A Behavior-Analytic View of Psychological Health

William C. Follette, Patricia A. Bach, and Victoria M. Follette
University of Nevada, Reno

This paper argues that a behavioral analysis of psychological health is useful and appropriate. Such an analysis will allow us to better evaluate intervention outcomes without resorting only to the assessment of pathological behavior, thus providing an alternative to the *Diagnostic and Statistical Manual* system of conceptualizing behavior. The goals of such an analysis are to distinguish between people and outcomes using each term of the three-term contingency as a dimension to consider. A brief review of other efforts to define psychological health is provided. Laboratory approaches to a behavioral analysis of healthy behavior are presented along with shortcomings in our science that impede our analysis. Finally, we present some of the functional characteristics of psychological health that we value.

Key words: psychological health, behavior analysis, primary prevention, psychotherapy, assessment

Why should behaviorists care about the issue of psychological health? After all, those of us who do applied work come from a tradition in which symptom reduction of problems such as enuresis, self-injurious behavior, and conditioned fear responses seems to be a large enough task to occupy our energy. Everyone can agree that when problems like these are eliminated, a good day's work has been done. However, not all outcomes are this clear-cut. The social and scientific climate has changed since the heyday of behavior modification as exemplified by Ullman and Krasner (1965), and behavior analysts are increasingly recognizing the need for a more comprehensive view of the study of behavior change in adult outpatient clinical populations. As a result, the attention of behavioral analysts has turned to the issue of identifying the theoretical and pragmatic bases of the elements of psychological health (Biglan &

Metzler, 1992; Dougher, 1992; W. Follette, V. Follette, Compton, & Bach, 1992; Hayes, 1992). This paper will outline some of the conditions that make this effort necessary and suggest methods for better understanding psychological health.

Today behaviorists treat a more diverse and subtle set of problems in adult outpatient populations than they did 30 or more years ago. In this context, showing changes in individually targeted behaviors is a less adequate measure (e.g., than in cases of head banging). It is also becoming clear that one-to-one interventions are too expensive and impractical to be the mainstay for behavior change and that prevention programs will become increasingly important. Additionally, behaviorists have failed to meet the challenge of the medical model of psychopathology that is exemplified by the advocates of DSM III–R (American Psychiatric Association, 1980, 1987) and are losing scientific and clinical credibility (Follette, Houts, & Hayes, 1992; Hayes & Follette, in press). The convergence of these factors places a burden upon behaviorists to present their data in useful ways that will allow a more meaningful comparison of the efficacy of behavior-analytic interventions and its alternatives.

THE PROBLEMS

Distinguishing outcomes and the evaluation of efficacy. When behaviorists dealt

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Address correspondence concerning this article to William C. Follette, Department of Psychology, Mail Stop 298, University of Nevada, Reno, NV 89557.

with specific behavior problems in settings in which considerable control of the environmental contingencies that affected the frequency of problematic behavior was possible, the power of behaviorally based interventions seemed obvious. But when behaviorists moved into the more traditional domains of psychotherapy, they have been less precise and shown less scope when trying to address what it means, for example, to treat depression successfully. As a result, funding agencies, based on a philosophy of syndromal classification, set the tone for the kinds of data that are required to evaluate outcome (Elkin, Parloff, Hadley, & Autry, 1985). Consider the following hypothetical scenario that is emblematic of the type of problem faced when one attempts to assess treatment outcome using traditional methods.

Two people are treated for depression after having a relationship end. At the end of therapy, both clients no longer meet the DSM III—R criteria for major depression as measured by mere frequency counts (First, Frances, Widiger, Pincus, & Davis, 1992; Hayes & Follette, 1992) and both have Beck Depression Inventory scores equal to zero.

As the clients end therapy, their departing statements to you are:

Client A: I have worked through the pain and I can now live with it. As much as it hurt, I know I can survive, and sharing my life with someone else again is very important to me.

Client B: I have worked through the pain and now I can live with it and get on with life. But I am never going to get involved like that again or permit myself to be so vulnerable and hurt.

