We know already that there is a time when the female fly prefers protein, which cannot nourish her own body, to sugar, which is an adequate food for her but useless for her eggs. Here is an example of survival of the individual being subordinated to survival of the species. In some quarters it would be hailed as maternal instinct, and by so naming it we would be no nearer an understanding of what it is.

—V. G. Dethier, 1962, emphasis added

It may seem odd to begin a chapter on self-management with a quote concerning the eating patterns of the common fly, but Dethier’s point is a general one about language and explanation, which is germane to the analysis of human behavior as well. In this instance, the editors of the

*The analysis of self-management presented here is a result of reading and interpreting the work of many investigators. In most instances I have not cited positions similar to mine. The reader will recognize the liberal borrowing from such theorists as Skinner, Rachlin, Catania, our editors Kanfer and Karoly, and even those theorists whose overall positions I have rejected such as Bandura and Mahoney. Parts of earlier papers on self-control appear in this analysis of self-management. Prose and one table from “Self-control,” which was originally published in A. C. Catania and T. A. Brigham (Eds.), The Handbook of Applied Behavior Analysis (New York: Irvington Press, 1978) is reprinted with the permission of the editors and publisher. Prose from “Self-control Revisited,” originally published in The Behavior Analyst, is reprinted with the permission of the Association for Behavior Analysis.
volume have chosen to use the term “self-management” in the title rather than “self-control.” Presently no general consensus exists in the general area of research and treatment that dictates how each term should be used. From a radical behavioral perspective, however, there are good reasons for using “self-management” to describe a particular type of response repertoire displayed by an individual and for reserving the term “self-control” solely to denote certain types of response contingencies which cause difficulties for the individual.

A major reason for preferring the term “self-management” to describe the behavior of the individual has to do with word usage. Clearly, the manner in which words are utilized has important implications for the analysis of the phenomenon in question. As Dethier (1962) and others (e.g., Rapaport, 1953) have noted, labeling often tends to be confused with explanation; especially when the label appears in the noun form rather than the adjective form. In common usage the term “self-control” is consistently employed as a noun while “self-management” more frequently appears as an adjective. For example, the sentence “Sally has a great deal of self-control,” seems complete and stands on its own. Further, the statement can be easily interpreted as an explanation of Sally’s behavior. On the other hand, “Sally has a great deal of self-management,” is an awkward sentence and needs another word to complete it. The sentence is better rewritten as, “Sally displays a great many self-management responses or self-management skills.” The term “self-management” itself tends to force the focus of the analysis on what the individual does. In contrast, the term “self-control” implies existence of a special entity called the self. After hypothesizing the self, the question “What does the self control?” follows. Again by implication, the self controls the individual’s behavior. This interpretation of the term logically leads investigators to pursue an internal search for the self and its parts.

A related difficulty is that by focusing on the self, well-documented behavioral processes become transformed from observable environmental events to inferred cognitive events. Similarly, behavioral principles change from accounts of these observable events to speculations about hypothesized cognitive processes. The following illustration of self-reinforcement appears in a well-known text on self-control, after a careful and well-done presentation of positive reinforcement:

A professor we know reported that he developed the bad habit of bluntly telling others when he thought they were not acting very intelligently. “What do you think reinforces this behavior?” he was asked. “I guess it’s the feeling that I have that I am smart. By showing others when they do something dumb, it shows them that I am smart. The trouble is, of course, that it makes them angry.” We suggested that he could gain the same reinforcer (feeling in-
telligent) by intelligently choosing a positive statement instead of making some depreciating remark. (Watson & Tharp, 1972, pp. 102-104).

Although the professor of the anecdote may have taken an initial step in a behavioral analysis of his actions (i.e., the observation that this particular response makes others angry), the difficulty is that here, apparently without notice, the definition of a reinforcer has changed from the observation of an environmental event to the identification of a feeling about behavior. Similarly, the basis for identifying a reinforcer has changed from a functional demonstration of an increase in the frequency of a behavior to an introspective analysis.

Clearly this manner of defining and identifying reinforcers alters the basis of explanation from behavior/environment interactions to the functioning of the internal self. Self-reinforcement is controlled not by environmental events, but by self-determined standards of performance, and those standards are inside the organism mediating the influence of environmental variables on behavior (Bandura, 1977). Whether the standard is inside the self is unclear at this time; but the opportunity to develop a new set of ids, egos, and superegos certainly exists here. Also apparently inside are self-instructions and discriminations. And what are these things? Thoughts, cognitions, cognitive states, and/or cognitive structures are some of the major candidates for the status of explanatory concepts (Meichenbaum, 1974). As cognitive events rather than behavioral processes become the target of therapeutic interventions, the clarity of the behavioral analysis is lost. Such ambiguity, however, could be avoided if investigators attend to the responses in question. From a radical behavioral perspective, the theoretical issue for psychologists should not be “What is self-control?” but rather “How does the individual manage his or her behavior?”

Obviously there are a number of issues concerning self-management where there is a divergence of approach and analysis between cognitive behaviorists and radical behaviorists. As a first step in the elaboration of a radical behavioral position on self-management, three areas where a radical behavioral position clearly differs from that of current cognitive approaches to self-management will be examined in detail. They are: self-reinforcement, reciprocity, and the role of conscious private events.

**SELF-REINFORCEMENT**

As an interest in self-management approaches to dealing with behavior problems evolved in the late sixties and early seventies, not unexpectedly, one of the first procedures to be applied in this new approach was positive reinforcement. In many ways, this choice was not unreasonable. Positive re-
inforcement has proven to be an extremely powerful technique in behavior modification programs, and the extent of the procedure to instances where the individual provides positive reinforcement for his or her own behavior seemed to be the next logical step. The logic and rhetoric of self-reinforcement have proven to be very popular; and current self-reinforcement is a key if not the major theoretical and procedural component of most conceptualization of self-management. Nonetheless, at this time, the focus of self-management systems on self-reinforcement appears to be overly simplistic. There are both theoretical and practical reasons why this emphasis seems misplaced. First, the origins of the concept of self-reinforcement are at least in part based on a misinterpretation of Skinner's discussion of the possible role of positive reinforcement in self-control (Skinner, 1953). For instance, a fairly common attribution to Skinner is found in the following passage: "Skinner (1953) suggests that one of the ways in which individuals control their own behavior is by the administration of rewards to themselves without environmental restrictions and contingent upon certain behavior" (Rehm & Marston, 1968). The most straightforward interpretation of this passage is that Skinner advocates self-reinforcement as a method of changing behavior. Skinner's actual verbal behavior was somewhat less positive.

