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BEHAVIOR THERAPY FOR ADULTS

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Behavior Therapy For Adults

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This contrasts sharply with a dynamic view of symptoms as recapitulations of past conflicts in modified form, and deemphasizes the importance of somehow undoing or reworking a patient's past as a necessary part of therapy. It even contrasts with those earlier behavioral approaches in which treatment procedures were thought to produce their results by extinguishing through non-reinforcement, or otherwise reversing, "faulty learning" that took place long before and produced symptoms as enduring monuments to Pavlovian traumatic conditioning. Many competing, distinctly different learning or behavior theories have been developed (Hogan, 1966). Behavior therapists and theories are not "all alike," as erroneously implied in the early literature.

Behavioral therapy is increasingly Skinnerian in its special concern with the manipulation and control of stabilized asymptotic behavior (i.e., behavior that is well established and "overlearned"). The operant-conditioning approach resembles other behavioral views of learning in stressing that behavior arises out of a conditioning history in which stimuli acquire reinforcing and discriminative powers and in which responses are preferentially selected and strengthened by their consequences (Kazdin, 1973; Reynolds, 1968; Skinner, 1938; Skinner, 1953). Most competing learning theories and much of the experimental literature, however, have focused on the acquisition and loss of conditioned behavior in acute situations over the short term. Operant conditioning, on the other hand, has

been more attentive to the possibilities and special analytic problems that arise in dealing with well-established behavior that has gone far beyond the acquisition stage in chronic behavioral situations. Such asymptotic behavior often floats quite free of the conditions that led to its acquisition, passing under the control of (i.e., is "captured" by) new, quite different contingencies, given the proper experimental manipulations. The operant-conditioning approach has developed a logic and technology adapted to dealing with asymptotic behavior (Goldiamond, 1968; Honig, 1966; Millenson, 1967; Reynolds, 1968; Sidman, 1960). This technology also takes account of and even capitalizes on irregular, intermittent schedules of reinforcement. Rewards or punishments may control behavior strongly and precisely, even though they occur only infrequently or irregularly as in real life. Inasmuch as most behavioral pathology probably consists of asymptotic, stabilized, and well-established habits, usually sustained by inconsistent and somewhat irregular patterns of reinforcement, such behavior should be more amenable to operant analysis than to any other.

Operant conditioning is more a pragmatic method for studying behavior than a theory (Reynolds, 1968). Much of the important content is essentially definitional and descriptive. It sees two different *procedures* for changing behavior: In conditioning of type S (Pavlovian) the reinforcing unconditioned stimulus (UCS) is paired with some signal (the conditioned stimulus or CS) thereby changing the power of the CS to evoke behavior. The fear that

becomes attached to a situation in which a person has been severely threatened or hurt, as well as conditioned salivation in the dog are examples of this type of control. Conditioning of *type R* (operant or instrumental) in which behavior is controlled by its consequences (*reinforcers*) receives more emphasis.

Reinforcers are identified and defined empirically in terms of their effects on the preceding behavior: the onset of primary positive (*appetitive*) reinforcers (e.g., food, water) increases its strength, and the onset of primary negative (*aversive*) reinforcers (e.g., shock, loud noise) has the opposite effect. Termination of or escape from a negative reinforcer, however, strengthens the preceding response (in aversive control or avoidance-escape learning). Most voluntary or self-initiated behaviors are operants. In both procedures, experimental *extinction* occurs if the reinforcing stimulus is omitted—if the CS is repeatedly presented without reinforcement in type S, and if the reward or punishment ceases to be a consequence of the responding in Type R. Stimuli associated with the reinforcement in operant conditioning can become *conditioned* (secondary) *reinforcers* (probably through type S conditioning) and reward (or punish) behavior as in the appetitive or aversive modes above.

Discriminative stimuli signal that behavior emitted during their presentation will be reinforced. Their discriminative control is established by

reinforcing behavior in their presence and extinguishing it in their absence (*differential reinforcement*). Discriminative stimuli are the occasion for discriminated operant behavior, but do not evoke it, and they also have conditioned reinforcing power. In a *chained* operant, several operant responses are trained to roll off in a fixed sequence, the whole maintained by primary reinforcement of the terminal response. Each element is linked to its successor by stimuli that function as conditioned reinforcers for the immediately preceding response and as discriminative stimuli for the next.

Behaviors very different in appearance (topography) are members of the same *functional-response class* if they are controlled by the same reinforcer. Similarly, stimuli are members of the same *functional-stimulus class*, even though they differ considerably, provided they have the same effect on a particular response. The functional definition of response and stimulus classes, as opposed to an a priori definition with its presuppositions, favors the empirical identification of relevant units of behavior and their controlling conditions in behavioral analysis, both in the laboratory and in the field.

A reinforcer, then, is identified and defined by the effects it *does* produce, not by the therapist's presuppositions as to the effects it *should* produce. That a supposed reward does not function as one, for example, does not mean that conditioning theory does not work. Rather, such an outcome

simply indicates that the reward selected was not a functionally effective, positive reinforcer for that person in that context.

An operant must be emitted in order to be reinforced. If an animal does not have the response in his repertoire at the beginning of training, that behavior may have to be "*shaped*" by selective reinforcement of successively closer approximations to the desired response. Control of a particular response by one kind of reinforcement or one kind of discriminative stimulus may be shifted to other, different stimuli by "*fading*." The new stimuli are "mixed" with the old, with the new progressively "faded in" and the old "faded out (if the former control is to be terminated) by increases and decreases, respectively, in the relative frequency (in reinforcement) or intensity (in discrimination) of the old and new stimuli. "Shaping" and "fading" permit moving stimuli and responses from one class to another, even the creation of new functional classes, as well as the "capture" of behavior by new contingencies that supervene after original learning.

Contrary to popular belief, reinforcement need not be consistent to be effective. Indeed, *schedules* that provide only for intermittent (*partial*) reinforcement influence behavior strongly and characteristically. Reinforcement may be made available for the next response only at *intervals* of time after the last reinforced response; these intervals may be *fixed* and constant (FI) or *variable* (VI). Or the next reinforcement may become

available for a response only when a predetermined number of responses has been made since the last reinforced response. For such *ratio* schedules, the work requirement may be *fixed* (FR) or *variable* (VR). Generally, partial reinforcement produces greater resistance to extinction than reinforcement for each response (CRF). Also, ratio schedules, like piecework, produce higher outputs than interval schedules, which are more like payment by the hour. In fact, the VR schedule (in which rewards may be scheduled in a manner much like the payoff for three bells in a slot machine) is one of the most powerful known, producing high rates of work and great resistance to extinction. FI and FR schedules produce characteristic distributions of responding in relation to the last previous reinforcement, while the output is more even in variable schedules. In avoidance schedules (*Sidman avoidance*) responses postpone aversive events such as shocks. In another, *DRL* or differential reinforcement of *low* rate, a "stretch-out" contingency requires the animal to wait and not respond for some predetermined interval after the last reinforced response in order to qualify for reinforcement of the next response (responses during the interval only postpone the availability of reward). These schedules, too, generate temporal patterning in responding. (For combinations and variations in schedules and their effects, see [Ferster, 1957; Reynolds, 1968].) Familiarity with reinforcement schedules and their effects is essential for clinical behavioral analysis. In clinical situations, where the control that maintains the target behavior is usually unknown, temporal

patterns may suggest what kind of schedule is operating and, consequently, hint at what events may be serving as reinforcers and discriminative stimuli.