This scenario raises two important problems. First, we currently have no way of distinguishing between these two outcomes, even though the future of these clients is likely to be very different. Neither client is depressed by conventionally used standards (Elkin et al., 1985). The best theoretical outcome a therapist can document is merely the absence of symptoms of pathology. Thus, any therapeutic approach that can reduce the signs of pathology to a given level achieves an unassailable degree of efficacy that is due merely to a floor effect in our measure-

ment and assessment procedures. The best theoretical outcome one can currently attain is the elimination of symptoms, because there is no theoretical basis for distinction on any additional grounds of psychological health. Yet the nature of how these two clients' future reinforcement communities will operate is obvious, and the responses to the loss of a significant person in their lives are completely different.

Behavior as pathology. Though behavior analysts can, in principle, apply a functional analysis to any behavior, we currently focus on pathology as defined by DSM III—R. DSM III—R characterizes clients and outcomes in terms of the degree of pathology they possess. Behavior analysis has failed to provide an effective alternative that identifies their ability to function effectively in the world (Hayes & Follette, 1992, in press). Clients become the "depressive" or the "borderline" rather than a complete person, because that is all we currently know how to talk about when we describe an outcome.

Prevention. It is becoming increasingly clear that one-to-one therapy is too inefficient and too expensive to remain the intervention of choice in the future. Primary prevention needs to replace secondary or tertiary treatment programs. However, primary prevention programs need to develop a more sophisticated model of behaviors that protect individuals from developing pathological behaviors.

Behavior analysts have recognized the utility of identifying and constructing behaviors that are useful from those already present in a repertoire, rather than merely eliminating problem behaviors (Goldiamond, 1974; Hawkins, 1986; Schwartz & Goldiamond, 1975). If we had a basis for identifying healthy behaviors, we would be able to work with clients before problems developed to strengthen competing behaviors that would preclude later pathology. On a larger scale, Biglan (1993) describes a strategy for community interventions that includes a large prevention component. He emphasizes the need for research and evaluation, be-

cause there is relatively little existing information to guide this endeavor. In an environment with conflicting and changing contingent control, it is not yet possible to specify what repertoires to build to best protect an individual or community from developing maladaptive behaviors. An analysis of healthy, protective behaviors may help community interventionists plan how to establish the healthy environment a community seeks.

VALUES AND GOALS

Any discussion of psychological health immediately invokes complex issues about values and goals. It is not our intention to debate values and goals about health in this paper. Disagreements about values are just that—disagreements. There is little basis for deciding whose values are the “right” ones without resorting to dogmatism (Hayes & Hayes, 1992). For the time being, if others choose different values about what should constitute psychological health, the therapeutic landscape will be all the richer for it.

Goals are a different matter. Although adopting the values that one finds interesting can be done without having to defend them, it is important to evaluate who or what approach has better attained a set of goals. If everyone chooses idiosyncratic values and goals, then at the end of the process one faces the possibility of everyone disagreeing about how to assess psychological health with no way to counter the argument: “I like my findings and you can like yours—so what if we come to seemingly opposite conclusions.” Such philosophical relativism would prevent behavior analysts who study psychological health from influencing the larger scientific community. This problem can be avoided if the criteria for evaluating the success of specific, shared goals could be agreed upon before everyone goes on about the business of their research (Follette, Houts, & Hayes, 1992).¹ All efforts to define psychological illness or health are subject to change as the culture changes. The best we can do is construct definitions and procedures

within the context of a particular time and place. The first step, however, is to enumerate the goals for the study of psychological health. We have two explicit goals.

Goal 1. Our first goal is to apply behavioral principles to the analysis of psychological health. That is, we wish to be able to put forth a conceptualization of psychological health that relies on traditional behavioral principles that would imply a method for assessment.

Goal 2. From a behavior-analytic perspective, we want to devise a methodology that will allow us to differentiate therapeutic outcomes like those described in the hypothetical clinical example described earlier. This goal does not place a value on the different outcomes just yet. For the time being, we want to be able to characterize the differences between Clients A and B without yet saying one is a priori better than the other. The first step is to be able to conceptualize the differences, measure them, and then relate those differences to longer term outcomes.