After describing a possible example of self-reinforcement, Skinner goes on to analyze the example:

Something of this sort unquestionably happens, but is it operant reinforcement? It is certainly roughly parallel to the procedure in conditioning the behavior of another person. But 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. It may be that such indulgent behavior has been punished—say, with disapproval—except when a piece of work has just been completed. The indulgent behavior will therefore generate strong aversive stimulation except at such a time. The individual finishes the work in order to indulge himself free of guilt. (Skinner, 1953, chapter XII, emphasis added)

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. (Skinner, 1953, chapter XV, p. 238)

It is difficult to interpret these passages from Skinner as a suggestion that self-reward or self-reinforcement is likely to be an effective procedure for modifying one's own behavior. Skinner has noted the procedural similarity between operant reinforcement and self-reinforcement, but he has also recognized that some other process is required to account for the self-
reinforcement behavior itself. Because this issue has been the focus of the exchanges between Bandura and Catania and those between Goldiamond and Mahoney, rather than continue the discussion here, the reader is referred to those authors' papers (see References).

Leaving aside the theoretical arguments concerning self-reinforcement procedures, there is the practical question raised by Skinner: Do they work? Currently, there seems to be a general consensus in the field that they are effective behavior-change techniques. O'Leary and Dubey (1979), writing in the *Journal of Applied Behavior Analysis*, concluded that "Self-reinforcement is clearly one of the most powerful self-control procedures—effective when used alone, incremental when added to other procedures, and equal to or better than external reinforcement." This is certainly a ringing and definitive endorsement of self-reinforcement. However, the evidence they muster in support of this conclusion does not appear to warrant such a positive assessment. In all, 10 studies are cited to support the thesis. Of these, only two were conducted in applied settings (see Baer, 1979 on the importance of applied research for testing principles) and neither of these met the Bandura and Mahoney (1974) criterion on self-reinforcement—that the reinforcer be freely and continuously available to the subject whether the response is emitted or not. Most of the other studies are only tangentially related to the author's conclusions. For instance, the authors cite a study by Kanfer, Karoly, and Newman (1975) as demonstrating that the statement "I am a brave boy (girl); I can take care of myself in the dark" was a self-reinforcer which increased the time children spent in the dark. Kanfer et al., however, referred to the "I am a brave boy (girl)" statement as a verbal controlling response. The statement was not voluntarily emitted by the subjects contingent on any behavior, but rather was elicited by the experimenters on cue in the treatment condition. In fact, Kanfer et al. report that the statement was never verbalized by the subjects in the subsequent test sessions. They speculate that the children may have covertly emitted the response, but they indicated there was no evidence to suggest that the students actually did so. A careful reading of the study's procedures indicates that the statement was never used as a contingent stimulus, and, as Kanfer et al. note, it more likely functioned as some form of antecedent instruction to set a high criterion for staying in the dark. Such antecedent statements have been consistently demonstrated to affect behaviors (e.g., Hartig & Kanfer, 1973; Karoly & Briggs, 1978), and in the current analysis would fit within the context of environmental restructuring or commitment responses. Irrespective of the precise theoretical interpretation of the procedures, the statement clearly had antecedent and not reinforcement functions. It is probably the case that O'Leary and Dubey inferred that the statement was a reinforcer because of its content, and not because of how it actually functioned in the study. To date, unequivocal empirical evidence to support the
notion of self-reinforcement as an effective applied procedure is almost nonexistent and certainly does not justify the major role that self-reinforcement has been given in most treatments of self-management.

**RECIROCITY**

Another notion that has created controversy between radical behaviorists and cognitive behaviorists is that of reciprocity. Simply stated, reciprocity refers to the mutual effects of two variables on each other: A may be viewed as the cause of B, while from a different perspective, B may be analyzed as the cause of A. In psychology, cognitive behaviorists have suggested that the analysis of behavior as a function of environmental events is arbitrary and that changes in the environment may be analyzed in terms of changes in the organism's behavior (Bandura, 1971; Mahoney, 1974). Reciprocity, in and of itself, is not a concept antithetical to a radical behavioral analysis of behavior. Skinner's basic definition of the operant consists of the effects that a response has on the environment and how those changes in turn influence the frequency of that particular response. The fact that psychologists generally concern themselves with manipulating the environment to produce behavior change does not rule out the possibility of other relations holding. The environment of an older non-language child is considerably different from that of a child possessing functional language. If the non-language child acquires functional language, that acquisition alters his or her environment in that what was noise is now the discriminative stimuli or reinforcement for words. Although applied behavior analysts may be more interested in the environmental changes that produced the language acquisition, it may be equally important to examine the environmental changes produced by the new language responses. In the second case, it is appropriate to plot the environmental changes as a function of behavior change. By doing so, it might be discovered that some classes of language responses produce greater environmental change than others. Such a finding, in turn, could be important for designing language-acquisition programs.

Upon analysis, then, the concept of reciprocity or the desirability of sometimes analyzing environmental change as a function of behavior change is not in question between the radical behaviorists and the cognitive behaviorists. Rather, how the cognitive behaviorists use the concept is in dispute. Mahoney (1974) correctly argues that the notion of reciprocity need not result in the "mental way stations" so eloquently opposed by Skinner. Unfortunately, though, the cognitive-behavior concept of reciprocity centers not on the behavior/environment interactions, but rather on the role of the individual's conscious cognitions in these interactions. For instance,
the extensive locus-of-control literature often employs reciprocity as an explanatory concept, but, here, the individual's actual abilities to affect the environment are not of major importance; instead, it is the individual's perceptions. Mahoney (1974) illustrates the importance of personal belief with the following example:

A child's poor school performance, for example, may be partly affected by his personally inferred incompetence. By systematically altering that perception, academic performance may improve. The future direction taken by the belief-behavior cycle may then be a function of myriad influences - whether the child incorporates his new experiential feedback into a modified pattern of self-statements, whether success experience are appropriately scheduled to induce and maintain a resistant and enduring "internal" belief pattern, and so on. (p.216)

In the past, the behavior analysis of phenomena proceeded and succeeded at the level of responses and environmental events. As the center of concern changes from such easily identified events, the likelihood of producing functional relations decreases. Clearly within the theoretical perspective espoused by Mahoney, the concern shifts from individual skills to vaguely identified individual beliefs, and in turn, the possibility of developing useful relations between variables diminishes. Thus reciprocity, a reasonable and possibly valuable concept, becomes a vague conception of the relations between conscious events and behavior-environment changes.

