SOME ENCOURAGING THOUGHTS ABOUT SELF-REINFORCEMENT¹

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The major points of Goldiamond's position concerning self-reinforcement are as follows:

1. The contingency must be independently defined by the external environment (usually another person or the "natural" consequences of the response itself).

2. The growing tendency to attribute change to self-reinforcement may be ignoring other contingencies, especially those external to the person; those external factors may better account for the observed change.

3. In the orthodox use of operant conditioning with animal subjects in the laboratory, the contingencies are predetermined by the experimenter and are presumed to have an automatic effect on behavior. That is, nothing mediates between the response and the provision of a reinforcing stimulus. Thus, a lever press followed by a pellet serves to strengthen further lever-pressing without anything intervening between.

4. The concept of self-control is a confusing one for the theoretical rationale surrounding operant conditioning. Goldiamond, for example, cites Skinner: "the place of operant reinforcement in self-control is not clear" (1953, p. 237). Self-control may be a misnomer for what might be called environmental or situational control. ("... all reinforcement is self-administered since a response or action of the individual may be regarded as producing its own reinforcement.")

In sum, Goldiamond subscribes to an interpretation that affords no place for cognitive or mediational events in explaining reinforcement

(self or otherwise). Further, he clearly wants to reserve the term reinforcement, *as a procedure*, to an operant framework.

What Goldiamond fails to acknowledge is that a person can engage in self-reinforcement and self-punishment to regulate behavior in the *relative* absence of other people, or, for that matter, microswitches. Self-evaluative standards are primarily acquired and developed through experience with the social environment. Such experience, however, is mediated by cognitive processes. External stimuli get "transformed" via selective attention, interpretation, and categorization. Thus, stimuli acquire much of their reinforcing properties through cognitive processes. A great deal of human behavior is under the control of self-regulatory processes in the sense that a person monitors his performance, evaluates his efforts gauged against certain standards, and often provides differential consequences.

This point is illustrated by Goldiamond's moving account of his own struggle against the consequences of hospitalization after a serious automobile accident (Goldiamond, 1973). What clearly emerged as a functional element in Goldiamond's remarkable self-modification program was his ability to represent cognitively the contingent relationship between specific hospital experiences, such as physical therapy, and eventually being able to resume his professional career. It seems likely that Goldiamond was able to use his thoughts of anticipated success contingently; that is, as reinforcing stimuli to help maintain his behavioral progress. His meticulous attention to data gathered through self-observation provided an excellent self-evaluative criterion against which he could judge his prog-

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ress. In reflecting on his successful self-modification program, Goldiamond cogently observed, "if one does understand the relationship (between behavior and its consequences), one can use the knowledge to plan and establish contingencies and thus control behavior, either one's own or that of others." (p. 98.) Surely the ability to plan and establish contingencies for self-control purposes is consonant with the ability to self-administer these contingencies as well.

A crucial question for self-reinforcement is to what degree are self-evaluative standards independent of the behavior to be evaluated. Goldiamond implies that personal performance standards cannot be independent and thus are not *bona fide* criteria for administering positive consequences contingently. However, some laboratory, classroom, and clinical evidence suggests that such independence may be possible. Laboratory studies demonstrating the element of self-evaluative standards and the appropriate self-administration of reinforcing consequences with human and animal subjects are available (e.g., Bandura and Perloff, 1967; Mahoney and Bandura, 1972; Bandura and Mahoney, Note 1; Masters and Christy, 1974). Several field studies have consistently suggested that with proper training, in which responsibility for self-administering consequences and self-determining standards is *gradually* introduced, subjects can contingently reinforce appropriate behavior (e.g., Bolstad and Johnson, 1974; Drabman, Spitalnik, and O'Leary, 1973; Turkewitz, O'Leary, and Ironsmith, 1975). These studies and others are beginning to show the comparable efficacy of self-reinforcement (compared with external reinforcement) and the fact that subjects can learn how to administer appropriate reinforcement relative to self-determined standards. There are, of course, many problems yet to be examined by these studies, especially with children, such as clearcut evidence for generalization of self-reinforcement effects to situations not directly involved in training (Wilbur and Thoresen, Note 2).