Having stated our goals, we will state some of our beliefs (values), so that the goals can be put in some perspective. One important belief is that it is legitimate to study psychological health in the first place. Behaviorists have been leery about imposing their values on others, partly in response to criticism of the social control implied or advocated by behavioral engineering (Skinner, 1948). However, the issue of what to value has long been put to rest by the adoption of the DSM system that codified what is abnormal. There is no more (or less) value associated with studying psychological health

¹ Although we have no suggestions for resolving differences among scientists concerning what values to adopt, it is possible that vastly divergent values would preclude ever agreeing upon a common set of goals and, thus, evaluation criteria. We mention this to point out that it is sometimes too easy to adopt values that lead merely to scientific self-stimulation by comforting oneself with the notion that values cannot be challenged by others. Part of our obligation as members of a scientific (verbal) community is to have something meaningful to communicate.

than there is in applying diagnostic categories to clients or research subjects. Notions of health and disorder are human enterprises subject to the foibles and vagaries of the sociocultural influences that affect all scientists. Studying the history of the DSMs indicates just how subjective the process of defining mental illness actually is (Follette, Houts, & Hayes, 1992; Wakefield, 1992a), and it should be no surprise that sociocultural influences shape our view of psychological health as well (Bryant & Veroff, 1982).

A second belief behind this endeavor is that the lack of a theory of psychological health impedes our understanding of how to help individuals and cultures change. We find this deficiency undesirable. Since the Smith and Glass (1977) meta-analysis demonstrating the efficacy of psychotherapy, many subsequent meta-analyses have tried to find differences among treatments for a variety of conditions and persons. For the most part, meta-analysts have concluded that therapies are essentially equivalent (Shadish & Sweeney, 1991).² Although some of these findings may be due to methodological problems in the meta-analytic procedures themselves (Shadish & Sweeney, 1991), the floor effects due to inadequate assessment procedures, cited above with our hypothetical clients, make the problem of meta-analysis more difficult by obscuring any differences that may exist.

In the area of ability and intelligence testing, there is a long, albeit controversial, history of measuring a complex construct that yields useful planning infor-

mation for a broad range of the attribute. What we wish to see is a measurement procedure that allows a similar range of scores that can provide information about persons other than those who have intellectual problems. If the developers of IQ tests had taken the same approach to conceptualizing what they intended to measure as those who deal with traditional psychopathology, there would be no identifiable differences between someone with an IQ of 71 (the cutoff score for a clinical diagnosis and a nonclinical score) and someone with an IQ of 129. Most people, regardless of their appreciation of or antipathy toward IQ tests, would admit that two individuals with such different scores would have a number of potentially important differences.

Third, we believe that the notion of psychological health is one that can have beneficial effects for people who make use of psychological services by removing the negative labels associated with perceiving clients only in terms of diagnostic categories. A refined notion of psychological health might allow people to seek services to learn skills that might aid in the prevention of difficulties, rather than requiring a diagnosis before applied behavioral scientists have anything to offer.

Finally, we recognize that psychological health is a very complex issue that will not be adequately characterized in the near future. But at the very least, a recognition of this complexity dictates that we attempt to conceptualize and measure health using multiple methods.

A BRIEF REVIEW OF THE CONCEPT OF PSYCHOLOGICAL HEALTH

Attempts to define adjustment or well-being are not new. Personality theorists from many different theoretical perspectives have ideas about what characterizes a well-adjusted individual. Some of these conceptions are well developed and have empirical evidence to support them, whereas others are less developed. All have many critics, and few, if any, have demonstrated utility in helping to plan

² We are not saying that we agree with the finding that all therapies are equivalent. Meta-analysts have found differences among treatments, often favoring behavior therapies, but then proceed to "control" for factors such as therapeutic allegiance or reactivity of measures until the differences disappear. One must examine the suppositions of the meta-analysts before one accepts their conclusions. There is also the issue of statistical power that is thus far unaddressed in the meta-analytic literature. Although there is reason to believe that meta-analyses are more powerful than conventional statistics because each data point is based on multiple subjects, a quantitative analysis of power for meta-analysis does not yet exist.

interventions that enhance psychological health (Hayes, Nelson, & Jarret, 1987).

The first complete theory of adjustment was put forth by Freud. To him, a well-adjusted person was one who had passed through each psychosexual stage without fixation or conflict. The healthy individual is ruled by a strong ego, rather than by the id or the superego, and strives to work, love, and play. Without belaboring the oft-enumerated criticisms of Freud's work (Grunbaum, 1984), psychoanalytic theory lacks empirical support, and is based on retrospective, post hoc explanations of the behavior of a remarkably small number of subjects. Further, psychoanalytic theory does not explain how current environmental conditions function as independent variables affecting adjustment. Freud also believed that the appreciation of work, love, and play is an important characteristic of the nonneurotic individual. Freud is describing classes of reinforcers that can all function to the benefit of an individual.