CONSCIOUS PRIVATE EVENTS

The appropriate role of conscious events in the analysis of behavior is another important area of dispute between radical behaviorists and cognitive behaviorists. As Skinner has frequently argued, the individual's verbal report of private events may reveal to the community at large the external events of which the behavior in question is a function. Unfortunately, imprecise conditioning operations produce the verbal repertoire for describing private events. Many times in the process of acquiring a verbal repertoire, the relation between private events and external events is lost. As a consequence, both the individual and community frequently fail to understand communications about private events. Speaking colloquially, however, the individual's verbal behavior can be used as an indication of that individual's current understanding about how he or she interacts with the environment (that is, why the person believes he acts as he does). But do those reported beliefs cause the individual to act in that specific manner? The quasi-mediated position of the cognitive behaviorists implies that beliefs, ideas, feelings, and so on do indeed cause one to act in a particular manner. But these
private events themselves must be accounted for: "To say that a man strikes
another because he feels angry still leaves the feeling of anger unexplained" (Skinner, 1953). Further, after the analysis of the antecedents of such
behavior, one must once again ask, what role do they actually play? Rachlin
(1977) has argued that conscious events do not cause behavior, but instead
tell about behavior/environment interactions. Similarly, Jaynes (1977), in
an extensive analysis of consciousness, suggested that consciousness is not
the same as thinking, but rather metaphorically represents the individual's
experience a la a road map. Although road maps contain much useful, often
essential, information, the road map per se does not cause the driver to
engage in any particular behavior; it simply provides information about the
alternatives. Upon analysis, the metaphors chosen by cognitive behaviorists
similarly lend themselves to a "road-map" or informational function for
consciousness rather than a causal one. For instance, Meichenbaum, in
discussing the internal dialogue, argues that it allows individuals to monitor
their thoughts, wishes, feelings, and actions. This monitoring in turn causes
them to behave in a particular manner. But to monitor means to observe or
record the condition(s) of a particular system at a particular time. One does
not say that a gauge measuring the changes of pressure in a system causes
those changes. On the other hand, an observer discriminating the reading on
the gauge may move to adjust some components of the system, thus chang-
ing the pressure. To elaborate, in the area of nuclear reactor safety, how a
technician reads the dials in the control room affects his or her behavior and
possibly our future. It is not, however, the dials that cause a particular
behavior by the technician, but rather the technician's prior experience and
training with regard to those specific dial readings. Further, those dials
must accurately reflect the condition of the system. The resultant difficul-
ties in the recent reactor breakdowns were not caused by the technician's at-
tributions, but by the fact that the dials did not accurately reflect the en-
vironment. Analyzing the problem from this perspective, while the tech-
nicians must know how to react to various dial readings, the major therapy for
nuclear safety would focus on making sure the dials accurately reflected the
conditions of the reactor. Similarly, it is likely that many reports of private
events do not accurately reflect environment-behavior interactions, and
again the therapy would consist of teaching the appropriate discriminations
to the individual. Because such an operation would involve the individual's
verbal behavior, it might be interpreted as "cognitive." The individual's ver-
bal behavior, however, changes, not because of some independent private
event, but because of the changes in behavior/environment contingencies.

The literature on cognitive self-instruction seems particularly susceptible
to the mislabeling of procedures modifying behavior/environment inter-
actions as cognitive ones. For instance, a recent study compared cognitive
self-instructions with contingency awareness and found that the self-
instructions produced greater change in the target behavior of aggressive delinquent adolescents (Snyder & White, 1979). Although conservative, the authors concluded that “this suggests that treatment focusing on both external contingencies for desired behaviors and internal control of behavior by the use of private speech may be a potent behavior change strategy for aggressive delinquent adolescents” (p. 234). The interpretation of these results as a function of cognitive variables or causes seems to be a misinterpretation of the procedures due to the verbal nature of the manipulations. The cognitive self-instructions group was trained to identify specific problem situations by emitting a verbal response chain and then to behave in a manner consistent with the instructions. The authors provide the following example: Situation—a cottage counselor says, “time to get up.” Verbalization—"Already, damn. It feels good to stay in bed, but if I get up I'll get the points I need for cigarettes. OK, just open my eyes, get up. Good, I made it.” Subjects were also reinforced with tokens for appropriate behavior. In contrast, the contingency awareness group simply discussed the various contingencies in the token system. Thus, the cognitive self-instruction group learned to respond to immediate and specific stimuli within the problematic situations, while the contingency awareness group lacked such rehearsed stimuli or responses. The difference does not appear to be one of behavioral variables versus cognitive ones, but again, to use Jaynes' (1977) metaphor, one of the scale of the map. The self-instruction group had the equivalent of a city street map, whereas the discussion group was given a correct but less specific road map for the state. It is easier to get around London with a street map of London than with a map of England that includes only the major streets of London. The verbal nature of the training operations and the label “self-instructions” led the authors to interpret the causal variables as cognitive. From a radical behavioral perspective, to be valuable, private events must tact (i.e., serve a naming function) or be discriminative for behavior/environment interactions. In summary, cognitive discriminative stimuli undoubtedly were involved in the observed changes in the adolescents' behavior. However, those factors developed as a function of behavior/environment relations and will continue to serve only so long as the relations hold.

SELF-CONTROL PROBLEMS

Rather than focusing an analysis of self-management on the private events of individuals, from a radical behavioral perspective, it appears more logical to begin with an analysis of those situations which cause individuals difficulties. It was suggested earlier that these situations be labeled self-control problems. The majority, if not all, of the situations where the in-
individual is said to have a self-control problem involve some difference between the immediate consequences of a response and its delayed consequences. Smoking is a good example of a response, the immediate consequences of which are positive for most smokers, but the accumulated delayed consequences of which are clearly negative. Smoking is further complicated because even when the delayed negative consequences occur, they are not easily discriminated by the individual. That is to say, not only are there no clear immediate aversive consequences, but the delayed consequences for each response (identified by medical research) are so small that they cannot be discriminated by the individual. Later, when consequences such as coughing, sore throat, and shortness of breath do appear, smoking has been additionally strengthened by other behavioral processes to the point where the response is still difficult to eliminate when the consequences change. A process that contributes to self-control problems is antecedent stimulus control. In the case of smoking, the response is easy to emit concurrent or in conjunction with other responses in a wide variety of settings. As smoking occurs consistently in many situations, these stimuli set the occasion for subsequent smoking. For example, many people smoke while drinking coffee. Because the two responses occur together, engaging in one may become a cue for the other. Later, when the smoker attempts to quit, the coffee provides powerful antecedent stimuli for smoking.

Another example of a self-control problem based on a difference between immediate and delayed consequences involves going to the dentist. This instance appears to consist of immediate aversive stimuli and larger delayed aversive consequences. Here the individual may not go to the dentist because the response is followed by some pain or discomfort and is therefore punished. Such small immediate aversive consequences are apparently sufficient to reduce the likelihood of going to the dentist until the delayed consequences of not going are felt. The resulting painful stimulation then forces the person to visit the dentist to escape that pain. If the individual had simply gone to the dentist in the first place, the delayed aversive painful consequences could have been avoided. These two examples indicate that the difference between the immediate and delayed consequences is a major variable in self-control problems.