Drive and motivation, within the orthodox operant lexicon, have a peculiarly peripheral status. Loose use of motivational constructs to explain a particular behavior, especially in clinical contexts with man, often turns out to be redundant and circular, merely providing a new name for the response pattern, rather than explaining it, i.e., describing the conditions that control it (Skinner, 1953). The operant emphasis, instead, is on reinforcement. Deprivation of such regularly needed inputs as food and water (a specifiable operation) is seen, descriptively, as enhancing or *potentiating* the effectiveness of these primary reinforcers (and their conditioned derivatives) to control behavior. This stringency forces an empirical analysis of clinical behavioral situations in which the behavior of interest may be maintained by social and generalized reinforcers (e.g., attention, praise) or by reinforcement that is idiosyncratic (e.g., "escape" from success). Many of the most powerful reinforcers for social and individual human behavior are social, generalized, and/or idiosyncratic. Deprivation or "setting" procedures sure to potentiate such reinforcers are obscure, particularly in the behavioral disorders where so much of the observed behavior appears cryptic or paradoxical as to the variables that control it.

Identification of the effective reinforcers for a particular person and his

particular behavior can be quite difficult, requiring shrewd guesses based on personal experience and empathy, clinical knowledge and dynamic theory, plus a good green thumb for behavior—in context. These guesses are only that, however, and ultimately require support from firm evidence that the reinforcers identified do, in fact, work as expected. Observation and inquiry to determine what a person likes to do or, better, actually spends a lot of time doing when possible, generally is a practical place to start. Then, in accordance with the "Premack principle," access to high-probability behaviors (preferred by the patient) can be used to reward low-probability behaviors (the constructive, adaptive behaviors that are expected to replace maladaptive behaviors in treatment [1965]). An everyday equivalent to this use of access to high-probability behavior as a reinforcement is letting a child go out to play (high-probability and presumably preferred behavior) if and when he finishes his homework or piano practice (low-probability behavior to be increased). Of course, preferential access to—i.e., permission for pathological or undesired behavior which usually will be of high probability—should not be used as a reinforcement for desired but low-probability behavior. (No one ever stopped smoking by rewarding himself with a cigarette for "not smoking"!)

Furthermore, free access to the high-probability behavior must be blocked for it to become contingent on the low-probability behavior. If the reward remains freely available, or remains as available as it always has been, only the existing behavioral repertoire will be maintained.

No changes should be expected. There is no *incentive* to *motivate* change.

Readers who prefer to think within a motivational framework, as an alternative to the operant treatment, will find Logan's concept of *incentive motivation* useful (Logan, 1960; Logan, 1970; Logan, 1973). Incentive motivation is, in effect, a learned drive or motive evoked by an incentive acting as a conditioned stimulus. Depending upon the subject's conditioning, it can be either appetitive or aversive in effect. The concept plays a central role in Logan's analysis of self-control.

The behavioral therapist, then, is supposed to direct his attention to a behavioral analysis of the individual case and its context that reveals the present consequences (reinforcements) maintaining the undesirable target behavior (Goldiamond, 1965; Goldiamond, 1974; Goldiamond, 1968; Kanfer, 1965; Kazdin, 1973). These consequences are to be altered and the patient's circumstances manipulated to make more desirable alternative behaviors possible and more probable by arranging so that a desirable behavioral repertoire is developed and effectively supported by rewards, either tangible or social. Thus, the therapist attends to the details of the patient's behavior, plans concretely, and participates actively in treatment. As behavior is largely controlled by the contexts it occurs in, the therapist must be prepared to deal with the circumstances of the patient's life. He further should arrange things and teach the patient to arrange things so that the desired behavior can

continue to be supported by the normal contingencies of life that support the social behavior of all of us, to provide for carry-over or transfer to the extra-therapeutic, real-life situation to which the patient will go. All of this is easier said than done, of course.

The reasons are complex and beyond the healing power of simple terminological adjustments and acquiescent intellectual generosity. Three related weaknesses, worthy of comment here, embarrass even the best of the behavioral models if they are extrapolated literally and directly to psychopathology and therapeutic behavior change: *First*, schedules of reinforcement may have important and systematic effects on behavior not being reinforced directly by that schedule. The possibility that target behavior may be affected by some reinforcement schedule aimed toward other behavior altogether, unbeknown to the analyst, makes clinical behavioral analysis somewhat indeterminate. *Second*, the current paradigmatic behavioral models have little capacity to deal with species-specific ethological complications that arise in application at the human level. *Third*, the models are incomplete with respect to accounting rigorously for self-control or self-regulation of behavior (the goal of all psychotherapy, behavioral or otherwise). To make these points is less to jape at imperfections than to encourage new lines of emphasis and elaboration. The clinical application of behavioral models, if taken seriously without glossing over the difficulties, could have a most beneficial impact on future directions in the scientific study

of behavior.

The broad spectrum of schedule effects is widely investigated, but still poorly understood (Dews, 1973). Some are dramatic and well-known, such as the aggressive side effects of aversive control (Hutchinson, 1972; Ulrich, 1962; Ulrich, 1972). Some, such as behavioral contrast in which a change in reinforcement schedule in one segment of a session changes the behavior in another, though the schedule there remains unchanged, are more subtle (Reynolds, 1968). Others, such as the more recent discovery of "auto-shaping," raise serious questions about how behavior is acquired and maintained. Here, pigeons acquire an operant-pecking response without direct reinforcement of it, as a function of Pavlovian pairings of a signal and reinforcement (Brown, 1968; Jenkins, 1973; Moore, 1973; Williams, 1969). As a further example, in the rat FI schedules of food reinforcement that are too "lean" or "stingy" can generate adjunctive, displacement, or interim behavior, such as excessive drinking, licking at an air tube, or eating shavings (pica).⁴⁵¹⁸⁷ Thus, the source of behavior or a behavior change may be indirect and obscure. Indeed, the effect of *non-contingent* reinforcers on behavior occupies an increasingly important place in behavioral analysis (Gibbon, 1974). More important, once behavior has been generated by these and other indirect or complex effects, it can be captured by direct reinforcement from the reacting environment, to be under more than one kind of control and ambiguous to simple observation (Cohen, 1971; Dews,

1973; Hunt, 1971). A diagnostic behavioral analysis that rests content with noting only the most obvious, apparently controlling conditions, may be sadly incomplete.

The ethological problem rests on more than man's supposed complexity in comparison with the infrahuman subjects used in most learning and behavioral research. Basic experiments and theorizing have looked at isolated, arbitrary behavior (e.g., salivation, lever pressing, key pecking) as it covaries with similarly isolated environmental events, usually assuming all of these to be exemplary and representative for analysis and theory construction. Such simplification and isolation are essential steps in scientific understanding, but the model cannot be taken as the complete picture unless applications in the field show it to be accurate and exhaustive. Considerable data already indicate the classical models, simplistically applied, fail to take sufficient account of how a species' behavior is organized (i.e., the interrelations among its "elements") with respect to environmental inputs (i.e., reinforcers, discriminative stimuli, etc.). Breland and Breland's *The Misbehavior of Organisms*, is a humorous but classic account of difficulties encountered, largely because of ethological factors, in training animal species not ordinarily used as experimental subjects (Breland, 1961). (For broader, more recent accounts, see Breland, 1966 and Hinde, 1973.)

Man's capacity for symbolization and his active use of it for controlling

his own and the behavior of others, plus his capacity for profiting from essentially vicarious experience, compounds the problems of extending "animal" theories to human behavior. The compounding represents a quantitative increase in complexity, but the increase may be so great that it can be handled best by a qualitatively new behavioral model. Animals that engage only sparingly in identifiable symbolization and learn largely through their own direct experiences may prove to have been of limited value in "analogue" experiments directed toward these important aspects of human behavior. The particular significance of self-referent symbolic behavior, the interesting changes that occur in the capacity of symbolic behavior (including plans and intentions) to control other behaviors, especially as it becomes conscious and subject to the rules of secondary process (as in insight), highlight the problem (Hunt, 1968). The classical behavior theories are generally silent about these matters. Perhaps we need new theoretical inventions as revolutionary and provocative as Skinner's reanalysis of the concept of the reflex, the concept of functional classes of stimuli and responses, and the powerful pragmatic technology they generated (Skinner, 1938).