In contrast, trait theorists, such as Allport, Cattell, and Eysenck, describe a well-adjusted person as one who has a greater balance of positive than negative traits, or at least the balance of a trait is in the positive direction. These persons should take advantage of their strong traits and minimize the impact of negative traits, and show a balance of many traits rather than being dominated by a single one or two (Allport, 1961; Cattell, 1965). Trait psychologists have used the scientific method in developing some of their theory, and their personality measures do allow us to compare one person to another. However, there is little agreement among different theorists about which traits are most important and how traits originate, and they differ about whether a personality construct should be regarded as a single trait or as an aggregate of many traits. Trait theories are also criticized for being descriptive rather than explanatory. From the behavioral perspective, trait theories are problematic, in that variability in responding is attributed to trait rather than to situational variables, and there has never been a satisfying explanation of inconsistencies

across situations. There is also a logical problem with trait theories. Presumably, traits are caused by some set of conditions that are not generally specified. Traits are then used to explain behavior. The result is that effects (behavior) are explained by other effects (traits), but the initial (causal) link in the chain is left unexplained. Yet from the features described, the behaviorist can see that a value has been placed on having a broadly based behavioral repertoire or multiple means of acquiring reinforcement. This fits well with the findings of Lewinsohn and his colleagues (Lewinsohn, Biglan, & Zeiss, 1976), who have provided evidence that when contingent reinforcement decreases, one is at risk for becoming clinically depressed. Such a situation is more likely to occur when one has limited sources of reinforcement.

In humanistic psychology, as described by Maslow, a well-adjusted person is an individual who is self-actualized or at least is meeting higher order needs and moving in the direction of self-actualization (Maslow, 1954). Rogers would view a well-adjusted person as one who accepts him- or herself, both positive attributes and flaws, and whose experience of the world is closely matched to his or her self-concept (Rogers, 1961). Humanistic theories are also criticized for lacking an empirical basis, and they are weak in specifying mechanisms of adjustment. But even here in the humanistic school, there are interesting ideas that can be translated into formulations that can be understood and worked with by behaviorists. Maslow suggests that secondary social reinforcement may not be salient until primary (appetitive) reinforcers are no longer the dominant or sole source of reinforcement. Rogers' idea of acceptance of one's history and present circumstances has been extended into behavioral terms for a variety of clinical issues (Hayes, Jacobson, Follette, & Dougher, in press).

Cognitive-behavioral writers have presented some useful notions of what one might use to define a theory and methodology for assessing psychological health. In social learning theory, partic-

ularly as described by Bandura, a well-adjusted person is one who has realistic notions of the consequences of his or her behavior, is high in self-efficacy, learns through observation, and has self-regulated contingencies for success and failure (Bandura, 1977b; Mischel, 1973). Social learning theorists have offered some potentially useful ideas here. However, they seem more content to allow private events to explain behavior than many in the behavior-analytic tradition would prefer, even when other explanations that allow better access to controlling variables are available. For example, Biglan (1987) astutely provides a behavioral analysis of the construct of self-efficacy that provides insight into how one could establish and alter what Bandura means by the term (Bandura, 1977a). The choice to allow one behavior (self-efficacy) to explain other behaviors (behavior-behavior relationship) is a philosophical one, a choice that behavior analysts have chosen to avoid for pragmatic reasons (Hayes & Hayes, 1992).

Dollard and Miller (1950) describe well-adjusted persons as those whose learning history included positive reinforcement for healthy behaviors, and who have a wide range of reinforcers. These individuals situate themselves in an environment in which they can obtain reinforcement for their activities from persons close to them. The appeal of this description is obvious, although just what constitutes healthy behaviors is not.

From a biological perspective, a well-adjusted person is one who has the genetic make-up that permits the most successful adaptation to one's environment. Generally biological adaptation translates into reproductive success, which is not a useful notion for us in this context. Although there are phylogenetic issues that we will raise later, behavioral genetics has a quality of predestination that is of little use when trying to alter the psychological health of an existing human being. Perhaps once psychologists have successfully obtained prescription privileges, they can move on to gaining access to the right to engage in genetic engineering, at which

time we can reexamine the biological notion of adjustment.