To reiterate, in a self-control problem, there is some immediate consequence that has a controlling effect on the response, while there are later consequences for the response or alternative incompatible responses that have opposite effects from the immediate consequences. The student who goes out to drink beer with his friends instead of finishing a term paper is emitting responses that have immediate positive consequences (e.g., drinking beer, talking to friends, escaping the term paper), but that may also have delayed aversive consequences (staying up all night to finish the paper, turning in a poor quality paper, not getting it in at all, and/or receiving a
poor grade on the paper). Even though the student may swear he will never do that again (an apparent commitment response), it is likely that he will engage in similar responses in the future. If such behavior occurs often, we would say that this student has a self-control problem with studying. As was the case with smoking, this particular example involves immediate positive consequences and delayed aversive consequences. Most problems of overconsumption (i.e., eating, drinking, smoking) appear to fit this particular set of contingencies. Both component contingencies must be present to produce self-control problems. If it were not for heart disease, lung cancer, emphysema, and the like, few people would worry about smoking. Thus, smoking, would no longer be a self-control problem.

There are three other basic variations of these contingencies. A response may have immediate aversive consequences, but failure to make the response may have even larger delayed aversive consequences, as in the dental example. A similar set of contingencies are in effect when an individual whose initial social interactions have been punished in the past is, as a consequence, less likely to make social advances. Here the reduction of important behavior by small immediate aversive consequences may lead to the long-range loss of greater positive social interactions with an increased sphere of friends and acquaintances (i.e., if the individual had emitted the approach responses, they may have have led to the development of new friends and enjoyable activities). Finally, a response may produce a small immediate positive consequence, but not emitting that response and instead emitting an alternative response may produce a larger delayed positive consequence. Behavior such as saving money in small amounts may eventually result in the purchase of a large reinforcer, while spending that same amount immediately might produce only small reinforcers.

Although behavioral psychologists have tried to avoid analyzing phenomena in terms of nonresponding, it appears that nonresponding is an important component in analyzing self-control problems. In every self-control situation, the problem is a particular response that is either occurring or not occurring. As a consequence, it is important to examine the contingencies for both the occurrence and the nonoccurrence of the target response. The four sets of immediate and delayed consequences for the target response are summarized in table 2.1. The first two instances are situations where the self-control problem is the occurrence of the target response, while in the second two it is the nonoccurrence of a particular response that constitutes the problem. The contingencies in the table are identified in terms of both stimulus and operation; a response can affect either a reinforcing or an aversive stimulus.

An important feature of self-management is made explicit by these examples. The immediate contingencies involve small consequences, either
Table 2.1. Responding (R₁) and Not-responding (R₀) Alternatives in Self-control, and Consequences for Each Alternative. The Problem Response is Indicated by an Asterisk (*).

<table>
<thead>
<tr>
<th>Response</th>
<th>Example</th>
<th>Immediate consequence</th>
<th>Delayed consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>*R₁</td>
<td>Smoking</td>
<td>Minor reinforcing event</td>
<td>Major aversive event</td>
</tr>
<tr>
<td>R₀</td>
<td>Not smoking</td>
<td>No reinforcing event</td>
<td>No aversive event</td>
</tr>
<tr>
<td>*R₁</td>
<td>Spending money</td>
<td>Minor reinforcing event</td>
<td>No reinforcing event</td>
</tr>
<tr>
<td>R₀</td>
<td>Not spending (saving)</td>
<td>No reinforcing event</td>
<td>Major reinforcing event</td>
</tr>
<tr>
<td>R₁</td>
<td>Going to dentist</td>
<td>Minor aversive event</td>
<td>No aversive event</td>
</tr>
<tr>
<td>*R₀</td>
<td>Not going to dentist</td>
<td>No aversive event</td>
<td>Major aversive event</td>
</tr>
<tr>
<td>R₁</td>
<td>Making new friends</td>
<td>Minor aversive event</td>
<td>Major reinforcing event</td>
</tr>
<tr>
<td>*R₀</td>
<td>Not meeting new people</td>
<td>No aversive event</td>
<td>No reinforcing event</td>
</tr>
</tbody>
</table>


positive or negative, while the delayed consequences are all major but potential. Cases are well documented of individuals who smoked two packs of cigarettes a day throughout their adult life and who died of old age at 95 without any health problems related to smoking. Similarly, regular visits to the dentist will not guarantee the avoidance of serious dental problems.

A less obvious aspect of self-management follows from the nature of the consequences for the responses that need to be changed. The required direction of change is a function of the immediate consequences: when the immediate consequences are positive (e.g., smoking, or spending rather than saving), the target response needs to be decreased in frequency; when the immediate consequences are negative (e.g., going to the dentist, or fighting shyness), the target response needs to be increased. To accomplish these changes, the individual obviously must use different strategies. When decreasing the frequency of a response, a twofold approach appears to be effective. First, alternative incompatible responses which will produce reinforcement need to be found, and the individual must avoid situations that in the past were discriminative for the target behavior. In the case of increasing the frequency of a response, the environment must be analyzed and restructured to make both the occurrence and the reinforcement of the response more probable. (See the later section on teaching self-management for more details. Further, note that the intuitively obvious self-punishment and self-reinforcement approaches both have been rejected on the logical and empirical grounds presented earlier.)
THE CHANGING ENVIRONMENT

The analysis of the contingencies involved in self-control problems, not unexpectedly, suggests that the environment plays a major role in self-management. A logical examination of the functioning of the environment in regard to the solution of self-control problems does, however, indicate that the usual conception of the environment and the corollary assumptions about how to change behavior are in need of modification. To indicate how the conception of the environment needs to be changed, the common assumptions concerning the role of the environment must be reviewed. Presently, the authors of introductory psychology texts often begin the section on behaviorism and learning theory with the equation $B = f(E)$. The generally accepted translation of the equation is that behavior is a function of the environment. This, of course, is a difficult statement to argue with. It is also totally gratuitous, because it does not specify how behavior is controlled by the environment. Most writers then go on to give examples from laboratory research of how the responses of an organism in an experimental chamber may be changed by manipulating aspects of the organism's environment. These instances of behavioral principles are extremely powerful, and by the end of the exposition the author has built a case for what may be called the behavior-modification or controlling-environment model of behavior. Greatly oversimplified, the major assumption of this model is that to change an individual's behavior, you simply change that individual's environment. The student comes away with the impression that the environment is somehow a monolithic, immutable force that molds behavior irrespective of other factors.

The concept of the controlling environment is either explicitly or implicitly held by many psychologists both within and without operant psychology. What is wrong with this concept of the environment and behavior? Simply put, it is incorrect in its view of the environment. The usual criticism at this point is to say that the real environment is infinitely more complex than the laboratory one. That may be true, but it is not the critical error. The error is in how the typical laboratory environment is designed to be a primarily static one in which the organism's responses have no direct effect on the basic contingencies that the experimenter has scheduled. This is by necessity: in order for an experimenter to evaluate the effects of a particular variable on behavior, an experimenter must carefully control that variable and others. But the natural environment is not impervious to the effects of the responding organism; it changes.

