qualify as a reinforcer and the process to correctly be considered self-reinforcement, a stimulus must be presented contingently (the reinforcer-delivery response) after a given response (the target behavior), and the future probability of this target response must increase. This objection could be eliminated by calling the process "self-delivered" or "self-determined" reinforcement, but adding another term would add little to the debate.

The issue raised by the third objection, whether reinforcement must be externally produced or determined to be considered "true" reinforcement, is open to question. Skinner (1953) stated that the responding of the organism leads to the delivery of the consequence, however it is delivered, and thus a case could be made that *all* reinforcement is self-produced. Neither automated machines nor human behavior analysts employ arbitrary criteria as to whether a response qualifies for reinforcement. Criteria are set beforehand and reinforcement is delivered when the behavior has been emitted. There is no empirical reason to believe that individuals

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do not do this for their own behavior, or that self-delivered reinforcers do not have the same effect as externally delivered reinforcers.

The last objection is that self-reinforcement might become an explanatory fiction. Whenever the variables influencing behavior could not be found, self-reinforcement might be invoked as an explanation. This is a concern, but one that could be applied to any term. Even simple reinforcement could become an explanatory fiction. If we could not discover the variables affecting behavior, we might invoke an organism's reinforcement history or possibly the intrinsic reinforcement of an activity. It is not the term that is a threat to the rigor of the discipline, but its inappropriate usage.

Why Teach Self-management?

As described by Koegel and Koegel (1990) and Mace and West (1986), there are real advantages to teaching self-management skills. First, self-management may be used over long periods in the absence of a trainer. Second, self-management skills can be adapted to a variety of settings and behavior. The virtues of self-management training were expanded upon by Cooper, Heron, and Heward (1987), who noted: Instances of important behavior change that might have been missed by external agents would not be missed by the individual; certain types of behavior (e.g., smoking, exercise, assertiveness) do not lend themselves to external-agent control but rather are more appropriately monitored by the individual him or herself; those with self-management skills require less trainer time; self-management can be used to control behavior not affected by weak or distant outcomes; some people perform better under self-selected standards; and finally, self-management "feels good." Reactivity, changes in behavior as a result of self-monitoring, is also widely reported (Kirby, Fowler, & Baer, 1991; Mace & West, 1986; McFall, 1977).

Is Self-management Effective?

In reviews of the effectiveness of self-reinforcement, Morgan and Bass (1973) and Sohn and Lamal (1982) found no support for the clinical effectiveness of self-management. These researchers attempted to isolate the effects of what they called "self-reinforcement." Articles that used such terms as self-monitoring or self-control were not considered unless linked to self-reinforcement in previous literature reviews. Can one, however, separate self-reinforcement from the other processes involved in self-management? From a logical standpoint, for an individual to self-reinforce, he or she must first observe his or her own responding (self-monitoring). It would not be possible to deliver consequences without observation, or vice versa. The various elements of self-management are seemingly inseparable, and thus Sohn and Lamal's inclusion criteria for studies might be questioned.

Further, Sohn and Lamal (1982) chose studies that they felt were "accommodating to their definition of self-reinforcement" (p. 181). According to their definition, "Individuals are in complete control of the reward, which means that they are at liberty to reward themselves noncontingently, to cheat" (p. 181). This

conception would seem to indicate that the responses involved in self-management (i.e., self-monitoring and self-reinforcement) are without consequences. Self-monitoring and self-delivery of reinforcement, however, can be seen as target behavior and externally reinforced, as Koegel and Koegel (1990) and Koegel, Koegel, Hurley, and Frea (1992) were able to demonstrate. Even if contingencies are in effect for these responses, at least during an initial training phase, it is still the individual who is self-monitoring and self-reinforcing. The fact that self-management skills are externally reinforced does not make self-management procedures any less real. If accuracy of self-monitoring is reinforced, does this mean that this is no longer self-management? What if self-delivery of consequences were externally reinforced? Newman et al. (1995) and Stahmer and Schreibman (1992) taught self-management skills to clients, skills that did not require further external reinforcement in order to be maintained. Rosenbaum and Drabman's (1979) suggestion—that "true" self-reinforcement (without consequences for the behavior involved in self-management) has not been described—is no longer valid.

Malott (1989) re-examined the studies Sohn and Lamal (1982) reviewed and discovered that statistically significant results were found in 36 of the 44 studies. This suggests that self-reinforcement procedures may in fact be effective. Where is the burden of proof? Must we prove that self-reinforcement procedures are effective, or must we prove that they are ineffective? Self-management training has been employed in a variety of settings with success (e.g., Agran, Fodor-Davis, Moore, & Deer, 1989; Broden, Hall, & Mitts, 1971; Browder & Shapiro, 1985; Chase & Clement, 1985; Davis & Russell, 1990; Gajar, Schloss, Schloss, & Thompson, 1984; Harris, 1986; Hughes, Korinek, & Gorman, 1991; Jacob, Penn, Kulik, & Spieth, 1992; Koegel & Koegel, 1989; Koegel & Koegel, 1990; Koegel, et al. 1992; McFall, 1977; Miller, Strain, Boyd, & Jarzynka, 1993; Moore, Agran, & Fodor-Davis, 1989; Newman et al. 1995; O'Leary & Dubey, 1979; Posobiec & Renfrew, 1988; Richman et al., 1988; Rosenbaum & Drabman, 1979; Stahmer & Schreibman, 1992). It seems that the evidence leans towards self-reinforcement procedures being effective, and therefore the burden of proof shifts to the nay-sayers.

