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THE BEHAVIOR THERAPY APPROACH

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Most psychiatric therapy is directed at overcoming habitual or repetitious unadaptive behavior. All habits depend on the specifics of neural organization, which is ordinarily shaped by physiological development, learning, or both. Unadaptive habits, however, sometimes result from physiological "distortions" due to lesions of the nervous system or to biochemical abnormalities, such as circulating toxins, or to disorders of endocrine secretion. It is a reasonable presumption that when an unadaptive habit has come into existence through learning, it should be erasable by learning. Experimentally established knowledge of the learning process and of the factors influencing it has generated a range of new procedures for modifying or eliminating unadaptive learned habits; and this is what is known as conditioning therapy or *behavior therapy*. All unadaptive habits based on learning are proper targets for behavior therapy. Its main applications have been to the neuroses, to other learned habits that do not fit the definition of neuroses, and to those unadaptive habits of schizophrenics that are based on learning.

Immediately it must be noted that the unadaptive learned habits amenable to behavior therapy have for centuries been treated by other methods, often successfully. This means that when soothsayers or priestly counselors and, later, psychoanalysts, nondirective therapists, or Christian Scientists have achieved success, a learning process relevant to the unadaptive habits concerned must have gone on. Since the efforts of these healers were never aimed at the stimulus-response bonds central to the offending habits, it must be concluded that whatever habit changes they achieved were due to inadvertent and unprogrammed events that occurred during their interactions with their patients. In behavior therapy a neurotic anxiety response habit can usually be systematically eliminated by counteracting the anxiety response by another emotion incompatible with it. In *any* kind of therapy, if a patient happens to have fairly strong nonanxious emotional responses to his therapist, it may be supposed that neurotic anxieties tending to be aroused by relevant verbal stimuli will sometimes be inhibited by the ongoing therapist-evoked emotion—thus weakening the anxiety habit in much the same way as when "therapeutic" emotion is deliberately counterposed to anxiety in behavior therapy.

If the behavioristic view of the nature of neurosis is correct, it follows that treatment will be both less time-consuming and more effective if it adds to the inadvertent interpersonal therapeutic effects, the effects obtainable by the deliberate employment of methods based on learning principles. This

deduction has received a good deal of empirical support both clinically (Wolpe, Moore, Sloane, *et al.'* and in laboratory contexts (Lang, Lazovik, and Reynolds, Paul, Paul and Shannon, Paul, Mealiea and Nawas).

The Clinical Field of Behavior Therapy

Among the habits based upon learning that are the natural targets of behavior therapy, the commonest are the following:

The Neuroses

A neurosis is defined as a persistent unadaptive habit that has been acquired in one or a succession of anxiety-generating situations. Anxiety is almost always a central component of neurotic habits. While the central role of anxiety is quite obvious in a great many neurotic patients—those with anxiety neuroses, phobias, tension states, interpersonal anxiety, and "free-floating" anxiety—there are others in whom its presence is obscured by symptoms secondary to it. The patient's main complaint may be of sexual inadequacy, homosexuality, transvestism, asthma, migraine, peptic ulceration, obsessional behavior, stuttering, or blushing, or it may take the form of a "character neurosis"—among other possibilities. Yet when such cases are subjected to behavior analysis—an analysis of the relations between neurotic responses and their antecedents—it almost invariably turns out that anxiety

is their crux. The stutterer, with only rare exceptions, is found to stutter only in social situations that make him anxious; the asthmatic or the peptic ulcer patient has somatic attacks in situations that raise his emotional tension.[1] When women are frigid or men are impotent, it is usually because of anxieties that are evoked by features of sexual situations. Most homosexuals have either interpersonal anxiety toward people in general, with an emphasis on females, or specific anxiety evoked by women in contexts of physical intimacy. Similarly anxiety is the wellspring of kleptomania, adult tantrums, and other manifestations of "character neurosis," as well as of many depressions (Wolpe) and of most obsessions and compulsions, the patient characteristically becoming anxious when he does not perform his rituals. The only kind of neurotic case in which anxiety is consistently not found is the classical hysteria with *la belle indifference.*

Unadaptive Learned Habits Other than Neuroses

Many unadaptive learned habits seen in otherwise normal people do not conform to the definition of neurosis given above in one way or another, usually because they have not originated in anxiety-generating situations. Such habits arc most often encountered in young children, common examples being enuresis nocturna, encopresis, nail-biting, thumb-sucking, tantrums, aggressiveness, and disruptive classroom behavior. Adult examples are habitual tardiness, frittering away of time instead of settling down to

assignments, and "localized" reactions, such as a retching response to dentures in the mouth (Stoffelmayr) and some cases of anorexia nervosa (Bachrach, Erwin, and Mohr, Scrignar).