Several major and unresolved issues in self-

reinforcement remain, especially as they apply to clinical usage. One major consideration is that unlike animal studies conducted in controlled laboratory settings, self-reinforcement in humans involves several other variables, such as (1) the role of self-monitoring, (2) the role of evaluative standards, and (3) the *interdependence* of cognitive and external variables in acquiring and maintaining behavior. A second issue involves the relative strength of reinforcing stimuli currently in the individual's repertoire. This issue relates to Premack's notion of reinforcement from a probability viewpoint (e.g., current *versus* potential reinforcers). A third issue has to do with the potentially aversive effects that may occur when previously noncontingent reinforcing stimuli are now made contingent on a prescribed level of performance. Self-reinforcement involves the denial or at least delay of reinforcing events when they are used contingently by the person. Another issue has to do with the source of the reinforcement. Does it make any difference if the source is the person himself or is arranged in advance by the person but provided by the social and/or physical environment?

Other questions, such as how do particular cognitive variables mediate the effectiveness of self-reinforcement, bear careful attention. A specific question in that vein has to do with the anticipation of reinforcing events by the individual. That is, to what extent does such anticipation influence the strength of the reinforcing event when it is later utilized?

It is unfortunate that Goldiamond takes a narrow view of the concept of reinforcement. In suggesting another label for self-reinforcement processes (such as self-encouragement) where self-determination and self-evaluation are involved and in suggesting that we "look elsewhere", he encourages applied researchers to bypass a growing and impressive literature in the cognitive area of behavior modification (*cf.* Mahoney, 1974; Thoresen and Mahoney, 1974; Thoresen and Coates, 1976).

Interestingly, Goldiamond gives an example

of an itchy lady who had been scratching uncontrollably (about 180 min per week) with obvious problems, at least to her skin. In helping her reduce this excessive scratching to less than 30 sec per week, Goldiamond identified the reduction of skin lesions as the reinforcing consequence. He argues that this consequence was not self-determined by the unfortunate lady nor was it even self-evaluated, relative to providing such a relieving consequence. Rather, it was automatic and thus nonmediated. Obviously, such a beneficial change was most encouraging to her. However, it seems likely that some private events may have had a hand in this commendable reduction in scratching. She may have actually influenced her scratching behavior by self-instructions, by the anticipation of reduced lesions if she relaxed, and by using positive self-talk when she noticed progress in her self-observation data. It seems unnecessary to exclude totally the functional interdependence of mediating events, such as certain anticipations, self-instructions, and the influence of self-observation (presumably there was some going on) in attributing change to self-reinforcement. The applied researcher should not ignore the *possible* functional value of cognitive events any more than those of the external environment.

Why not look at self-reinforcement as a complex reciprocal process that is influenced by the external environment which, in turn, is altered by the person's internal as well as external actions? Perhaps the place of operant reinforcement in self-control is clear and convincing—but not conclusive.

REFERENCE NOTES

1. Bandura, A. and Mahoney, M. J. *Maintenance and transfer of self-reinforcement functions*. Unpublished manuscript, Stanford University, 1973.
2. Wilbur, C. S. and Thoresen, C. E. *Teaching self-reinforcement to youth: It's more than reinforcement*. Unpublished manuscript, Stanford Boys Town Center for Youth Development, Stanford University, Stanford, California.

REFERENCES

- Bandura, A. and Perloff, B. Relative efficacy of self-monitored and externally imposed reinforcement systems. *Journal of Personality and Social Psychology*, 1967, **7**, 111-116.
- Bolstad, O. and Johnson, S. Self-regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis*, 1972, **5**, 443-454.
- Drabman, R. S., Spitalnik, R., and O'Leary, K. D. Teaching self-control to disruptive children. *Journal of Abnormal Psychology*, 1973, **82**, 10-16.
- Goldiamond, I. A diary of self-modification. *Psychology Today*, November, 1973, 95-102.
- Mahoney, M. *Cognition and behavior modification*. Cambridge, Mass.: Ballinger, 1974.
- Mahoney, M. J. and Bandura, A. Self-reinforcement in pigeons. *Learning and Motivation*, 1972, **3**, 293-303.
- Masters, J. C. and Christy, M. Achievement standards for self-reinforcement: Effects of task length and task difficulty. *Child Development*, 1974, **45**, 6-13.
- Thoresen, C. E. and Mahoney, M. J. *Behavioral self-control*. New York: Holt, Rinehart, & Winston, 1974.
- Thoresen, C. E. and Coates, T. Behavioral self-control: Some clinical concerns. In M. Hersen, R. Eisler, and P. Miller (Eds.), *Progress in Behavior Modification*, Vol. 2. New York: Academic Press, 1976.
- Turkewitz, H., O'Leary, K. D., and Ironsmith, M. Producing generalization and maintenance of appropriate behavior through self-control. *Journal of Consulting and Clinical Psychology*, 1975, **43**, 577-583.