At this point the reader may object that the animal's behavior does interact with the experimenter's. The experimenter designs the environment, monitors the animal's responses in that environment, and changes the environment when appropriate. These activities of the experimenter represent
a major advance in the methodology of the experimental analysis of behavior. This interaction of the investigator with the experimental organism is an important feature of inductive research (Sidman, 1960; Skinner, 1956a). Careful monitoring of the organism’s responses allows the investigator to manipulate an independent variable and directly observe the effects on the animal’s responding. Thus, the laboratory environment does change in a systematic manner related to the organism’s responses. But there are two differences between changes in the laboratory environment and those in the natural environment. The first is simply the immediacy of change. In the nonlaboratory situation, the relations between the individual and the environment are constantly and immediately changing in both small and large ways. This, of course, is mainly a difference of degree, but the importance of immediacy of a consequence contingent on a response is well documented. Similarly, it is likely that the immediacy of change plays an important role in the functioning of the natural environment.

The second difference is again one of degree and has to do with a behavioral interpretation of the concept of reciprocity. It is clear that the relations between the organism and its environment are dynamic and reciprocal. The environment changes the organism’s behavior, but it is changed by that behavior in turn. This is especially true for humans, where the important environment consists for the most part of other humans. In these situations, the organism-environment distinction changes with perspective: one individual’s responses most likely are another individual’s stimuli.

There is, of course, a similar reciprocal relation between the experimenter’s behavior and that of the experimental organism. But there is a form of insulation between the experimenter’s responses and the changes in the organism’s behavior; changes in the organism’s behavior are systematically transformed, quantified, and analyzed, and therefore may have an impact on the experimenter’s behavior only in remote and indirect ways. Although these processes may carry the weight of scientific method, they can lead to the view that changes in the environment are separate from changes in the experimenter’s behavior. The conclusion is that the environment has changed the organism’s behavior, but it ignores the complementary change in the environment (the experimenter’s behavior) produced by the changes in the organism’s responses.

Although this concept of the interaction between behavior and the environment is not a radical departure from current operant theory, the differences are important for the analysis of self-management. Skinner, in his analysis of operant behavior, has often focused on the effects of responses on the environment. One reason he selected the term “operant” was because the response operates on the environment. By implication, to operate means to affect, to produce results, to change. Therefore, this informal definition
of the operant implied that the response changes the environment (Skinner, 1953). In his more formal discussion of the operant, however, Skinner chose to give a heavier weight to the role of the environment. Here it is the environment that affects the response, that is, changes its frequency. Thus, the operant becomes a response whose future probability of occurrence is a function of its stimulus consequences. But again, in his discussions of countercontrol (Skinner, 1948; 1974) and self-control (Skinner, 1953), he takes the position that the individual can change his or her own environment. But Skinner contends that, in the ultimate, the environment determines behavior:

If this is correct, little ultimate control remains with the individual. A man may spend a great deal of time designing his own life—he may choose the circumstances in which he is to live with great care, and he may manipulate his daily environment on an extensive scale. Such activity appears to exemplify a high order of self-determination. But it is also behavior, and we account for it in terms of other variables in the environment and history of the individual. It is these variables which provide the ultimate control. (p. 240)

What is to be made of these apparent inconsistencies in Skinner's position on the role of the environment? The problems are resolved by recognizing that these statements represent different levels of description in Skinner's analysis of behavior. As a consequence, it is possible to hold as a major theoretical assumption that in the ultimate, it is the environment that controls behavior, but still to assert that in the day-to-day operation of the environment, the individual can change the environment by behaving.¹

Unfortunately, both critics and practitioners of the analysis of behavior too often focus on Skinner's statements about the environment as the ultimate source of control and ignore other aspects of his analysis of behavior. For the applied behavior researcher, however, Skinner's positions on countercontrol and on the ability of the individual to change the environment are as important as his assumptions concerning the ultimate role of the environment in controlling behavior. To elaborate, when someone is taught a new skill, two things happen: the individual's behavior is changed by an environmental manipulation, but it also becomes possible for the individual to change the environment. In self-management, augmenting an individual's ability to deal with the environment should be of more concern to the behavior analyst than changing behavior by manipulating the environment directly.

The behavior modification conception of the environment continues to be widely held because of its manipulative and explanatory power. When an experimenter places an organism in a particular environment arranged in a specific manner, it is an extremely powerful reinforcer for the experimenter
if the organism's behavior conforms to a predicted outcome. Likewise, the application to human problems of these principles and procedures derived from the laboratory has been extremely successful in many instances. Numerous examples of such successes can be found in the *Journal of Applied Behavior Analysis*, *Behavior Therapy*, *Behavior Research and Therapy*, and other journals. Also, there has been a very practical reason for the environmental emphasis in both laboratory and applied research: to date, it has been easier to manipulate the environment directly because more knowledge is currently available for isolating and manipulating environmental variables than for dealing with individual variables.

This position, however, appears to be reaching a point of diminishing returns as the sole basis for behavioral research and programs. An examination of many successful behavior modification research programs shows that they have involved powerful consequences in relatively constrained environments. For example, Lovas's (1973) research with autistic children used powerful reinforcers and punishers in an extremely controlled environment. This in no way negates the achievements of Lovas and his associates, but simply puts that research into the context of the behavior modification model. Violating the constraints and assumptions of the model greatly reduces the applicability of behavior modification procedures if innovative corrections are not undertaken. Reppucci and Saunders (1974) found just these sorts of difficulties in their research at the Connecticut School for Boys. Their initial conception of the project was to design an environment that they would control to "shape up" the boy's behavior. In designing their programs, they appear to have assumed that their work with the boys represented a closed system, in that no one would interfere with their control of the boys' environment. Unfortunately, the behavior of a variety of individuals—boys, administrators, politicians, and others—failed to match the investigators' expectations and impeded the operation of their controlled environment. Because they were unable to manipulate the environment as they had expected, they then concluded that the assumptions of the operant model about how to change behavior did not work and that what was needed was a new form of social psychology. Such an out-of-hand rejection of an operant approach appears inappropriate, because many programs, such as Achievement Place, have overcome these difficulties. In the Achievement Place program (Fliksen, Phillips, & Wolf, 1978), environmental changes are considered and adaptive self-management skills are taught. But as a consequence, this overall program and its procedures more closely fit the proposed model of the changing environment than that of the controlling one. Similarly, until the recent work on self-management procedures, the adult with minor to moderate adjustment problems who was still operating in the natural environment was generally outside the domain of behavior modification or behavior therapy. This was the case primarily
because the assumptions about how to change behavior (i.e., making systematic changes in the environment) could not be made to operate in that individual's environment. A further important but distinct issue, not adequately considered in most early behavior modification models, is the question of generalization. Clearly there is no guarantee that behavior changed as a function of controlling the environment in one situation will be maintained in subsequent situations. The problem of generalization of behavior modification programs such as token economies became an important theoretical and practical issue. But because it is not of central concern to this analysis, persons concerned with generalization should read Stokes and Baer (1977), Goldstein and Kanfer (1979), or Karoly and Steffen (1980) for detailed treatments of the issues.