The problem of self-control is a most difficult subject to deal with rigorously within the framework of orthodox behaviorism. Doubtless, self-control follows whatever natural laws exist with respect to human behavior in general, but even creative behavioral analysis derived from theory based

on animal experimentation suggests only partial solutions. Skinner (1953; 1971), Goldiamond (1965), and Goldiamond and Dyrud (1968), have been articulate and persuasive about how one can manipulate environmental circumstances to change one's own behavior toward desired goals. This involves arranging discriminative stimuli to make the desired behavior more likely (or the undesired behavior less likely) and scheduling differential rewards for oneself on completion of performance requirements, all in the framework of straightforward (though somewhat "relaxed") operant formulations. The psychology of the "controlled self" is fairly well developed and effective, but the "controlling self" that determines what to control, and for what ends, remains a largely unanalyzed presence shrouded in mystery.

More recent approaches to a theory of human behavior (Boneau, 1974; Mischel, 1973; Powers, 1973; Staats, 1963) have jumped over the ethological chasm by making assumptions about human cognitive functioning. Though largely begging an important philosophical question, this maneuver opens the door to pragmatic application of some of the most powerful analytic features of orthodox behavioristic theories to complex human behavior (e.g., positive and negative reinforcement, schedule effects, discriminative control). The new developments draw heavily on the thinking of Miller, Galanter, and Pribram (1960) in their theoretical proposal for an essentially cognitive psychology. This formulation started from a not unreasonable set of assumptions about the basic roles of imagery, knowledge of outcome, and

effects of motivation on planning and organizing behavior with respect to outcomes. Mischel (1973), in his theory of cognitive social learning, describes five fundamental "person variables" (dimensions on which individuals may differ and that, alone and in interaction, exercise determinative influences on behavioral output in context): (1) ability to generate cognitions and behaviors; (2) possession of strategies and constructs for categorizing events and for self-description; (3) expectancies with respect to behavioral and stimulus outcomes in particular situations; (4) subjective stimulus values, including incentives, aversions, and motivating stimuli; and (5) self-regulatory systems or plans, with rules for evaluation of performance and for organization of complex sequences.

Kanfer and Phillips (1965), Kanfer and Karoly (1972), Meichenbaum (1973), Mahoney (1972), Ferraro (1973), Logan (1973), Premack and Anglin (1973), and Franks and Wilson (1973), among others, present thoughtful and cogent analyses of self-control. Effective self-control, generally, depends on knowledge of contingent outcomes, is based on discriminative instructional control (including the human subject's instructions to himself), and a kind of internal evaluative template or image as to how any particular series of actions ought to go. Such cognitive templates determine goals for the person and standards for defining success or failure— whether the person qualifies for or "deserves" self-reinforcement. Given sufficient commitment to standards and goals, the system works within the cognitive-motivational

framework. The problem is how to achieve and maintain that commitment; once again, the problem of the "controlling self."

These new approaches may furnish the study of personality with a much needed new lease on life (Fiske, 1974). Certainly, they constitute the beginnings, at least, of a third model to illuminate and guide new developments in behavioral therapy. In this connection, the development of a theory of self-control in no way abandons deterministic assumptions in favor of free will. Rather, the enterprise assumes that choices, commitments, expectations, and the like that direct human behavior obey deterministic principles, and seeks only to find out what these might be.

The State of the Art

So far, most behavioral therapy has indulged only sparingly in the more detailed considerations in theory and experiment discussed above. In practice, and confronted by major problems in the field, behavioral therapists develop pragmatically oriented, rule-of-thumb solutions to alleviate glaring "defects" in behavior as supported by substantial biases in the environment. The literature tends to emphasize matters of procedure along with testimonials to easily discriminated, clear-cut favorable results.

Opinions differ as to how the various methods should be classified and as to what constitute the "active principles" in each. For purposes of this

overview, however, the methods fall into two archetypical categories:

1. Procedures directed toward reducing the power of stimuli (including environmental situations and social contexts) to evoke unwanted symptomatic reactions (usually emotional reactions of the fear or anxiety type). The procedures developed, and are generally discussed within, the metaphor of type S (Pavlovian) conditioning and extinction, and are variously called "desensitization," "deconditioning," "conditioning therapy," or "counter-conditioning."

2. Procedures directed toward replacing unwanted, symptomatic behavior with more constructive, adaptive behavior by manipulating reinforcing consequences. The procedures developed and usually are discussed within the metaphor of operant (type R) conditioning and extinction. "Behavior modification" is a popular generic term for this group, though "self-control" and "feedback" usually refer to it, too.

As indicated earlier, Pavlovian and operant conditioning are two different procedures for influencing behavior, not necessarily two different kinds of behavior. Pavlovian pairing of stimuli and reinforcers occurs as an integral part of operant conditioning, playing a substantial role in establishing conditioned reinforcers and discriminative stimuli. Similarly, operant control develops over responses conditioned in the Pavlovian mode (Jenkins, 1973;

Moore, 1973). Clinically, a Pavlovian conditioned response (e.g., tantrum) can come under the control of (be captured by) favorable consequences (in terms of attention, etc.) if these are rewarding (secondary gain [Hunt, 1968]). And Miller and his colleagues have showed that physiological responses once thought to be under exclusive Pavlovian control can be conditioned operantly (Miller, 1969). Within the psychodynamic metaphor, defenses against anxiety are operant avoidance-escape behaviors, reinforced by termination of Pavlovian conditioned anxiety. Symptoms, target behaviors that are combinations of defenses, are operantly reinforced by instinctual gratification (however attenuated) as primary gain, plus any secondary gain that accrues. The interpenetration of processes, if not of procedures, seems virtually complete.

Desensitization and Related Procedures

Systematic Desensitization

The best-known and probably the most widely used behavioral technique, it aims to alleviate neurotic fears, anxieties, and inhibitions by reducing the sensitivity of the patient to the stimuli that produce these reactions. Essentially, the procedure rests on and extends the pioneering studies of Watson and Raynor (1920), and Jones (1924). As described by Wolpe (1958; 1968; 1969; 1968), its progenitor and energetic advocate, fears

and anxieties ("phobic responses") are the product of earlier Pavlovian conditioning in which the "phobic" object was paired with subjectively experienced, traumatic emotional arousal. Such conditioning can be reversed by extinction, in which some representation of the phobic object is experienced repeatedly in the absence of reinforcing traumatic excitation.

Wolpe argued that this required the patient to be confronted only with versions of the stimulus that do not produce fear or anxiety at the time. To achieve this goal, the therapist first, in discussion with the patient, constructs a highly personalized "anxiety hierarchy" consisting of a graded series of partial representations of the phobic object, ranging progressively from minimal and benign versions up to as full and direct a reproduction as feasible in the therapy situation. (For example, the hierarchy for someone with a snake phobia might start with the word, "snake," go through a range of pictures of snakes of increasing vividness and presence, ending with an item in which the patient might even have physical contact with a snake.) As a preliminary step, the therapist also trains the patient to engage in some activity incompatible with anxiety or fear, usually progressive relaxation (Jacobson, 1938), but sometimes a light hypnotic trance, assertive behavior, or sexual fantasy (depending on the patient's problem). Wolpe believed the incompatible behavior "reciprocally inhibited" the neurotic reaction, speeding its extinction, and that the reciprocally inhibiting response came under the control of the phobic stimulus. As a result of the pairing, relaxation,

or any other reaction, would be elicited as a Pavlovian-conditioned response, replacing the fear or anxiety through "counter-conditioning."