The Learned Habits of Schizophrenics

I believe that schizophrenia is basically an organic illness (for example, Gottlieb et al., Rubin). Some of its manifestations, for example, associational gaps in thinking (see Chapman), appear to be a direct function of the biological abnormality. Rut other schizophrenic behavior seems to be the result of the organic state's predisposing to the acquisition through learning of bizarre habits. These latter habits are modifiable by the use of learning procedures.

Paradigms Commonly Employed in Behavior Therapy

Positive Reinforcement

Owing to the influence of Skinner, positive reinforcement has come to be the most widely studied and dissected paradigm in the whole field of conditioning. Any response is rendered more probable if it is followed by *reinforcement* in the form of food, water, sex, money, affection, or anything else that is "rewarding" to the individual organism. Eventually, of course, an asymptote, or maximum habit strength, is reached. This relationship— the

strengthening of habits by rewards—has been demonstrated with great constancy in simple organisms as well as in man. Typically the experiments have involved musculoskeletal behavior; and this is also true of most of the therapeutic applications of positive reinforcement (Ayllon and Azrin, Schaefer and Martin).

Negative reinforcement is a term applied to the special case where the "reward" derives from the *removal* of some disturbing stimulus, such as continuous electrical stimulation, or any other source of stress.

Extinction

Extinction is the progressive diminution of the probability of a response that is repeatedly elicited without reinforcement, that is, without being followed by any kind of "reward" as defined above. The habit-weakening thus procurable is, in general, just as reliable as the habit-strengthening with reinforcement. Rut it can be impeded by certain factors—notably if there was intermittency in the reinforcements by which the habit was established. As Thomas has noted, resistance to extinction is frequently high in clinical cases because the behavior to be extinguished often has a long history of intermittent reinforcement. Therefore, once treatment has begun, the cessation of reinforcement must be complete.

Conditioned Inhibition Based on Reciprocal Inhibition

A considerable number of methods implement this paradigm, which has had its main applications in eliminating unadaptive autonomic habits, especially anxiety. *Reciprocal inhibition* (Sherrington) is the activation of a reaction incompatible with that expressing the habit to be weakened. The model for reciprocal inhibition therapy was derived (Wolpe) from observations on the treatment of experimental neuroses—habits of severe anxiety induced by shocking an animal in a small cage—habits as strangely persistent as the neuroses of man. So severe is the anxiety conditioned to the experimental environment that the neurotic animal will not eat there even if he is starving. Rut the animal will eat in a place remotely similar to that in which he was shocked and where there is only weak anxiety; and repeated helpings of food there diminish this anxiety to zero. Environments increasingly similar to the experimental environment are similarly treated, until finally even the experimental cage loses its ability to elicit any anxiety.

While feeding has also been used for the gradual deconditioning of human neuroses (Jones)'' other anxiety-inhibiting responses have been found to be more widely applicable.

A notable example of reciprocal inhibition applied to emotions other than anxiety is *aversion therapy.* Here an unpleasant response, such as produced by a strong electrical stimulus to a limb or by suggested nauseation (Cautela), is made to inhibit unadaptive pleasant excitation—aroused by a

fetishistic object, for example.

Retroactive Inhibition

Much unadaptive behavior results from people having acquired objectively incorrect cognitive associations. For example, a patient who has lapses of memory because of pervasive anxiety may believe that these are an indication of advancing intellectual deterioration, to which belief additional anxiety is quite a natural response. It is necessary to attach the awareness of these lapses to the idea that they are the result of anxiety and without organic significance. In other words, the wrong cognitive response must be replaced by the correct one. The therapist must repeatedly and forcefully provide the new association. Each time the new response is evoked, there is an inhibition of the tendency to perform the old response and a weakening of its habit. This process, known as retroactive inhibition, is the basis of ordinary forgetting. As Osgood has pointed out, it is an instance of reciprocal inhibition.