In general, because the model used in much behavior modification research has not adequately considered the interaction between the client and the modifier, the method for dealing with problems in applied projects has been to attempt to gain more control of the environment. As indicated earlier, however, such attempts have been counterproductive. Because of its emphasis on the reciprocal interactions between organism and environment, an analysis of the environment as proposed here makes it possible to anticipate these difficulties and to develop noncoercive procedures for dealing with them. For example, when the teacher is no longer considered an imperious controlling environment for the children in a class, the teacher will be taught in advance how to respond appropriately to the countercontrolling responses of the students, the principal, and other teachers. The logic of a changing environment and the corollary emphasis on the individual's ability to change the environment is a major premise of a behavioral model of self-management.

Finally, the conception of the environment presented here does not, in the last analysis, question the Skinnerian assumption that the environment controls behavior, but rather questions the degree to which someone can directly intervene in the environment to change behavior. The distinction can be illustrated by considering the problems presented to the psychologist by a behavior-problem child versus a delinquent adolescent. In the case of the younger child, it can be (and has been) reasonably assumed that the child's parents and teachers control a significant portion of his or her environment. The strategy typically adopted in such a situation is to teach the parents and teachers how to modify the child's behavior. The success of such an approach is well documented. On the other hand, a number of investigators have ruefully found that such a strategy has little chance of success with the adolescent. The environment of the adolescent is not as circumscribed as that of the young child. No single adult or set of adults control all or a major portion of the adolescent's environment; a wide variety of consequences are available from a heterogeneous peer group. Also, the adolescent's abili-
ty to engage in countercontrol behaviors is much greater than that of the young child. As a consequence, the intervention strategy must change from a behavior modification focus on directly changing the environment to change behavior, to one of changing behavior to modify the broader patterns of behavior/environment interactions. This strategy may be called indirect behavior modification or, in this instance, self-management training.

For indirect behavior modification, or self-management training, the environment must be viewed as consisting of two parts, that of the therapeutic setting and that of the larger environment where the new behaviors must be maintained. In the therapeutic environment, the therapist has much less powerful techniques available to influence behavior, modeling, logical analysis, and social reinforcers and therefore, somewhat paradoxically, must teach clients more powerful techniques for modifying their own behavior: self-management skills.

A MODEL OF SELF-MANAGEMENT BEHAVIOR

The preceding sections have detailed the differences between a radical behavioral perspective on self-management and that of other approaches. It is now time to specifically outline the implications of these differences for a model of self-management. Self-management is the ability of the individual to interface his or her behavior with the environment. Self-management, as conceptualized in this manner then, is simply the application of behavior analysis principles and procedures to modify the behavior/environment interactions of the individual by the individual. That is, rather than behavior modification being viewed from the perspective of the environment, the person whose behavior is being changed and the person doing the changing are one and the same. The target of the analysis and modification at any one time can be the individual’s response repertoire, his or her environment, or frequently both.

The following model of self-management behavior involves some basic assumptions about the environment implicit in the previous discussion which, for clarity, will be made explicit here. The abilities to analyze, modify, and evaluate behavior/environment interaction will not be utilized unless there are sufficiently good reasons to do so. That is, motivational contingencies for self-management responses must be present in the environment. Negative reinforcement (escape or avoidance of some aversive condition) was suggested by Skinner (1953) as the major reason for engaging in self-management behavior. People frequently have self-control problems because they lack the required skills to deal with those problems. However, occasionally an individual will simply lack the “motivation” to engage in self-management responses. Irrespective of the theoretical inter-
pretation of this lack of motivation, in those instances, the procedures proposed here will be ineffective. Further, if the new behaviors (products of self-management efforts) do not make contact with appropriate contingencies, they will not be maintained. Consequently, it is assumed in the following treatment of self-management that the proposed skills will all be developed and maintained as a function of the individual's interaction with his or her environment.1

The most important component of a behavioral analysis approach to changing behavior is reinforcement. A central task of self-management, then, is to learn to analyze the environment in terms of reinforcement contingencies. Catania (1976) interpreted the research on self-reinforcement in terms of discrimination. Simply put, he argued that the self-reinforcement per se is largely peripheral and that the important component is learning to discriminate when a response is good enough (appropriate) that it will eventually be reinforced by others. Returning to the example from Skinner, the student may indulge himself in some reinforcing activity after completing a task because he has learned to discriminate when that work will be reinforced by others. The interaction of the individual's behavior with the consequences in the larger environment maintains both the working behavior and the "self-reinforcement" behavior. From this perspective, the first component in self-management is the ability to discriminate (analyze) the various behavior/environment interactions in one's own life. Without this set of analytical responses, the individual cannot effectively utilize any of the other self-management skills. The major behavior for analysis in self-management is self-observation. Self-observation can consist of the systematic recording of behavior and its antecedents and consequences to analyze the behavior/environment interdependencies or simply noting another person's reaction to a particular response or set of responses as a way of determining how to interact with the person. The individual with many self-management responses is skillful at analyzing his or her own behavior and that of others. An important part of analyzing the other person's responses is the ability to understand what things reinforce the person's responses. The individual can then discriminate the various contingencies for both his or her own responses and those of others in the environment and can emit the appropriate responses.

Related to the ability to observe one's own behavior/environment interactions is the recognition of mutual influences of the individual's responses on the environment and the effect of the environment on his or her responses. This, of course, is again the concept of reciprocity. In the case of self-management, it refers, in the first person, to the recognition that how I behave affects the way people react to me, and vice versa. Although this may appear to be an overly simple point, people vary tremendously in the degree that they understand it. In general, individuals characterized as lack-
ing self-management skills or having self-control problems display little or no understanding of this essential interdependency.

Finally, an important product of the ability to objectively observe one's own behavior is the understanding of personal, private events. The individual skillful at self-observation can discriminate the relations between behavior/environment interactions and private feelings. The individual who can recognize the source of his or her feelings of anger in the behavior/environment interplay has a much greater chance of dealing with the problem than the individual who can only report feeling angry.

The person who possesses these analytical skills will then be able to recognize the various immediate and delayed contingencies involved in self-control problems discussed earlier. The student's recognition that he or she is not studying enough because other incompatible responses are immediately reinforced by some friends, while the consequences for studying are delayed, constitutes the first step in solving the self-control problem. Similarly, the adolescent's ability to understand that some friends provide the immediate consequences for illegal drinking by encouraging and reinforcing those behaviors may then be able to take steps to change the problem behavior. The person characterized as having many self-management skills will be able to analyze the immediate and delayed contingencies in the environment and deal with self-control problems accordingly.