For treatment proper, the patient is told to relax and then to imagine or experience, remaining relaxed, the weakest version of the phobic stimulus in the hierarchy until the item no longer evokes any discernible emotional response. Then, the patient moves to the next higher item, repeating the procedure and signaling the therapist if that item produces a disturbance that breaks through the relaxation. If it does, they go back to the earlier item, but if not, the second item is repeatedly presented to the patient (or evoked in his fantasy) until it no longer disrupts relaxation. This routine is repeated for all of the items in the hierarchy, progressing eventually to the strongest representation of the phobic object, which the patient repeatedly experiences under relaxation until it no longer evokes an emotional response.

With appropriate modifications, desensitization can be conducted in vivo (in actual, real-life field situations such as a fire escape for a patient who fears heights) or with only pictorial or even covertly fantasied representations of the phobic object in the consulting room. Data on the matter conflict to some extent, but in vivo applications seem likely, on balance, to be more effective, at some cost in convenience (Sherman, 1972). Though Wolpe himself has reported generally great success for his procedure (Wolpe, 1968), others have found it less effective for agoraphobic, panphobic,

or complex neurotic cases than for focal phobias (Marks, 1969).

Actually, the heart of the desensitization technique—Pavlovian extinction of responses to conditioned fear stimuli—is applicable to a wide range of problems in a variety of settings, including groups. The use of fantasy and cognitive rehearsal in behavioral therapy extends well beyond this extinction model. In addition to its use in aversive "covert sensitization," positive fantasy manipulation plays a major role in treatment of sexual deviations, to be considered later in connection with mixed strategies (see p. 306).

Flooding or Implosion Therapy

In this procedure (Hogan, 1966; Hogan, 1967; Hogan, 1968; Stampfl, 1967), the patient is exposed for whole sessions, either in fantasy or in vivo, to the most anxiety provoking object or fear in his phobic syndrome. This contrasts diametrically with Wolpe's use of a progressively graded hierarchy that protects the patient from sudden flooding with emotion. The sessions are reported as stormy; yet preliminary comparative data imply that flooding works at least as well as conventional systematic desensitization for focal fears, and better for nonspecific generalized phobias (Marks, 1971).

Though Wolpe emphasized the reciprocal inhibition or counterconditioning components in systematic desensitization, recent views

consider the Pavlovian extinction to be more important (Franks, 1973). Operant reinforcement may contribute, too (Hutchinson, 1972). Desensitization procedures provide liberally for reinforcement of counterphobic or counter-anxiety behavior. Each step up the fear hierarchy (and demonstrated capacity to endure the stresses of flooding, too) represents progress toward a goal. This behavior qualifies for and usually receives social reinforcement, plus intrinsic reinforcement from increments in the patient's satisfaction and confidence. Achievement of the final counterphobic goal response receives even more substantial positive reinforcement—from the patient to himself, from the therapist, and from those who know of and have been inconvenienced by the patient's difficulties. The proportional contributions to recovery by Pavlovian extinction and operant reinforcement probably vary from case to case, or, as Murray and Jacobson suggest (Murray, 1971), both desensitization and flooding may be effective because they change the patient's cognitive belief in his capacity to cope with emotional disturbance.

Operant Procedures and Behavior Modification

Token Economy

The token economy grew out of promising earlier applications of operant procedures to psychiatric patients and their problems (Ayllon, 1963;

Ayllon, 1964; Ayllon, 1962; Ayllon, 1959; Brady, 1971; Ferster, 1958; Flanagan, 1958; Isaacs, 1960; Lindsley, 1956; Lindsley, 1959; Lindsley, 1960; Lindsley, 1964). These and other studies indicated that the symptomatic behaviors of deeply regressed psychotic patients (as well as such limited symptoms as stuttering) were amenable to operant analysis and control by response-contingent consequences. The studies also stimulated the widespread use of individualized treatment programs, largely based on procedures that are widely used in clinical and other settings for symptomatic problems that have been unresponsive to other approaches (Franks, 1973; Kazdin, 1974; Schwitzgebel, 1974; Tharp, 1969; Ullman, 1965; Ulrich, 1966).

In a token economy, a set of arrangements provides for systematically reinforcing constructive behavior as and when it occurs in group or ward settings. Idealized, it represents a most ambitious application of operant principles to the functional design of entire therapeutic environments (Cohen, 1968; Cohen, 1971), with overtones reminiscent of Bellamy's *Looking Backward* (1888) and Skinner's *Walden Two* (1948). Reinforcements are usually in the form of points, physical tokens or chips, or even money that the patient earns by his behavior. These can be exchanged for real amenities not readily available non-contingently in the milieu, plus attention, praise, and encouragement for constructive behavior (Atthowe, 1968; Ayllon, 1968; Peterson, 1968; Schaefer, 1969).

Even such difficult to control symptoms as incontinence in chronic, deteriorated psychotic patients may be controlled by operant procedures (Atthowe, 1972), and perhaps more effectively than with the Mowrers' bell-and-pad technique (1938), which is a Pavlovian approach more suitable for children (Lovibond, 1964; Wolpe, 1958).

As Krasner describes it:

A token economy has three specific characteristics: first, the designation of certain *behaviors* as good or desirable and hence to be reinforced; second, a *medium of exchange*, an object—the token—that "stands for" something else; and third, a way of utilizing the tokens, in other words the back-up reinforcers or the good things in life. These may include food or being allowed to sit peacefully in a chair, and cover a wide range . . .

The goals of a token program are to develop behaviors which will lead to social reinforcement from other people, and to enhance the skills the individual needs to take a responsible social role in the institution and, eventually, to live successfully outside the hospital. Basically, the individual learns that he can control his own environment (Krasner, 1968, p. 155).

In principle, a token economy creates a ward environment that is preferentially responsive to (i.e., differentially reinforces) constructive, prosocial behavior. This requires more than just enrichment; both rich and deprived environments can be functionally unresponsive. If patients get a lot or just a little, but all on a non-contingent basis, no special support exists for prosocial behavior, even though the patients' troublesome, symptomatic

behavior amply demonstrates the need for it. Ironically, many supposedly therapeutic environments that give freely and non-contingently of what they have actually turn out, on closer scrutiny, to be biased in the direction of supporting pathological behavior. The reinforcement may be little more than sympathetic concern from the staff and other patients, or irritated reprisals, but either way the patient gets attention, a sense of "something happening," and a sense that he caused same effect (Coffman, 1962; Hunt, 1971).

In practice, the design and operation of a token economy requires effort and skill. Behaviors to be eliminated and constructive behaviors to supplant them must be specific and clearly defined. Systematic observations and ratings, instituted prior to the start of the program (to detect base rates of the behavior of interest) and continued through it (to monitor effectiveness and document change) should emphasize concrete, easily discernible actions and/or criteria to avoid errors that so easily creep into broad, impressionistic judgments.² Finally, an ecologically suitable reward system must be devised. This will ordinarily include not only points or tokens convenient to administer without delay, contingent on desirable behavior to concretize the program (particularly in its inceptional stages and for regressed patients), but also real amenities for which those symbolic rewards can be exchanged. Without the latter, unless prosocial behavior really makes a difference, the whole enterprise will be a sham!

Obviously, sophistication about organizational problems, patience, and skill in bureaucratic expediting also are necessary. If anything can go wrong, it usually does!

Responsive and appreciative attention, supervisory support, and realistic understanding of practical problems faced by both staff and patients are required to get the program started and to keep it viable (Loeber, 1971). Quite correctly, the staff will anticipate added burdens. Eventually, a properly designed program compensates by making the overall workload easier and more pleasant, but at first the attention to detail and other procedural aspects may seem a lot to ask. The staff may feel left alone with problems easy to solve in theory, but difficult in practice. Further, not only will the program have defects that have to be rectified but it must be open-ended and subject to change as patient behavior improves in order to avoid trapping patients in an infantilizing, routinized living situation. It is best to "start small," with modest initial goals that can be achieved quickly through a simple, robust (i.e., relatively foolproof) program, using powerful reinforcers to provide "success experiences" for staff and patients early on. Without staff support, no program—individual or group—can possibly succeed. Undercutting is all too easy. Without patient interest, or at least acquiescence, the enterprise degenerates into a power struggle.