Conditioned Inhibition Based on Transmarginal Inhibition

In recent years there have been many reports (for example, Malleson, Frankl, Stampfl and Levis, Wolpin and Raines, Wolpe) of the overcoming of neurotic fears by exposing patients either in reality or in imagination, usually for prolonged periods (10 to 60 minutes), to strongly anxiety-arousing

stimuli. Many of these patients have improved markedly, and some rapidly. The most widely accepted label for procedures of this kind is *flooding.*

If a conditioned stimulus is administered to an animal at various intensities, it is usually found that as stimulus intensity rises the strength of the response increases until it reaches an asymptote—that is, remains at its top level no matter how much stronger the stimulus becomes. But sometimes, after the response has reached maximum strength, its evocation paradoxically becomes weaker as the intensity of stimulation is further increased. Pavlov used to call this kind of inhibition of response *transmarginal inhibition.* By analogy with reciprocal inhibition I have proposed that habit strength may be decreased if the response has undergone transmarginal inhibition; and this may be the mechanism of change by flooding (p. 192).

The Clinical Examination

There is a rather widespread belief among people outside the field that the behavior therapist plunges into conditioning techniques after a superficial scanning of his cases. It is imagined, for example, that a patient who complains of fears of crowds will be subjected to desensitization (see below) to crowd stimuli without ado. In point of fact, a careful investigation is especially necessary in preparation for behavior therapy because the

therapist can only proceed rationally if he has a clear and exact knowledge of the relations between the unadaptive responses and the stimuli that trigger them. First, the therapist makes a comprehensive inventory of the patient's complaints, that is, the reactions he finds uncomfortable, distressful, or disadvantageous. Then he takes a complete history of each complaint, starting from the circumstances of its onset, and following it through its vicissitudes up to the present time. It is frequently found that a neurotic reaction has become worse with the passage of time, generally because the power to evoke it has spread to a widening range of cues on the basis of second order or multiple order conditioning (Wolpe). For example, a woman with a fear of crowds began to manifest a secondary conditioned fear of movie houses and other public buildings following an occasion when a movie house unexpectedly filled with students while she was sitting there.

Because the patient's current stimulus-response relationships will be the target of therapy, it is to them that the most searching examination is given. Since anxiety is, as stated above, usually the central constituent of neurotic reactions, the greatest amount of attention is generally given to identifying its eliciting stimuli. But in the many cases that do not present themselves as overt anxiety problems, such as frigidity or stuttering, the first task is to try to establish whether anxiety is a precondition of the presenting syndrome—as it usually is. Then the antecedents of the anxiety will, in turn, be determined.

After the patient's presenting reactions have been explored, the therapist takes a general history of his life and background. He inquires about early relationships with parents and siblings, special relationships that may have existed with grandparents, religious background and training, traumatic experiences, and neighborhood life. Next he surveys the patient's education—whether he enjoyed school, how well he did academically, whether he took part in sports, whether he made friends, and whether there were any stressful relationships. The patient is asked when he left school and what he then did and how he got on at each institution or place of employment, both occupationally and with respect to personal relationships.

The patient's sex life is then traced from the time of his first awareness of erotic arousal. He is asked about the practice of masturbation and his beliefs and emotional attitudes toward it, and about his love relationships, dwelling upon the important emotional involvements. Each relationship, in turn, right up to the present time, is examined in detail, both socially and sexually.

After the anamnesis the patient is given several inventories to fill out. The Willoughby Schedule (Willoughby) consists of 25 questions that yield information on a five-point scale about common areas of neurotic activity and about general emotional sensitivity. The Fear Survey Schedule (Wolpe and Lang) lists 108 stimulus situations to which a fear is unadaptive and to which

response is made on a five-point scale. The Bernreuter Self-Sufficiency Inventory provides information with regard to dependency habits.

Unless the patient has been referred for treatment by a physician (and sometimes even then), a medical examination should be arranged if there is any suggestion at all that organic disease may have a role in his illness. A particularly common indication for this is a history of episodic attacks of anxiety to which no constant stimulus antecedents can be related. Frequently such episodes turn out to be based upon functional hypoglycemia (Conn and Seltzer, Salzer).