Obviously the ability to analyze would do the individual little good without the complementary skills of being able to modify behavior/environment interactions. How does one modify the personal environment? Although a wide variety of procedures might occasionally be used, the core of modification skills consist of the reinforcement, extinction, and shaping of other people's behavior and restructuring of the physical/psychological environment. An example of environmental change by reinforcement and extinction is provided by special-education students who were taught to change their social and educational environments (Graubard, Rosenberg, & Miller, 1974). Special-education children often interact with a hostile environment that has labeled them deviant and, therefore, as people who can be treated with less respect, subjected to more ridicule, or given more negative comments. Graubard et al. taught a group of special-education children some simple reinforcement and extinction techniques. They showed them how to reinforce the positive comments of teachers and "normal" students. For example, the children were taught to make the "uh huh" ("I understand") response when a teacher carefully explained something to them, and to thank the teacher and praise the teacher's efforts. On the other hand, the students broke eye contact after the teacher's negative comments and were generally unresponsive to them. Similar procedures were used with other students in the school. These procedures involved the systematic manipulation of the therapeutic environment, which in turn made the
students more skillful in manipulating their environment. For instance, when the special-education children used their new social skills, there was an increase in positive comments and approaches and a complementary decrease in negative ones by the teachers and "normal" students toward the special-education children. The special-education students, by changing the way they used reinforcement and extinction, changed their environment and made further positive changes possible. In addition, their changed behavior changed the teacher's environment and that of other students, because the special-education children were now a source of social reinforcers. It is appropriate to reiterate here that such an approach will only succeed if the new behaviors fit the environment. If, for some reason, there had been other powerful contingencies on the behavior of the teachers or other students to maintain their negative responses to the special-education students, then the procedure would not have worked. Graubard et al. (1974) appropriately labeled their approach an environmental or ecological one. Because the special-education students were not taught how to analyze their environment and behavior, the Graubard et al. study is not an example of self-management per se. Rather, it represents the successful implementation of one component of the self-management model. Individuals can, however, be taught these skills within the context of self-management training with similar positive results (e.g., Gross, Brigham, Hopper, & Bologna, 1980).

In summary, one set of procedures utilized to modify the environment, and thus the individual's own responses, consists of the techniques of behavior modification. An additional important set of self-management skills not usually considered within the context of behavior modification or behavior therapy involves restructuring the physical/psychological environment. Skinner's initial analysis of self-control focused heavily, not on consequences per se, but on environmental structuring involving either the physical or psychological environment. It was assumed that the individual could arrange the environment so that the probability of particular responses would be increased or decreased. In line with the earlier analysis of the environment, he further assumed that if these changes were successful, there would be environment consequences to maintain the new behaviors. Although this approach to self-management has not been systematically examined with humans, there is animal and anecdotal evidence to support the analysis.

For example, Kanfer and Phillips (1970) relate the story of Odysseus and the sirens as an instance of arranging the physical environment to prevent a particular response. Odysseus, of course, plugged his sailors' ears with wax and then had himself lashed to the mast so that he could hear the sirens' song without losing his life or his ship. A more recent anecdote involves a personal problem solved by a rearrangement of the environment. After many years of setting up reinforcement or punishment contingencies for the
automobile riding behavior of our children with limited success, an analysis of the environmental situation suggested an alternative approach. Although the goal of strong familial affection that transcends situational variables is a desirable long-term objective, a realistic assessment of the probability of such behavior under the stimulus situation of a crowded back seat suggests it is extremely low. The obvious solution (obvious is a post hoc term, it took many years of trying contingencies before a restructuring approach was taken) was simply to change the adult/child seating patterns. Now the driver and one child sit in the front while the second child and adult sit in the back.

Many miles have been covered in relative comfort and peace maintained by small reinforcers, in contrast to the small amount of control exerted by contingencies employed in the past. The difference is that the change in the environment eliminated the “accidental” kick or bump, the “friendly” poke, and so on which had led to retaliation and escalated verbal and/or physical violence. These behaviors were the key to the self-management problem. When they occur, the probability of disruptive inappropriate responses is increased irrespective of whatever consequences may be programmed. Recently, to check if the observed changed behavior was due to increased maturity on the part of the children, a brief reversal was instituted. While they did behave somewhat better than in years past, there was nonetheless an easily discriminated increase in disruptive behaviors.

This quasi experiment convinced the author that environmental restructuring can often be more efficient and effective than the manipulation of consequences. Similarly, the impact of environmental changes on behavior can be seen in the simple instruction to smokers to keep all cigarettes and ashtrays put away before and after smoking. The manipulation changes the environment by removing stimulus factors that in the past had cued smoking and it introduces a delay between the “desire” to smoke and the availability of a cigarette. These small steps consistently result in a 25 to 35 percent reduction in the smoking frequency below baseline (Danaher & Lichtenstein, 1978; Lemme, Note 1). Certainly, additional changes are required before the individual can stop smoking, and the environmental restructuring must be maintained by appropriate contingencies. Nonetheless, small environmental changes can play an important role in the solution of self-control problems.

Rachlin’s research on the commitment response with animals provides more solid experimental evidence for this approach. The focus of analysis is on commitment responses. These responses commit the organism to engaging in a response that is incompatible with the problem response. In the standard situation, the consequences for the two available responses will result in the organism emitting the problem response. But in the commitment response approach at an earlier time, the organism has an opportunity
to emit the commitment response before the onset of the situation in which the problem response typically occurs. The commitment response is followed by a different set of stimuli in the presence of which only the alternative (desired) response can occur. The key to this interpretation is that preferences vary over time. The alcoholic, while sober, is more likely to make a commitment to abstain from drinking if the next opportunity to drink is sometime in the future than if the opportunity is immediately at hand. Thus, if the environment can be arranged appropriately, the organism will emit the commitment response and the desired response in turn. Rachlin and Green (1972) demonstrated these relations in an experiment in which pigeons, when given the choice of responding for immediate 2-second access or delayed 4-second access, preferred the immediate consequence. From an analysis of the combined gradients of delay and magnitude, it was predicted that if the pigeons were forced to make the choice 10 seconds in advance of the opportunity to earn an immediate or delayed reward, they would choose the larger but delayed reward. In general this prediction was confirmed. Rachlin and Green suggest that when invented by an individual, the commitment-response paradigm may be a viable self-management technique.

Finally, the psychological ecology literature provides a rich body of research bearing directly on how to effect behavior by structuring the environment, research that is largely ignored by behaviorists. Although the position and research are too extensive to cover here, the essence can be summarized as follows: More accurate prediction of behavior in a particular situation can be made from knowledge of the behavior setting (physical/psychological structure) than is possible from knowledge of the individual characteristics of the person entering that setting. Specifically, as Barker (1968) has argued,

While it is possible to smoke at a Worship Service, to dance during a Court Session, and to recite a Latin lesson in a Machine Shop, such matchings of behavior and behavior settings almost never occur in Midwest (Oskaloosa), although they would not be infrequent if these kinds of behavior were distributed among behavior settings by chance.

In short, the physical/psychological environment plays a major role in determining behavior, and behavior change can be facilitated by environmental restructuring.