Behavior influence is a two-way street! Though staff can control

reinforcement for the patients, the patients have substantial control over reinforcement for the staff, and exercise it (by succeeding or failing, by behaving well or acting out, etc.). The same relation holds between the staff and the administration: staff behavior reflects the administration's policy and practice, and vice versa. As in all other behavioral analysis, when acting out, noncooperation, and other behavioral problems occur at any level, one looks first to what those in control of the major reinforcing contingencies in the situation are doing. The behavior of the "controlled" population accurately reflects the contingencies, or lack of them, imposed by the "controllers." The goal, of course, is not to assign blame, but to determine what changes need to be made in the system, and where. The same rules apply in individual treatment, of course.

The reward system, and how it exchanges amenities for constructive behavioral growth, can pose problems of great subtlety. Especially for deeply regressed patients, both the specified performances and their consequences (extrinsic rewards) need to be concrete at the beginning. Except for those patients so impaired that they can achieve only the most elementary socialization and who require indefinitely extended custodial care, the program must aim toward moving into broader realms of constructive socialized behavior. Such behavior eventually has to come under the operant control of the intermittent social rewards that sustain all of us (e.g., real appreciation for a hard job well done; the development of interests and

standards that make some achievements intrinsically reinforcing). Otherwise, the goal of restoring the capacity for constructive choice and for self-control will not be achieved (Cohen, 1968; Cohen, 1971; Goldiamond, 1965, Goldiamond, 1974, Goldiamond, 1968; Hunt, 1971).

Several methods, usually in combination, favor the achievement of this goal. Quite simply, the program of concrete rewards for simple performance (e.g., a few points that can be awarded in the canteen for dressing and bed making) can be "faded out" (progressively withdrawn) to be replaced by bigger, better, more adult and normal rewards for more complex self-management and other prosocial behavior. Or the patient may qualify categorically for a new status that confers access to higher density and freer choice among a wider range of rewards, with continued adequate performance at some minimum level required to retain that status (e.g., from "ward" to "building" to "full privileges," move to a more nicely furnished ward, get a private room, go home for visits). Reinforcement by access to preferred activities ("Premack principle," see page 296) is particularly useful.]

Individualized Programs

These may be used for patients proving unresponsive to conventional treatment and ward milieus. Where token-economy procedures are used,

individuals who can do so improve enough to leave the basic ward-wide economy behind, meeting its standards of behavior as a matter of course (and going back to the token economy if these conditions are not fulfilled). In moving to individualized programs, patients should have as much responsibility as they can manage for choosing what behaviors to change and for monitoring their progress. They will differ considerably in their capacities here, and the actual program arrived at requires the exercise of good clinical judgment.

Sometimes desensitization is an essential preliminary step in behavioral modification programs. It can help to reduce fear and anxiety enough for a patient to stop avoiding prosocial target behaviors. Only when the patient can start performing them can he make contact with the reinforcements they produce. Details can be worked out, as far as possible, in discussions between patient and therapist, leading to a specific agreement as to what is expected, what is to be done, and how it is to be judged and rewarded. The agreement can be as formalized as a "contingency contract" (Agras, 1974; Goldiamond, 1974; Sulzer, 1962; Sulzer, 1965), but it must be specific and push the patient into contact with reality issues. The agreement provides a basis for commitment, but it should not be rewarded as such. To do so may short-circuit the therapeutic process by rewarding promises, however empty (Kamiya, 1969). Rather, reinforcement should be for realistic action toward fulfilling the agreement. The patient should play as major a role as he can in

record keeping, so he may be rewarded not only for performance but also for accuracy, perceptiveness, faithfulness, and other prosocial aspects of his performance. (Back-up monitoring by staff can provide necessary checks on corner cutting.) Some features should be left out of the program, as discretionary matters up to the patient or as performances that are to be expected of ordinary functioning people.

After all, the activities of half or more of the twenty-four-hour day are discretionary to some degree for most of us. Contingent access to these options powerfully reinforces our prosocial behavior on the job. It is important not to make the patient feel totally hemmed in, helpless, and segregated from the rest of humanity (the patient role does too much of that as it is). Further, maximum use of metaphors implying trust, autonomy, and self-control helps to avoid infantilizing the patient and blocking his growing capacity to exercise these virtues, as long as the metaphors contain a substantial element of realism and truthfulness.

Some form of patient diary to be discussed with the therapist in connection with awarding points and back-up amenities often provides the basis for differentially reinforcing progress to more subtle, self-regulating social functioning, including fantasy. Within this flexible format, and with this abundance of material, a sensitive therapist (in consultation with the patient) usually can discern easily what behaviors are causing difficulty, when and in

what regard escalation of the social level of the program is advisable, and even when all or part of the program as such can be discontinued. In effect, the therapist not only differentially reinforces overt behavior, but also what the patient says (writes) to himself about his own behavior, in effect producing a kind of behavioral control over intrapsychic events.

Interestingly enough, patients reaching and going beyond these advanced stages often continue to keep diaries and use the language of points and rewards long after transactions with the therapist have become largely cognitive and verbal. The concrete rhetoric, based on shared experience between the two people, seems to furnish a vocabulary for referring to things the patient finds it hard to verbalize abstractly. Similarly, through instruction by the therapist and firsthand experience, the patient often develops what might be thought of as a theory about his own behavior and its control by this time. Indeed, workable approaches to self-control often emerge from these experiences, with the "theories reinforced because they worked." Such cognitive formulations may be idiosyncratic, but more commonly are conventionally behavioristic, incorporating some of the conceptual schema used by the therapist. They can be of immense value in active mastery and self-control, if only through essentially obsessive-compulsive ritualization, provided regressive distortions can be avoided, and the patients have reasonably intact basic ego functions (Albert, 1974).

Even thinking, a covert operant response, or "coverant" as Homme calls it (1965; 1966), comes to be manipulated by the patient and to be useful as a means of controlling his own behavior (Salzinger, 1968; Staats, 1963). More overtly, the patient can arrange to maximize his time in situations that are discriminative for constructive behavior and to minimize or eliminate altogether his time in situations likely to be the occasion for the unwanted behavior. Better yet, the patient can even work toward re-discriminating the stimulus control over unwanted behavior by progressively restricting the range of situations that he permits to be the occasion for it and increasing the range of situations that are not (Ferster, 1962; Goldiamond, 1965; Goldiamond, 1974; Goldiamond, 1968).

For example, a subject of our acquaintance controlled and finally eliminated cigarette smoking by, first, never smoking while standing up and working, then only smoking while seated in a particular chair, and then moving that chair to an out-of-the-way room where she rarely had time to go. Because she was a busy housewife, the numerous situations that formerly had been the occasion for smoking lost their discriminative control over this behavior and became the discriminative stimuli for competing family-oriented behaviors that were strongly reinforced for themselves.

Manipulation of external discriminative control is critical to management of eating in obesity. Schacter (1971) showed that the eating

habits of obese subjects are controlled to an unusual degree by external cues, as compared with normal control of eating through internal cues related to need and repletion. Obese people must re-discriminate eating to fixed times and places (meal times), and not combine it with other recreational activities such as reading or watching television, and regularize it as to amount and kind of food eaten (Ferster, 1962; Stunkard, 1972). Stuart and Davis (1972) have described in detail a program for this purpose, extending it to include control of exercise, dietary regimes, and record keeping. The patient is given a theory of behavior control, a set of specific instructions as to what to do (rituals?) with record keeping and explicit standards to provide evaluative feedback for differential reinforcement of performance in re-discrimination. The program is well designed, and probably has been successful because of its completeness. Followed long and carefully, it should restore sound habits of eating and exercise. Indeed, the only aspect not covered fully is the problem of achieving commitment, though a few practical suggestions are made to that end. Measures to control fantasy about food and eating should aid materially (Pliner, 1973).