The Processes of Self-management

With the success of self-management procedures demonstrated, we now move from questions of the conceptual integrity and effectiveness of self-management procedures to questions of the underlying processes.

Public Goal-setting

Hayes et al. (1985), relying heavily on the Sohn and Lamal review, came to the conclusion that self-reinforcement procedures are not effective. According to Hayes et al., self-reinforcement is effective only when goals are public, and adding self-delivered consequences to public goal-setting does not add effectiveness (with notable exceptions, e.g., Bellack, 1976). Public goal-setting is the crucial variable; the individual is assumed to have a history of externally-delivered reinforcement for

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setting public goals and then achieving them. Self-reinforcement is seen as a special case of external reinforcement. As stated by Skinner, "It appears, therefore, that society is responsible for the larger part of the behavior of self-control. If this is correct, little ultimate control remains with the individual" (1953, p. 240). If we consider self-management as behavior that is subject to environmental influences, then little "ultimate control" will be found within the self-managing person. Public consequences for self-management responses certainly influence the probability of the behavior. That does not mean, however, that public scrutiny is the sole controlling factor. To return to the original example of this paper, Hayes et al. (1985) would explain the maintenance of the ritual-following by pointing out that her behavior could be construed as living up to the requirements of a publicly stated goal. If there is not any scrutiny of this public goal, however, as there was not in this example, then this conception seems less convincing.

Rule-governed Behavior

Another proposed mechanism for the effects of self-management is rule-governance. Briefly stated, rules are verbal descriptions of relationships that exist between behavior and the consequences that will follow this behavior (Glenn, 1987). Some responses lead to only delayed outcomes or to outcomes that are of only cumulative significance. Some responses are meant to prevent improbable outcomes. Malott (1986) suggests that attempting to account for such behavior in terms of standard operant conditioning is tantamount to invoking "action at a distance." The outcomes are too far removed to actually reinforce the responses in question. There must be some immediate consequence that is reinforcing the response. A negative reinforcement process due to rule-following has been proposed as the immediate consequence.

For rules to be effective in shaping behavior, self-management is a necessary condition (Malott & Garcia, 1986). A person must: (a) Know rules (the rules gained through environmental contingencies or verbal descriptions); (b) state the rules to her or himself at the time of behavior; (c) self-monitor and evaluate compliance with rules; and (d) generate aversive self-statements that can be escaped only by compliance with rules.

Reinforcement for rule-following is in the form of reduction of aversive self-stimulation (Malott, 1986). This was the process described by Skinner (1953):

[the troubling behavior] will generate conditioned aversive stimuli and emotional responses... which we speak of as shame or guilt... any behavior which weakens the behavior. . . is automatically reinforced by the resulting reduction in aversive stimulation. (p. 230)

According to this view, rule-governed behavior and self-management are co-dependent. Self-management responses (i.e., self-monitoring and self-reinforcement) are needed to make the rules effective, while the negative reinforcement involved in following the rules maintains the effectiveness of self-management procedures. To

again return to our original example, Malott would assert that the woman's ritual-following was maintained by negative reinforcement. Internalized rules suggest that it is important to perform particular rituals. Self-monitored failure to comply would lead to unpleasant cognitions, cognitions that could only be removed by performing the rituals. This was the process depicted by famed bodybuilder Arnold Schwarzeneger when he described how he wrote out dietary and exercise rules for himself to follow. Compliance was motivated by avoidance of self-reproach.

Self-management and Scientific Understanding

Because they necessarily include concepts based on unobservables, self-management processes like those described by Malott make many behavior analysts uncomfortable. Because this subject matter is, for the most part, unobservable, it does not fit well into the traditional "prediction and control" criteria of behavior analysis. If we restrict ourselves to prediction and control, however, we may wind up sacrificing "understanding," and a more complete account of overt behavior (Malott & Garcia, 1986). That we need to relate private events to public events does not mean that private events are meaningless. Private events can cause public events; they form indispensable links in behavior chains, as Skinner (1953) said:

We shall need to complete the picture by discussing the status of private events in a science of behavior... events which are, for the moment at least, accessible only to the individual himself often occur as links in chains of otherwise public events and they must then be considered. (p. 229)

In view of the fact that it is assumed that private events follow the same laws as overt events, we must account for the genesis of these thoughts, presumably ending with environmental variables. Perhaps we can satisfy the objections of behavior analysts if we can demonstrate that the consequences for the responses in question were at one time overt. In this way, perhaps, we can demystify some of the talk regarding self-management and speak of it in terms of maintenance of previously learned responses. As brought out by Malott and Garcia (1986), the acceptance of private events in the analysis need not stop the search for environmental causes.

Conclusion

In view of what has been discussed above, we can state the following conclusions:

1. Self-management is composed of other responses. These are responses that can be taught and are as determined by their consequences as any other responses. Self-management consists of two responses, self-monitoring and the delivery of consequences.

2. Self-management should be defined as are other terms within behavior analysis. A given target response has been self-reinforced only if performance of the target response has been followed by some self-delivered consequence and the target response increases in probability in the future.

3. The consequences that maintain self-management responses seem to be based on negative reinforcement processes. The individual may self-manage to avoid or remove aversive consequences, either public failure and the consequences that follow, or self-reproach. In the latter case, consequences may not be publicly observable.

4. The objections raised by such individuals as Goldiamond and Catania were not incorrect. They remind us to keep to definitions as stated above that ensure we do not allow self-management to become an area that is less precise than any other within behavior analysis. Self-management can become an explanatory fiction if we do not keep a definition that is phrased in terms of what the individual does and what happens to the behavior of the individual following these actions.

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