In addition to the above familiar contributors to what might be entailed in the notion of psychological health, there are many others who have attempted to define and measure some aspect of well-being. A partial list of self-report instruments designed for this task include the Wellness Inventory (Travis, 1981), the Life Assessment-Wellness Assessment Questionnaire (National Wellness Institute, 1983), the Lifestyle Coping Inventory (Hinds, 1983), the General Well-Being Schedule (Dupuy, 1973), the Mental Health Inventory (Veit & Ware, 1983), and the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Space considerations prevent a review of this rather substantial literature.³ For our purposes, this literature is of limited value because it relies almost completely on self-report measures and has almost none of its conceptual foundations based on a behavioral paradigm. A significant portion of this literature approaches well-being as the absence of psychopathology and distress or as satisfaction with various aspects of life. Many of the ideas found in this literature are based on the principles of the personality theorists cited earlier in this section.

BEHAVIORAL ELEMENTS OF PSYCHOLOGICAL HEALTH

From this abbreviated review of theories of adjustment, the behaviorist can find elements that are recognizable as portions of the three-term contingency. What we wish to do is be able to locate individuals with respect to their functioning on each element of the three-term contingency. In the past we have done so primarily with respect to deficits. By ex-

³ The reader may wish to consult Diener (1984) and Volume 71, Number 2 of the 1992 *Journal of Counseling & Development*, which is a special issue on wellness throughout the life span, to see the variety of perspectives authors have taken on this topic. In addition, it is interesting to compare the philosophical positions of Boores (1975, 1977) and Wakefield (1992a, 1992b).

tending our assessment to include more useful capacities, it may be possible to accomplish the goals listed earlier. A behavioral model describing strengths as well as deficits is shown in Figure 1. The figure shows a three dimensional model of psychological health in which each term of the three-term contingency is used to define an axis. Each axis extends in a positive and negative direction. The numerical values can be thought of as corresponding to *z* scores of how common a particular performance on a set of assessment procedures used to measure that axis is. There are multiple assessment procedures that contribute to a score for each axis.

In this model we have located some common diagnostic labels as well as examples more relevant to health.⁴ For example, a pedophile is located with negative scores on all three dimensions, indicating that the pedophile is one who inappropriately discriminates children as opportunities for sexual behavior, has a response repertoire limited to children, and who is inappropriately reinforced by children as sexual stimuli. A sociopath is differentiated, in this example, by having a highly successful response repertoire but finds people to be stimuli to take advantage of, which is, in turn, reinforcing.

This scheme allows us to differentiate Clients A and B (presented earlier in the paper). The two clients differ significantly in how they discriminate social opportunities. Client A discriminates new relationships as opportunities to engage in appropriate interpersonal behaviors and is willing to experience the contingencies. Client B discriminates social interactions as danger situations and is not willing to be placed under contingent control (i.e., see what happens).

We have also labeled one of the plotted

Figure 1. Hypothetical plot showing how the stimulus functions of the three-term contingency can be used to define dimensions of psychological health.

points “vulnerable” as an example of one who may be experiencing no current pathology but who is at risk for problems. An example is an inner-city adolescent who may not discriminate social danger well, who is under poor contingent control for academic achievement, but who has an adequate social repertoire to interact with peers. Identifying this person before there are problems enables us to move him or her to a less vulnerable position.

The “resilient” point represents someone who has a diverse repertoire, discriminates opportunity for reinforcement from danger, and learns from his or her experience. Such a person may experience adverse consequences in life, but is expected to continue emitting appropriate behavior that is more likely to be reinforced and less likely to have adverse consequences.

MEASUREMENT APPROACHES

The measurement task is to develop procedures that sufficiently sample performance on all of the stimulus functions to allow one to locate people on the graph in Figure 1. The question is, “What are the important parts of each of these elements?” Our research group has begun to enumerate measurement procedures, restricting ourselves to those elements for which we can devise a laboratory assessment procedure. Table 1 presents a short list of elements that could load on each

⁴ For the sake of brevity, we have chosen to oversimplify the clinical explanations in our examples. We hope the reader understands that one could more fully characterize these examples or use different stimulus functions to describe the strengths and weaknesses shown in the figure if one so chose, and the model would retain its utility.