The emphasis upon producing a repertoire of prosocial behavior, rather than eliminating unwanted symptoms directly by extinction or punishment, attempts to avoid complications likely to develop if the flux of the ordinary amenities of life for the patient drops too low, or if he feels coerced. Extinction generally blocks whatever gratification the patient is receiving, and

the point is to help the patient establish more effective ways of obtaining it, and more of it. Extinction is somewhat aversive, besides (Coughlin, 1972). Punishment and extinction, if used without reward, generate side effects and by-products that lead to power struggles and other counterproductive events. Punishment that "really hurts" (e.g., even loss of points, restrictions) should be reserved for quickly stopping behavior that actually endangers the patient and others (e.g., fighting). Even then extinction and punishment should be in the context of a fundamentally appetitive program in which constructive behavior can earn rewards to replace what punishment takes away. Furthermore, appetitive control is associated with the subjective feeling of freedom, and aversive control with feeling coerced (Skinner, 1971). Such effects on subjective state and self-perception are important if fostering autonomy is a goal, and if, as often happens, the patient's transference distortions center around control and rebellion. Prisons and other situations in which the control is preponderantly aversive, however tightly organized, have not produced remarkable therapeutic effects. Rather, they appear generally to produce sullen compliance while the contingencies are in effect, punctuated by episodes of serious symptomatic behavior, escalating power struggles, and skillful evasion.

Mixed Procedures

This section considers procedures that probably involve so much

interpenetration of Pavlovian, operant, and cognitive control, regardless of the intent of their developers, that they should be considered as mixed strategies. Practice of behavioral therapy increasingly utilizes hybrid procedures. While many have been described, discussion here can cover only major varieties of special interest.

Modeling, or observational learning, as developed by Bandura (1968; 1969), capitalizes on the human capacity to profit from other people's experiences as observed. In therapeutic applications, a patient with fears observes either live or filmed situations in which other people (serving as models) approach and manipulate the object of the patient's particular fear, happily and without incident. The modeling situations may follow an hierarchical script in which the model comes into increasingly close contact with the feared object in successive scenes, or may simply depict extended contact. Some clinical work, plus a good deal of laboratory experimentation, particularly with children, indicates that the observational learning provided by this technique not only can significantly attenuate common fears (e.g., of snakes, dogs) but also influence subsequent behavioral output, as the observer learns from seeing what behavior produces rewards and punishments for the model (Bandura, 1963).

Observational learning plays a critical role in socialization. Important aspects of personal style, personal values, and standards are acquired, in

identification, empathically and imitatively (and, perhaps, quite obliquely) through interpersonal observations and the fantasies and other responses these generate. Laboratory studies on modeling contribute to extending our behavioral theories into the realm of imitation-identification that is so characteristically human and so critical for self-control (Aronfreed, 1968; MaCCoby, 1970).

Current interpretations recognize that observational learning or modeling, among its other effects, provides opportunities for Pavlovian and operant conditioning and extinction to change the functional significance of stimuli—their evocative, reinforcing, and discriminative powers—for the observer. With respect to behavioral therapy, these changes reflect systematically what the model is perceived to do and is presumed to experience, providing the basis for learning by imitation and for vicarious desensitization.³

The positive *manipulation of fantasies* plays a growing role in the behavioral treatment of sexual and other deviations. For example, sexual deviants tend to show substantial concordance between their behavior and their sexual fantasies, with successful treatment producing parallel changes in both (Feldman, 1971). Sexual fantasies appear to become particularly acute during the pre-orgasmic crescendo; orgasm probably serves as a potent reinforcer, both conditioning the fantasy as a stimulus for excitation and

supporting the voluntary resort to specific fantasies, as covert operants (Homme, 1965), to produce or enhance arousal. From this perspective, changes in sexual fantasy could lead to and support changes in overt behavior. In treatment, sexual fantasies are altered by shaping and fading techniques; initial arousal is produced by deviant fantasies (or pictorial representations of them), followed by having the patient masturbate, with the deviant fantasy or stimulus replaced by more conventional heterosexual representations just prior to orgasm. With repeated (self-administered) treatment, the normal fantasies or stimuli are shifted to progressively earlier points in the sequence to support the development of normal patterns of arousal, e.g., Marquis' "orgasmic reconditioning" (Marquis, 1970). Davison (1968) used a variant of this technique in a partially successful attempt to eliminate sadistic fantasies and augment limited sexual capability. (See Abel and Blanchard, 1974, for an extended discussion of this general approach.)

The role of fantasy as a factor in behavioral therapy is only beginning to receive the attention it deserves. Hunt and Matarazzo mention the possible contribution of recurrent fantasies of smoking as possibly interfering with treatment of that habit (Hunt, 1973); dieters frequently comment on the arousing effects of frequently recurring thoughts of food. Not only can fantasies arouse powerful incentive motivation (Logan, 1973) but they are also embedded in the totality of a person's existential life and are tied associatively to many internal representations of other incentives,

consequences, and values. Patient diaries, as suggested in the discussion of individualized behavior modification programs, maximize access to such material, of course.

Aversive techniques, both Pavlovian and operant, employ noxious stimuli to eliminate behavior. Pavlovian conditioning ("aversion") aims toward eliminating unwanted behavior by pairing it, or the stimuli that evoke it, with electric shock or some other similarly unpleasant stimulus. In the operant mode, shock (or another aversive consequence) punishes the behavior when it occurs, or is used in connection with anticipatory avoidance training in which the patient can avoid aversive consequences altogether by refraining from the undesired response in the face of temptation.

Stimulus satiation, in which the unwanted behavior is "punished" with an over-supply of the apparent reinforcer, is a "paradoxical" aversive technique. For example, Ayllon and Houghton (1962) stopped a psychotic woman from hoarding towels by giving her all she asked for, plus additional towels as often as the staff could, until her room was so full that she asked for the towels to be taken away. Having a patient smoke a number of cigarettes simultaneously and continuously, far beyond his interest in or capacity to enjoy them, has been used to curb smoking. Feather and Rhoads (1972) instructed a patient with a compulsion to pick up paper to pick up all the scraps he could find. Yates (1970) gave a patient with tics massed practice in

performing them deliberately. These approaches, sometimes also called "negative practice," "paradoxical intention," or "beta learning," may be interpreted in various ways: as producing stimulus satiation to the point of aversion, as building up conditioned inhibition against performance, as containing an element of ridicule, as giving "permission" for the behavior, or—in the case of behavior the patient is unaware of or repeated errors—as aiding in regaining control through improved discrimination of the response.

In both modes, Pavlovian and operant, stimuli that evoke the behavior, that are the occasion for it, or that arise from it become conditioned aversive reinforcers through pairing with primary aversive stimuli. "Other behavior," including "not responding" is reinforced when it gets the tempting stimulus turned off or gets the patient out of the situation. While early work emphasized elimination of behavior alone, recent, more sophisticated efforts systematically reward and support alternative behaviors, usually incompatible with the target symptom, by direct reinforcement in addition to reward by escape-avoidance ("counterconditioning" [Franks, 1973, Rachman, 1969]). In practice, the Pavlovian-operant distinction here is more in metaphor than in process.