Behavior Therapy Techniques in Particular Syndromes

Neurotic Syndromes

In the majority of neurotic patients we find combinations or assemblages of syndromes. As previously stated, anxiety is at the crux of the great bulk of them, so that very often, sooner or later, the treatment is that described below for the common phobias and allied reactions. Therefore, this must receive especially full coverage. But quite frequently a particular syndrome may deflect the course of treatment in special ways. We shall therefore consider treatment in relation to various syndromes. It should be noted that in certain complex interactions of responses and in cases resistant

to routine techniques, considerable variation from the procedures described may take place.

The Common Phobias and Allied Reactions

The distinguishing feature of a phobia is that the patient responds with anxiety to a particular class of stimuli to which there is no rational motor or verbal response. The stimulus classes comprising the classical phobias involve easily defined stimulus configurations, such as crowds, animals, enclosed spaces, heights, and darkness. However, numerous stimuli that are outside the ambit of those classically associated with phobias—perhaps because they are less easy to define—can also be the antecedents of anxiety reactions according to the above-mentioned criterion, such stimuli as feelings of losing control, hearing expressions of disapproval or of praise, or seeing people quarreling. Because in a stimulus-response sense there is no difference between the latter group of reactions and the classical phobias, they are treated by the same methods.

Systematic Desensitization. Systematic desensitization is the most widely used technique for the treatment of phobias and related reactions. In its general outlines it is similar to the method that was used for treating experimental neuroses, alluded to above. In the standard procedure the emotional effects of deep muscle relaxation take the place of those of feeding

as the means of inhibiting anxiety; and the anxiety-evoking stimuli are presented to the patient's imagination instead of to his perception.

Relaxation is taught beforehand by a short version of the method of Edmund Jacobson, two to four muscle groups being dealt with during a 10 to 15 minute period at each of several sessions. During these sessions the stimulus controls of the patient's anxiety responses are also studied. Suppose, for example, that the patient responds with anxiety to being looked at by others. It may be found that the anxiety increases according to the number of people looking at him or according to their demeanor, their age, or their sex, or according to the vulnerability to criticism that he feels he incurs by some feature of the behavior that he is performing at that time— such as its presumptive awkwardness.

Whatever the relevant dimension, a list of situations involving it is made up and ranked according to the amount of disturbance they elicit. Such a ranked list is called a *hierarchy.* The items on the list may differ from each other by so simple a factor as number or by complex factors that need in each case to be specified. The following is an example of a hierarchy providing such specification on the theme of "rejection." The items are ranked in *descending* order of their anxiety-producing effects.

1. My apology for a blunder is not accepted by a friend.

2. My invitation to my apartment for dinner or drinks is refused by a friend.

3. I speak to a peer and he does not seem to hear.

4. A project important to me is criticized by peers.

5. I am left out of plans or not invited.

6. I am spoken to by a peer in a tone of voice sharper than the speaker uses for somebody else present.

7. Nobody remembers my birthday.

8. My greeting to an acquaintance in the street is not returned.

Another preliminary to systematic desensitization is to acquaint the patient with the *subjective anxiety scale.* The therapist says, "Think of the worst anxiety you have ever had and call it 100; then think of being absolutely calm and call that 0. On the scale from 0 to 100 you can at any time estimate your ongoing anxiety. And if your anxiety level changes, you can say by how much."

The technique of systematic desensitization is as follows. The patient reclines in his own chosen position in an adjustable armchair. He is asked to close his eyes and to relax as he has been instructed. His anxiety level must be down to o or very close to it for an adequate counteranxiety autonomic state

to have been achieved. If it is not close to 0, it is necessary to find out why and to act accordingly. For example, there may be pervasive ("free-floating") anxiety. Then one may give the patient one or more single, full-capacity inhalations of a mixture of 35 per cent oxygen and 65 per cent carbon dioxide to reduce the anxiety (Wolpe). Lacking facilities for this, one may try the administration of a tranquilizing drug an hour before the session. One reason why muscle relaxation may fail to calm is that it happens to activate a fear of "letting go." In that case another anxiety-inhibiting agent must be used.

Having assured himself that the patient's anxiety level is close to 0, the therapist says: "Your eyes being closed, I am going to ask you to imagine a number of scenes. You will imagine them very clearly. The moment the image that I suggest is clearly formed, indicate it by raising your left index finger one inch." After a matter of seconds the finger will go up. The therapist waits about five seconds; then says, "Stop imagining that scene"; and then, "By how much did that scene increase your anxiety level?" The patient will reply with a number on the subjective anxiety scale. Thereafter, he is enjoined to relax for about 20 seconds before being asked to imagine the same scene again.