TABLE 1

Stimulus discrimination (antecedents)		Response domain		Contingent control	
Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses	Strengths
Lack of appropriate antecedent in environment	Can discriminate opportunities for social reinforcement	Excesses (e.g., anxiety)		Absent for pro-social behavior	Under appropriate contingent control
Defective stimulus control	Identifies many types of stimuli as discriminative for reinforcement	Deficits (e.g., lack of skill)		Competing consequential control	
Generalization errors	Discriminates risk to personal safety	Behaviors aversive to reinforcing community	Can appropriately self-monitor	Inappropriate consequential control (e.g., drugs, pedophilia)	Broad range of appropriate reinforcers
Inefficiently arranges environmental controls	Structures environment to own advantage	Behaviors that interfere with learning		Short-term contingencies too controlling	Can regulate own behavior by attending to more distant consequences
	Recognizes own stimulus value upon others	Excessive or inappropriate rule governance	Can accurately tact contingencies		Learns when contingencies change
	Accurately discriminates stimuli as having multiple contingencies	Aversive self-reinforcing strategies (e.g., perfectionism)			Discriminates when consequences are delayed vs. not coming
			Social repertoire protects person from excessive risk		Has intermediate social reinforcement to establish remote contingent control
			Accurately assesses adequate response for a given goal		
			Engages in behaviors with reasonable response costs		
		Avoidance	Appropriately conditioned emotional responding		

of the axes in Figure 1. Many of the elements come from the behavioral assessment literature, in which various authors have listed elements that are useful to a functional analysis (Bandura, 1968; Goldiamond, 1974; Hawkins, 1986; Hayes & Follette, 1992; Kanfer & Grimm, 1977; Schwartz & Goldiamond, 1975). We have expanded many of these common assessment elements to include constructive as well as problematic aspects of various stimulus functions. Once one identifies aspects of healthy functioning, one must then measure these various stimulus functions. We will describe three ideas that are currently under development in our laboratory.

Antecedent or discriminative stimulus functions and response functions. Follette, Naugle, and Follette (1993) will present our first attempts to describe a method for differentiating individuals with respect to their ability to discriminate common social stimuli. We have taken a series of videotaped vignettes that show an interaction between a man and a woman meeting for the first time. In this series of vignettes, we vary the apparent elements of risk of a potential social encounter. For example, one vignette presents a rather unsavory character asking out a woman on a date saying, "Just hop onto my motorcycle and we'll go." In other versions, a more innocuous-looking person asks for a coffee date where they will meet in a public place during the day. We also present a vignette with a man looking straight into the camera asking the viewer for the date. The video stops, and the subject is told to respond. The responses are taped and coded for how effective the responses are (McFall, 1982). We are gathering normative responses to determine both the frequency with which people accept or reject the offers and the functional adequacy of the verbal behavior emitted during the playing of the vignettes.

This procedure allows us to assess what kinds of stimuli are perceived as dangerous versus those recognized as opportunities for appropriate social reinforcement. At the same time, we can assess the adequacy of the response repertoire

for accepting, declining, or negotiating new conditions. We believe this assessment procedure will allow us to distinguish Clients A and B as well as people who are vulnerable to danger and who are open to establishing new social reinforcement.

Reinforcing functions. In another assessment procedure currently under development by Bach and Follette (1993), we are devising a way to assess the degree to which one balances short-term contingent control and delayed reinforcement. In our initial studies, we are performing a content analysis on important decisions people have made and the degree to which they seemed to be in contact with longer term consequences. We are examining both mistakes and good decisions that have been identified by the subjects themselves. Our next step is to devise a laboratory game in which players can accumulate small but immediately knowable reinforcement versus larger but less definite reinforcement later. This procedure will also be modified to evaluate the importance of the avoidance of aversive stimuli as a behavioral strategy. We will be testing whether avoiding all aversive events is more important than acting in a way that will achieve a large reinforcer at the cost of some short-term discomfort. It is possible that this assessment procedure can be useful for predicting who will make healthy life-style changes, even though they may give up simple immediate pleasures or experience some aversive states for a long-term, but uncertain, large reinforcement (health).

The following question then arises: What is the difference between the laboratory procedures we are describing and traditional projective testing techniques? There are two clear differences. First, in the tradition of behavioral assessment, we are measuring behaviors as samples of directly relevant behavior rather than behaviors as signs of some other unobservable construct. Regardless of the relationship between the laboratory findings and the construct of health, the behaviors themselves are of interest and indicate how the person currently functions in specific situations. This distinc-

tion has long been recognized as part of the behavioral assessment tradition (Goldfried, 1977; Goldfried & Kent, 1972; Goodenough, 1949; Hawkins, 1986). When we measure the discrimination of a social stimulus by a subject and any subsequent response, we are directly assessing behaviors of interest. The behavior is not a sign of something else that is not observable. For example, in the case of a Thematic Apperception Test (TAT) response, the response emitted is interpreted as being under the control of unconscious constructs that are, in principle, unobservable.