Typically, aversion treatment pairs shock, or nausea from drugs or drinking salt water (or in one case, terror, arising from transient paralysis produced by intravenous infusion of succinylcholine [Sanderson, 1963]) with

smelling and/or tasting alcoholic beverages, with looking at male nude pictures, with cross-dressing, or whatever. Antabuse treatment for alcoholism is a prototype, but the delay in reinforcement—the irreducible interval between the thoughts, sights, tastes, and smells of beginning to drink and the inevitable onset of somatic distress—reduce the effectiveness of conditioning. Electric shock, which is easily controllable, has been found at least as effective, temporarily, in intensities not harmful to the patient. In the "aversion-relief" variation, the patient initiates and then reverses the unwanted behavior on instructions from the therapist. When the behavior starts, shocks are given repeatedly; when it stops or reverses, the shocks stop. Supposedly, the shocks produce conditioned aversion to the behavior (and the stimulus that arouses it) and cessation of shock a relief that rewards refraining.

Cautela (1966, 1967) has proposed that the aversion procedure be carried out entirely within the patient's imagination. This "covert sensitization," in reversal of Wolpe's desensitization, has the patient relax, then imagine initiating the unwanted activity (e.g., drinking, eating) and then imagine the development of severe nausea (in graphic detail!). After a number of repetitions, some patients have been able to stop drinking, lose weight, etc. The procedure really is a simplified, one-sided version of Homme's (1965) use of "coverants" in self-control, and indicates the potential contribution of cognitive factors and operant control to results supposedly

obtained through Pavlovian conditioning (see also Barlow, 1969; Mowrer, 1960; Salzinger, 1968; Staats, 1963).

Birk et al. (1971) have reported by far the most sophisticated therapeutic avoidance experiment so far. Carefully selected male homosexuals, in the middle of long-term group therapy, were subjected to a behaviorally powerful operant-avoidance contingency. The task required repeated key pressing to forestall shocks that otherwise would occur every two to fifteen seconds as long as an erotic male picture was presented. The avoidance responses not only forestalled shock, but also changed the picture to one of a female during which no shock ever was given. Escape responses, made during a shock, terminated the shock and changed the picture, too. In the female picture, though a "safe" signal, the patient had to press the key at least once every one-half second or the male picture and its shock contingency would return. The patients furnished their own male "erotic" pictures and pictures of female acquaintances to ensure appropriate stimulus characteristics. In effect, the patients (1) had shocks paired with their individualized homosexual erotica; (2) had to get rid of that stimulus to avoid shock; (3) had freedom from shock ("safety") only in the presence of the female stimulus; and (4) had to work hard to keep from slipping back into the "dangerous" male erotic stimulus and its shock contingency. The experimental patients not only learned avoidance, which was incompatible with viewing the male picture, and to keep the safe female signal on (they

reported that that stimulus produced a feeling of "relief") but also in four out of five cases showed dramatic temporary decreases in homosexual behavior, as compared with a control group. Subsequent clinical follow-up after several years, however, revealed that only two of the four patients had achieved any enduring or deep change toward heterosexuality. The authors remarked presciently on the difference between suppressing homosexual behavior and helping a patient to develop appropriate heterosexuality. The latter requires real relationships with females and other supports for heterosexual behavior. They also questioned how "successful" a treatment can be if it leaves the patient without a sexual outlet.

Whether aversive therapy works primarily through Pavlovian aversive conditioning may be questioned. The study by Birk et al. (1971) demonstrated aversive control, but within an operant-conditioning framework that hypothesizes no mediating fear or anxiety as necessary for this kind of avoidance. Much of the work with aversive therapy, however, has been within a framework that hypothesizes the conditioning of fear or anxiety reactions as a mediating and intermediate step (Franks, 1973; Leitenberg, 1971). A recent report by Hallam, Rachman, and Falkowski (1972) indicates that, contrary to expectation, patients given shock-aversion therapy reported the development of repulsion or indifference, not anxiety, and that no evidence of conditioned cardiac or skin resistance changes appeared after treatment. Perhaps, then, and in view of the moderate rather than

excruciating shock levels usually employed (else the patients might terminate, rebel, or sue) the aversive shocks may convey information rather than condition in the classical Pavlovian sense, and functionally reward the subject for displaying appropriate behavior or preference. Or the patient's persistence in continuing with an admittedly unpleasant treatment may reflect an all-important commitment that serves as the major ingredient in producing change.

Information as "reinforcement" plays a conspicuous role in "biofeedback" training for human subjects. Here visceral, skeletal motor, or other physiological reactions usually inaccessible to detection by the responder are converted into audible or visible signals by suitable transducing instrumentation. On instructions, the motivated subject attempts to maximize the signal indicating he is making the desired response (e.g., a sound or light signal) and to keep on doing it, whatever it is. Auditory signals generated by myographic recorders have been used in feedback to facilitate learning Jacobson's progressive relaxation (Stoyva, 1973). Feedback-trained relaxation has been applied to treatment of tension headaches (Wickramasekera, 1972). Miller (forthcoming) has applied biofeedback training to lowering blood pressure in hypertensive patients. Kamiya (1969) and others have been able to increase EEG alpha time by biofeedback, but therapeutic values of this effect, and of most other therapeutic applications of biofeedback, remain to be verified. Biofeedback procedures applied to

visceral, central-nervous-system, and skeletal-muscle responses offer possibilities for new approaches to psychosomatic disorders (Miller, forthcoming) and to otherwise inaccessible aspects of self-control (Hefferline, 1971). They also raise basic problems as to how behavior is organized and controlled (Hefferline, 1973; Hefferline, 1971; Hefferline, 1959; Hefferline, 1963). (For more extended accounts, see references Barber, 1971; Kamiya, 1971; Miller, forthcoming; Shapiro, 1973.)

Information also plays a major role in *social feedback* and *behavioral rehearsal* using videotape playback of patient behavior. Here, the patient can see a sample of his behavior, judge it, re-perform it, observe improvement, and so on (Alger, 1969; Berger, 1973, Paredes, 1969; Shapiro, 1973; Shean, 1972; Smith, 1969). The self-monitoring effect is similar to that in the use of audiotape feedback in music training. Albert et al. (submitted) have used video playback as an adjunct to aid patients in acquisition of social skills and perceptions. These workers also attempted to foster autonomy (through patient selection of goals), feelings of equality (by role reversals with the therapists), desensitization and learning of coping methods for special problems. The treatment team and the patient role-played selected passages from dramatic works covering sensitive problem areas, with content somewhat removed from the patient because the words used were the author's not the patient's. These methods are in their infancy, and their scope and effectiveness are uncertain. They may provide a behavioral approach,

however, to objectifying and influencing subtleties of complex social interaction. (For an integration of videotape playback with a behaviorally oriented, group-treatment program, see Kass, 1972.)

In J. P. Brady's use of metronome pacing of speech for stuttering, sophisticated behavioral and clinical modifications turned a powerful but practically limited technique into an effective therapeutic tool (1971). Brady made the metronome portable and cosmetically satisfactory by using a hearing-aid design, placed control of rate and loudness with the patient, and added desensitization and fading procedures to improve fluency and provide for eventual fluency without the attachment. In desensitization, the patient started in situations of low-stuttering potential, using slow metronome pacing. As fluency was attained, metronome rates increased, and the patient graduated to progressively more challenging situations, in vivo. Care was taken not to push escalation of either rate or challenge too fast, and the patient was always free to retreat to slower rates for more practice and desensitization if trouble developed. In fading, which began after reasonable fluency had begun to be attained, the use of the metronome progressively decreased, first in the easier and then in the more difficult situations. At any time, the patient could resort to the metronome if speech difficulties threatened; such brief "retraining" often aborted what could have become serious attacks of stuttering. Patients also used in vitro imaginal desensitization at times, and had conventional speech therapy for grimaces

and other anomalies that sometimes occur in stutterers. As Brady indicated, many factors—Pavlovian and operant conditioning, desensitization, and cognitive and expectational changes—probably contributed to the total effect. That some specific learning was involved, however, is suggested by the small, temporary performance decrement that occurred when the patients switched from a desk metronome to the hearing-aid form early in treatment.