In treating the hierarchy given above, starting with the weakest item (8), I spoke as follows: "Walking in the street on a pleasant Monday morning, you are approaching a man to whom you spoke for 10 minutes at a party the previous Saturday night. You smile in greeting, but he walks past with a blank

stare." When the patient's finger rose to indicate that he was imagining the scene, I let a period of about six seconds pass before requesting the cessation of imagining. I then asked the patient by how much the anxiety level rose during the visualization. He said "15 units." When the scene was presented a second time after a period of relaxation, the anxiety rose only 8 units, the third time 3 units, and the fourth time 0. Then I began presentations of the next scene on the hierarchy. "It is 5:00 p.m. on your birthday; you have spoken to half a dozen of your friends and nobody has remembered." This was presented repeatedly according to the same rules that applied to the first scene. It is worth noting that the mention of a specific time (5:00 p.m.) introduced a gradient of anxiety responses *within* that particular item: there was increasing anxiety with increasing lateness and with increasing numbers of unremembering friends. Eventually the patient came to be able to imagine without any anxiety the strongest item in the hierarchy (1).

What makes this procedure worthwhile is that there is a transfer of the change of reaction from each imaginary situation to the corresponding real situation. Nor is the change confined to the specific social interactions that figure in the treatment, but to a whole array of similar situations. In other words, if the hierarchy has covered the ground adequately, the patient should no longer be disturbable by any rejections to which disturbance is unrealistic and unnecessary. Plainly, if the changes noted in the sessions did not transfer themselves to the real situations, this whole therapeutic enterprise would be

a waste of time.

Some Variants of Systematic Desensitization. Systematic desensitization is, generally speaking, a convenient and economical procedure, which, as Paul has noted, is the first in the history of psychotherapy to have been vindicated by controlled experiments. Further economy may sometimes be sought by treating patients in groups (Paul and Shannon, Goldstein and Wolpe). Nonetheless, we do not take it for granted that the standard procedure is optimal; and recent observations (Lang, Melamed and Hart) make it likely that beneficial modifications will evolve before long.

Aside from the issue of general efficacy, standard systematic desensitization is not a viable method for certain kinds of patients. There are those who do not respond fearfully when they imagine things that they find fearful in the real world. For them it is necessary to present the relevant stimuli perceptually— either concretely or in photographic form. This kind of technical variation is called *desensitization in vivo.* An extension of the use of *in vivo* exposures that is often strikingly effective is *modeling* (Bandura). This involves the patient witnessing a fearless model engaging in progressively more intimate interactions with the phobic object and later, under guidance, making gradual approaches himself.

There are a good many patients in whom relaxation cannot be

effectively used to inhibit anxiety. Some of these are unable to relax because of a conditioned fear of "letting go." Fortunately there are several anxiety-inhibiting agents that can replace relaxation in a desensitization program (Wolpe). One of them seems to invoke external inhibition (Pavlov). The patient is asked to imagine a scene from a hierarchy, and when he indicates by raising his finger that the image is clear, a *weak* electrical stimulus is administered very rapidly, two or three times, through electrodes attached to his forearm. This can apparently compete with the anxiety, for in many cases the anxiety elicited by the scene progressively decreases, with lasting effect. Scenes are given six or eight times per minute. Another method employs imagined evocations of other emotions—pleasurable emotions, such as may be aroused by sexual scenes, skiing, or floating on the waves, or whatever else evokes hedonic arousal in the individual. A questionnaire by Cautela and Kastenbaum is often helpful in identifying possible stimuli to such arousal.

Flooding. This mode of treatment is in a way the antithesis of desensitization. Instead of the subject being exposed briefly to carefully graded "doses" of fear-evoking stimuli, he is exposed insistently to very high, though not necessarily maximal, doses for prolonged periods—up to 30 minutes and sometimes more. There is no doubt that this strategy is often effective.