Returning to the self-control problem of the student who was having difficulty studying, how might the environment be modified to deal with the problem? First, applying the environmental restructuring principle, the student would not set some contrived self-reinforcement contingency. Rather, the effort would be directed at increasing the likelihood that he or she would
enter a setting such as the library where studying is a high-probability response. Such a change in behavior could be accomplished by identifying a friend who regularly studies in the library and asking to study with that person. Next the student should attempt to reinforce the friend for being a study partner. Such reinforcement will in turn increase the likelihood that the friend will reinforce our student’s studying behavior. The outcome of the suggested steps would be for our student to regularly study in the library with his or her friend. These proposed steps do not represent a piecemeal approach to the problem; rather, each step can be derived from the principles outlined in the analysis of self-management skills and self-control problems. Although different problems and environmental situations will require different sets of responses to change the behavior/environmental contingencies, those responses will also follow from a similar process.

TEACHING SELF-MANAGEMENT SKILLS

If one accepts the arguments concerning the analysis of self-reinforcement (and, by implication, self-punishment) and private events, then self-management training should not focus on those topics, but rather on how to analyze and restructure the personal environment. Studies by individuals at the Self-Control Research and Training Unit, Washington State University (Niemann & Brigham, Note 2; Gross, Brigham, Hopper, & Bologna, 1980; Brigham, Hill, Hopper, & Adams, 1980; and Contreras, Brigham, Handel, & Castillo, Note 3) have explored this approach. To date, most of the work has been programmatic or developmental in nature, concerned with the production and testing of materials and procedures. The evolving program does not emphasize self-management techniques such as self-recording per se, but rather how self-recording can be used to analyze and understand behavior/environment interactions. First and foremost, students are taught that behavior is lawful and orderly. Further, the student learns that by manipulating aspects of the environment, it becomes possible to change behavior, both their own and that of others. The program begins with a section on defining and measuring behavior/environment interactions. Discussions and demonstrations are then followed by an exercise similar to the example below.

A frequent source of friction between teenagers and parents is the use of the telephone. It is suggested to the students that they could use these new skills to examine this problem. The idea that they can actually collect information (data) relevant to this problem and then use the information to help solve the problem comes as a considerable surprise to most of them. And that, of course, is one of the the major functions of the exercise—the demonstration that the techniques they are learning are of practical value.
Definitions and recording procedures are developed, and the students proceed to collect data. After several observations are collected, the students analyze them and try to draw some conclusions. The data may then be used to design an informal behavior-change plan or they may form the basis for systematically negotiating a contract with the student’s parents concerning the use of the telephone. Other sections of the course are treated in a similar manner. First there is a reading with discussion, followed by demonstrations and practice, and finally the student engages in some form of exercise related to the main procedures of the section. Thus a primary objective of the program is to give the student actual experience in both analyzing and manipulating behavior/environment interactions. It is expected that skills acquired in this manner are more likely to be utilized by the students in their “real” environment.

Using this approach, juvenile delinquents have learned to reduce or eliminate their delinquent behavior, chronically unemployed youth have successfully acquired jobs, and students regularly in trouble at school have reduced the frequency of responses which in the past had led to detentions and suspensions. Maintenance of treatment effects, of course, is of major concern in any program and constitutes part of the rationale for developing self-management training programs (i.e., the individual so trained should be able to independently deal with the specific target behaviors and related ones). A 1-year follow-up of the behavior-problem students involved in the Brigham et al. (1980) study showed that 14 of 19 students were no longer considered behavior problems by their teachers, and as a group, the reduction in detentions received in the 1980/1981 academic year compared to 1979/1980 was significant at the .001 level. Recently, Gross (Note 4) used a similar set of techniques. In short, a wide variety of self-control problems have been successfully dealt with using self-management training.

To reiterate, the strategy in each case was not to exclusively teach techniques directly related to the problem behaviors, but instead to teach the full range of self-management skills outlined in the preceding section. Training takes place in small groups and involves didactic instruction based on Managing everyday problems: A manual of applied psychology for youth, modeling and practicing of specific skills, and conducting one to three personally designed behavior modification and/or self-management projects. The student attempts to analyze and modify the personal behavior problem(s) only after having mastered the prerequisite skills. While the student is learning all of the various techniques, there is a continuing focus on behavior/environment interactions. As argued earlier, no matter what skills are taught, they must interface with the larger environment beyond the training setting to be useful and to be maintained.

The model of self-management skills presented here is a straight-forward one. It emphasizes the individual’s ability to discriminate and modify
behavior/environment contingencies and interactions, rather than focusing
on complex and elegant cognitive processes or hypothetical constructs. The
positive results obtained with the self-management model and the pro-
cedures described here do not, of course, demonstrate that this analysis of
self-management is correct. It will be necessary to test the procedures de-
rived from a fully elaborated behavioral model of self-management against
alternative models and procedures. Further, it must be demonstrated that
the behavioral model can generate unique analyses and treatments for self-
management problems before it can be asserted that it is both a logical and
empirical treatment of the phenomenon of the self-management area. Such
convincing evidence must await the theoretical analysis of the research
reported in the remainder of this volume and future research inspired by the
volume.

NOTES

1 The term "ultimate" has been used here to parallel Skinner's (1953) usage. Recently,
however, "momentary and distal" or "long-term" have been used to make the same func-
tional distinction between "day-to-day" and "ultimate."

2 I recognize that few people who are judged to display self-management skills would
discuss their skills in terms of the model proposed here. However, it is unlikely they would
correctly use the language of more cognitive models either. In general, people are not well
trained in describing their own or another person's behavior. But that is not the point here.
The argument concerns the processes controlling the development and maintenance of these
behaviors, not whether the individual can correctly identify them. It is argued that the pro-
posed model is a parsimonious way of interpreting self-management skills.

3 Other authors have treated the issues related to motivation and the distinction between
knowing and doing in similar but sufficiently different ways that the reader may wish to ex-
amine (e.g., Goldiamond, 1965; Karoly, 1981).

4 Although the anecdote is presented to illustrate environmental restructuring per se, it is ap-
propriate to ask whose self-control problem was it? From the perspective of this paper, it
was both mine and my children's. Their inability to meet the requirements of my
"reasonable" contingencies and ride without the various forms of fighting frequently lead to
my making loud threats of bodily harm and occasionally carrying them out. Since I prefer
to characterize my behavior as calm, logical, and reasoned, such responses on my part were
personally aversive. Thus, the patterns of responding to the immediate situation by all of us
represented personal self-control problems.

5 Rather than presenting much detail here on the actual materials and procedures used in
the research on teaching self-management, the reader is referred to the papers cited. Also,
Managing Everyday Problems: A Manual of Applied Psychology for Youth are
available from the Self-Control Research and Training Unit, Department of Psychology,
Washington State University, Pullman, Washington 99164.

REFERENCE NOTES

State University, Pullman, Washington 99164.

REFERENCES