A. A. Lazarus' *Behavior Therapy and Beyond* probably represents the most free-swinging, mixed strategy of all (1971). He departs radically from the stimulus-response-reinforcement rhetoric of behaviorism in essentially clinical analyses of complex psychotherapeutic interchanges. The guiding framework remains in the behavioral tradition (cognitive social learning variety) but some behaviorists decry his deviationism. The presentation leans heavily on case material and transcribed interviews oriented to specific clinical problems, and its major points are clear. Working, eclectic psychotherapists will appreciate his practical sophistication. D'Zurilla and Goldfried (1971) treat behavioral therapy as problem solving, within a cognitive social learning framework. The presentation parallels Lazarus in many ways, but is more academic and rationalistic in tone. Lazarus' title is descriptively accurate and also may be prophetic. If and when cognitive social learning and self-control theory really develop, however, he may find himself closer to the central focus of behavioral therapy than he is now.

Psychodynamic Behavioral Therapy

Behavioral therapists tend to shy away from explicit use of psychodynamic concepts and methods. Continued experience and further maturation, however, may demonstrate that undue adherence to a parochial isolation leads to overlooking much that is important. Marmor (1971) has noted how complex dynamic aspects of the treatment situation may contribute to or hinder behavioral therapy. His most telling example calls attention to the way Masters and Johnson (1970) integrate desensitization into a complex treatment strategy for relief of sexual inadequacy. Here, the marital dyad and the family, viewed dynamically, are dealt with as a unit, with desensitization representing only part of the therapy. Proper management of the total situation probably enhances the effectiveness of the behavioral desensitization. The Birks (1974) similarly see an opportunity for "synergistic cooperation" between dynamic and behavioral approaches. They have developed an explicit schema showing how and in what ways behavioral and insight-interpretive methods can be used as complements, for maximal effect.

Feather and Rhoads (1972; 1972; 1974) have presented a rationale and illustrative case material showing how psychodynamic inferences can be used to identify appropriate response classes and effective stimuli for reinforcement-extinction, and help in determining the sequencing of treatment in an unmistakably behavioral format. In "psychodynamic behavior

therapy," the diagnostic analysis extends beyond symptoms to inferences as to underlying conflicts so that dynamic theory can suggest what to deal with in treatment. Then, a behavioral perspective suggests how these problems should be dealt with, e.g., desensitization, manipulation of fantasy in paradoxical intention, re-discrimination. Psychodynamic theory contributes specifics as to content, while procedures are drawn from current behavioral methods. See also Birk (1974).

The matter of content is an important consideration in behavioral therapy because behavior theories tend to be so abstract and paradigmatic in dealing with stimuli, responses, reinforcers, and the like. In clinical application, specifics of content can make all the difference in the world, however, and selections must be made on some basis. In the usual behavioral approach, common sense (or, often, cryptically employed clinical or dynamic sophistication) determines the selection. Feather and Rhoads simply suggest the systematic and explicit use of dynamic theory in this process and in determining the specifics of behavioral treatment.

Nothing here should be taken to imply that research seeking to determine the effective ingredients in psychotherapy may casually mix behavioral and dynamic concepts without regard to assumptions or consequences, just to be "eclectic." Rather, in the absence of competing personality theories of equal stature and completeness, sophisticated

awareness and explicit use of dynamic formulations may be turned to advantage in behavioral therapy.

Dynamic knowledge can help therapists make shrewd guesses as to what is controlling problem behavior, and how, i.e., what the patient is working to get, what circumstances he sees as favorable for getting it, and what constructive substitute behaviors and rewards he might be able to settle for (Hunt, 1968). Such knowledge can also help in selecting the most appropriate target behaviors, which may not be the most flagrant symptoms. Patients can trap a therapist by luring him into a power struggle that is most difficult to win, if indeed one ever would want to or need to. From dynamic theory, we can guess that some anorexic patients, for example, literally are willing to die in behalf of rebellion against control, and respond much better to an indirect behavioral approach than to a frontal attack on food intake. Stunkard's (1972) successful use of access to activity as a Premack type of reinforcement for weight gain illustrates such an indirect approach.

Further, dynamic theory highlights the importance of the personal relationship between patient and therapist and touches on how it may be manipulated. This is not often considered explicitly in the behavioral literature, but it should be. Without an effective relationship, the therapist cannot be an effective source of social reinforcement for the patient. (These probably represent just two different ways of saying the same thing!) The

behavioral literature rarely even touches on transference, yet many failures may arise from the distortions and resistances it introduces. Rhoads and Feather have observed it and suggest ways in which it may be used therapeutically (1972).

Finally, countertransferential reactions of the therapist are never mentioned, though such reactions on the part of other staff are noted in terms of undercutting, "rescue fantasies," disliking certain patients, and the like. These reactions in the therapist, if he is unaware of their very real possibility, can seriously distort planning and decisions and their execution in treatment. Supervisory experience with therapists learning behavioral techniques shows countertransferential problems to be not only important when they occur but also surprisingly ubiquitous even in the supervisor. The risk is always present in this as in any other psychotherapy. Behavioral therapists can help minimize it by always placing the patient's welfare first, being attentive and responsive to the detailed course of events in treatment (never leaving powerful contingencies solely in the hands of unsupervised, untrained staff), always remaining aware of the imminent possibility of countertransferential distortions, and taking frequent counsel with a trusted and competent colleague when things are going badly, when they are going well, or "just because."

In addition, the most sparing use of aversive controls, leaving the

patient with large areas of discretionary control and realistic choice (including the choice not to participate), and an emphasis upon positive reinforcement to promote development of a prosocial repertoire and behavioral skills will go far to ward off dangerous consequences of countertransference. Problems of ethics in relation to psychotherapeutic and behavioral treatment deserve more detailed consideration than possible in this chapter. London (1969) and Goldiamond (1965) should be consulted for recent general reviews of this complex topic, and James Burnham's *The Machiavellians: Defenders of Freedom* (1943) for background as to the necessity for unremitting vigilance in these matters. More particularly, it is important to remember that behavioral therapy, as any other, aims (or should aim) to restore to the patient the possibility of choice among viable, alternative ways of coping, rather than coerce adoption of a particular pattern (Kazdin, 1974). Actually, the possibility of seduction is greater than the risk of outright coercion!

Final Comment

Whether behavioral therapy works for the reasons it is supposed to work is far from settled despite favorable presumptive evidence. Behavioral therapy is really a set of techniques with a set of metaphors for behavioral processes tacked on. Most if not all behavioral phenomena can be "explained" by alternative metaphors. Which set points to the "better way" is equally

unsettled. In addition, nonspecific factors such as attention, expectancy, placebo effects, structure, and factors as existential as self-esteem, perceived autonomy, and the glimpsed possibility of escaping from hopeless dilemmas all contribute, and no doubt more in some cases than in others. In some cases, it is more than possible that the ritual and the rationalizing metaphor of behavioral treatment allow the patient to relinquish unwanted symptoms without relinquishing dignity and self-respect.

If behavior disorders are really nothing more than problems in living, as some think (Szasz, 1961), then behavioral and other psychotherapies have taken on nothing less than the task of producing the good life! If the job is incomplete, no one should be surprised, but neither can one fault the behavioral therapists for not trying.

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Notes

- 1 Target behavior all too often refers to symptomatic and unwanted behavior to be eliminated. The more important referent should be the new, constructive behavioral repertoire that treatment aims to produce, as a goal.
- 2 Observation, as such, may be highly "reactive," producing at least temporary behavior change by itself (Higgs, 1970; Webb, 1966).
- 3 For more rigorous behavioral analyses of these and other aspects of imitation-identification, see Gewirtz and Stingle (1968).