Agoraphobia

It has been customary to class agoraphobia among the classical phobias because the patient responds with anxiety in relation to a well-defined class of stimuli—usually physical distance from a place of safety or the relative inaccessibility of a "safe" person. However, it is only in a minority of agoraphobics that the level of anxiety is controlled purely by distance from "safety." Much more often the distance or accessibility of a trusted person is the occasion for the anxiety rather than its immediate stimulus antecedent. Behavior analysis may show that what the patient really fears is a bodily catastrophe; for example, he may perceive a heart attack as imminent when he feels a certain kind of pain in the chest. If the pain is in actuality brought on by a recurrent phenomenon such as gas in the gastrointestinal tract, the patient has frequent attacks of anxiety; and the farther away from possible help he is when it arises, the more anxious he feels. Therapy will focus on the pain in the chest. It will first be necessary to insure that there is no heart disease by sending the patient to an internist. Occasionally negative findings will entirely reassure the patient. But more often the anxiety response to the pain persists even after the patient is intellectually convinced that his heart is normal. Systematic desensitization to the pain, usually on a dimension based on distance from the center of the chest, will be necessary to effect recovery. (Neurotic fears of illness are often encountered without agoraphobia.)

The commonest cases of agoraphobia occur in unhappily married women, low in self-sufficiency, after several years of marriage. If a woman

with normal self-sufficiency is dissatisfied with her husband, she usually takes active steps to indicate how she would like him to change; and if no amelioration occurs, she is able to consider divorce. The woman with low self-sufficiency cannot contemplate divorce because the threat of being left on her own is extremely frightening to her. There is a powerful impulse to separate from the husband; but its projected consequences make it too fearful to translate into action. The physical situation of being alone seems to be a generalization of the aloneness implied in the wished-for divorce, and thus also evokes fear. In such cases the first necessity is to work on the marriage, to try to make it satisfactory if possible. A measure that is always necessary to this end is to train the patient in assertive behavior. If the marriage cannot be improved, it should be dissolved. Whatever happens to the marriage, the treatment of the case cannot be regarded as complete until the patient has also overcome her fear of being alone (shown by her low self-sufficiency); this can usually be accomplished by a combination of assertive training and systematic desensitization.

Recent reports by Marks and Boulougeris and a well-controlled experiment by Gelder and Gath strongly suggest that flooding may turn out to be a particularly effective method in the treatment of agoraphobia.

Timidity

Timid people are inhibited from expressing themselves adequately to others because of unadaptive fears of people that have been conditioned in them. The solution sometimes lies in desensitization; but this does not often fully fit the bill since the subject is also deficient in ways of speech and other motor behavior toward others. A mode of treatment that brings about change in both emotional and motor habits is assertive training. The patient is instructed to express his previously inhibited emotions in all suitable situations.

The situations that are relevant are varied and often numerous. The patient, by reason of his interpersonal fears, may be unable to complain about poor service in a restaurant, to contradict friends with whom he disagrees, to get up and leave a social situation that has become boring, to chastise a subordinate, or to express affection, appreciation, or praise. As a first step he has to be made to realize (if he does not already) that giving voice to his feelings in such situations is appropriate. He must also understand that it is anxiety that has been standing in the way, and that in the act of expressing the other emotions, the anxiety will each time to some extent be inhibited and its habit strength diminished.

Change in behavior must be prescribed in detail. To illustrate this let us take the example of an everyday situation in which a patient has indicated he has difficulty: he cannot bring himself to request a waiter to take back

unsatisfactory food. The therapist discusses with him the situation where he has ordered a steak done rare, which is the way he likes it, and it has arrived done to a frazzle. The conversation proceeds as follows:

> Doctor: What would you do?
>
> Patient: I wouldn't say anything to the waiter and would feel irritated, but would eat the steak.
>
> Dr.: Why would you not speak up to the waiter?
>
> P.: Because I wouldn't like to antagonize him.
>
> Dr.: But you would be perfectly within your rights to do so. You have not got what you have ordered and what you will be paying for. You should ask him to take that steak back and bring you another, which he will probably do; but if he is disagreeable, you should complain to the manager.