The laboratory methods described above invoke an old controversy in behavioral assessment between those insisting upon idiographic assessment in the functional analytic tradition versus those who see some utility in combining a nomothetic approach in search of generally applicable principles of assessment (Silva, 1993, pp. 34–43). In this case, our goal of being able to compare treatment outcomes across individuals requires the use of a nomothetic approach. We realize that some will reject such comparisons using normative references, but we think it is a useful first step. When Skinner (1948, 1974) wrote about the applicability of behavior-analytic principles, he predicted that the application of those principles would, in general, produce a predictable outcome across a variety of individuals. We believe that these assessment procedures, which are based on longstanding behavior-analytic practices, will permit useful insights into the functioning of the individual and the types of variables that control behavior. Others may disagree, and we welcome suggestions for other methodologies.

CONCEPTUAL GAPS

One of the difficulties that arose when addressing the problem of how to conceptualize, measure, and ultimately increase psychological adjustment from a behavior-analytic perspective is that the science of behavior analysis is missing some key information. For example, if one were to value social concern for oth-

ers as a sign of psychological health, and found someone lacking in such concern, how could you go about increasing the desired behavior? Michael (1982) pointed out that a discriminative stimulus functions to alter the momentary frequency of a particular type of response in the presence of that stimulus because of a particular reinforcement history. He raises the issue of how one makes a particular reinforcer effective, or increases its effectiveness. In referring to these motivating factors, Michael suggested that the term *establishing operation* be used to describe the operations leading to any changes in the environment that alter the effectiveness of some thing, person, or event to function as a reinforcer while simultaneously altering the momentary frequency of the behavior that has been followed by that reinforcement (pp. 150–151).

In laboratory preparations, behaviorists have often used either deprivational states (e.g., food or water) or aversive stimuli (e.g., shock or uncomfortable conditions) to accomplish this function. How to establish appropriate reinforcers in humans is a more difficult issue. The use of deprivation or aversive states is generally not acceptable as a behavior-change strategy in our society, and under conditions in which such procedures do occur, they may not be effective, because other less constructive reinforcers (e.g., affiliation with gangs, drugs, etc.) may become available. At this point, we have no scientific basis to know how to establish appropriate reinforcers for humans. It is clear from the amount of violence that occurs in our society that threat as an aversive emotional state or deprivation by incarceration does not adequately establish stimuli for prosocial behavior for a large number of people. Behavior analysts cannot say with precision what makes going to art museums, caring about others, reading, or baseball reinforcing to some and not to others.

In fact, the very nature of reinforcement itself has not been adequately specified by our science. Earlier, we suggested that being under appropriate contingent control was an important aspect of psy-

chological health. But what makes a stimulus function as a reinforcer has never been clearly addressed. In the case of certain primary reinforcers (e.g., food or water), one can probably assume that these are phylogenic reinforcers, but in most cases it is not clear whether reinforcers are phylogenic or ontogenic (Skinner, 1966).⁵ For example, are sexual stimuli universally reinforcing? Is whatever reinforcing quality sexual behavior has genetic or environmentally based? If it is genetically based, then can it be overriden by environmental contingencies? If so, how? We can take the easy road and argue that it doesn't matter whether reinforcers are phylogenic, and just accept that reinforcement itself is and then move on (Skinner, 1989). But this gives us little help in identifying how one can change reinforcers for someone who is under contingent control that is aversive to others or deleterious to the individual. We would also like to be able to determine how some persons come under the control of contingencies that lead them to find joy in helping others. When Watson (1924) claimed he could make doctors, lawyers, beggars, or thieves from a dozen normal children if he could specify the world in which they grew, he was, in part, commenting on the past overestimation of the influence of genetics. But if we could ask him to describe how he would create a Mother Theresa, a music lover, a romantic, or just a well-adjusted individual, it would be interesting to know how he would structure the world. Few contemporary behaviorists have (with the exception of Skinner) even talked about what goals a society should endorse if behaviorists were ever actually allowed to influence society. Given the small amount of control behavioral scientists are likely to have, would they be able to specify any meaningful changes?

SOME FINAL THOUGHTS ON PSYCHOLOGICAL HEALTH

We realize that one's view of psychological health is highly individualized. The figure and table presented earlier give no indication of the relative value we should place on specific behaviors or assets. We would like to say now that we do value some things above others. First, people whose behavior is under contingent control rather than being overly rule governed seem to be healthy. Verbal organisms (people) seem to abstract rules that become inflexible and resistant to modification (Zettle & Hayes, 1986), in spite of the fact that these rules do not accurately reflect the actual environmental contingencies (Hayes, Brownstein, Zettle, Rosenfarb, & Korn, 1986). An appropriate balance between rule governance and contingent control allows one to learn efficiently but still experience life rather than "know (the rules concerning) what life is all about."

A healthy individual is one who balances short-term and long-term reinforcement. The verbal community must assist in creating intermediate reinforcing social contingencies that establish and maintain working for more temporally distant reinforcers. Psychological health entails a sensitivity to such social reinforcement, the ability to arrange one's environment to maintain working for distant reinforcers, and the ability to self-reinforce.

Our notion of psychological health recognizes the value in accepting one's history and not being overly influenced by negative events in one's life. People who become psychologically "stuck" operate as if their history is also their future, whereas the healthy individual recognizes and behaves as if his or her history is simply what it is. This view is the basis for an important therapeutic intervention that seems especially promising for people who have undergone significant trauma (Hayes et al., in press). The individual labeled as resilient in Figure 1 would necessarily be one who is influenced but not defined by the past.

We believe it is advantageous to have

⁵ In this article, Skinner discusses whether behavior is phylogenic or ontogenic, and how difficult it may be to tell them apart. We believe the argument and difficulty extend to reinforcement and reinforcers as well.

a well-developed repertoire of behaviors to describe the circumstances that give rise to particular useful or harmful behaviors. This repertoire might traditionally be called self-knowledge, but its importance lies in the ability to describe (functionally analyze) the conditions under which various behaviors are emitted. Skinner (1974) suggests that this skill is essential for good self-management. Being able to describe those features of the environment that are associated with particular conditioned emotional responses is thought to be a useful goal for some radical behaviorally based therapies as well (Kohlenberg & Tsai, 1991).

Finally, psychologically healthy people can identify the effects of the environment and will seek to change the environment when it is not working to their benefit. This condition is particularly difficult to achieve because environments are so powerful at shaping behavior without our knowing exactly what is happening. An interesting contemporary social example is the situation faced by women who join a traditionally male-dominated workplace. Women strive for equal opportunities. They are now entering a work environment that they had relatively little hand in creating. As women gain more access to traditional male environments, they experience unpleasant affective states because the contingencies that exist in these work environments produce unhealthy competition, time-management difficulties, pressure, and lack of disclosure due to the use of aversive control. These responses are reinforced in many workplaces, and men who have been acculturated to accept these conditions do not recognize the negative aspects of the situation. Women who have been shaped to label their affective states better can identify that what seems natural is actually deleterious and has unnecessary aversive properties. The recognition that some aspects of the traditionally male-dominated workplace are aversive is due not merely to biological differences between males and females but to the reinforced responses engendered by their respective histories.

Psychological health involves the rec-

ognition that although there are some potent reinforcers in traditionally male-dominated workplaces, the workplaces bring with them discriminative stimuli that occasion destructive responses. Healthy people accept the useful aspects of the environment but can identify those controlling practices that are aversive and implement positive countercontrol strategies in response. Psychological health is self-sustaining, in that a healthy person can socialize those around them to act in responsible, ethical ways. The quality we are attending to is the interaction between the ability to identify contingencies that currently control behavior and the ability to structure the environment actively so that positive control strategies operate for oneself and others, thereby decreasing the need for countercontrol. Men have traditionally defined much of their satisfaction in terms of more limited work-related functions at the expense of other sources of reinforcement. There is evidence that, due to sociocultural influences, both men and women are developing broader sources of reinforcement, with men becoming more sensitive to family variables as sources of reinforcement (Bryant & Veroff, 1982).

The subject of psychological health is a very important one, and we have just scratched the surface of why behavior analysts should attend to it (how it would be reinforced) and what behavior analysis has to contribute to its study. But first we must examine our own personal, clinical, and scientific behavior to analyze when and how we refer to ourselves and others as psychologically healthy.

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