Very frequently, on the basis of such instructions, the patient becomes gradually more capable of expressing himself adequately in an increasing number of situations. Often, however, it proves helpful to give him some practice in the consulting room. The therapist takes the role of the "other person" and the patient "plays himself," so that his errors can be corrected and improving behavior shaped. This is known as *behavior rehearsal.*

Although many patients can be instructed to carry out changed behavior of this kind "across the board," in those who have a great deal of anxiety, it is necessary to grade the tasks in a way that parallels desensitization. As Salter,

the pioneer of assertive techniques, has expressed it, “Therapy should begin where the patient’s level of inhibition is lowest.” In some cases preliminary desensitization may be needed—for example, to the idea of being or seeming “aggressive” (Wolpe).

It should be noted that assertive training incorporates two of the change processes outlined early in this chapter. There is reciprocal inhibition of anxiety by the expression of anger, annoyance, affection, or whatever other emotion is germane to the situation; and there is positive reinforcement of new modes of motor and verbal response, the reinforcement coming from whatever is rewarding in consequence—whether it be the achievement of control of a social interplay, or getting the rare steak that one has ordered.

Male Sexual Inadequacy

For the patient with erectile incompetence or premature ejaculation, a particularly convenient and effective instrument of reciprocal inhibition of anxiety is sexual emotional arousal. In all its phases short of ejaculation the male sexual response is mainly a parasympathetic function. Anxiety interferes with the sexual response because sympathetic arousal inhibits parasympathetic function. As a result penile erection may be impaired, or the normal overflow into the sympathetic from parasympathetic sexual activation, which is the trigger to ejaculation, may be activated too soon. In

order to employ the sexual response successfully for the purpose of overcoming sexual anxiety, it is necessary at all times to insure that it is "stronger" than the anxiety to which it is opposed.

Thus, in using the sexual response as an anxiety inhibitor, the first requirement is to ascertain at what point in the sexual approach anxiety begins and what factors increase it. Perhaps the man begins to feel anxiety the moment he enters the bedroom, or perhaps it is when he is lying in bed in the nude next to his wife. The basic idea of the treatment is explained to him: he is to extend his sexual approach in slowly graded steps, never allowing himself to advance beyond a stage that arouses slight anxiety in him. If, for example, he feels anxiety to a minimal extent just lying next to his wife in bed, he is permitted to advance no further until the anxiety has entirely dissipated. This will usually occur after two or three sessions. Then he can go on to the next stage—perhaps fondling her breasts, caressing her thighs, or lying on top of her without attempting intromission. When this, in turn, ceases to evoke anxiety he may be permitted to approximate the penis to the clitoris. After this he may be allowed a small degree of entry, and then increasing degrees—after which increasing movement. The precondition for advancing beyond a stage is always the disappearance of all anxiety from it.

The cooperation of the wife is obviously crucial to such a program. She has to know that her husband's problem must be handled gently and that she

must not make him anxious by mocking or goading him to achieve any particular level of performance. Though this may mean her enduring a good deal of frustration, she may hope to reap the rewards of her patience eventually.

The details of treatment naturally vary from case to case. Male sex hormones are occasionally indispensable (Miller, Hubert, and Hamilton, Wolpe) and tranquilizing drugs also have a place. A procedure that is frequently of great value has been described by Semans. The wife is asked to manipulate the penis to a point just short of ejaculation and then to stop. After an interval she does this again, and may repeat it several times. The effect is to increase the latency to ejaculation, which may rise to a half-hour or more.

In an average of about eight weeks on this schedule, about two-thirds of the patients have been found to achieve completely normal sexual function, and another one-sixth to become reasonably satisfying to their partners.

Female Sexual Inadequacy

Where female sexual inadequacy (frigidity) is the problem, two kinds of cases must be distinguished. In "essential" frigidity, there is lack of response to all males, while in "situational" frigidity it is to a particular male—the patient's husband—or perhaps to a class of males, or to a particular

environment. In situational frigidity the solution requires changing the situation or else extricating the patient from it.

Some cases of essential frigidity have an organic basis. One encounters women who do not recall ever having known sexual arousal and give no history of distressing sexual experiences that might have led to the conditioned inhibition of sexual responses. In some a hormonal cause is found that can sometimes be corrected. In others frigidity is due to some pathological condition that makes coitus painful—perhaps a very thick hymen or an inflammatory lesion. I once saw a woman who had been psychoanalyzed for four years for vaginal spasms that were due to local ulceration. A gynecological examination is mandatory in every case of frigidity in which there is any possibility of a physical disease.

But in most cases essential frigidity is a matter of conditioned inhibition. Some women are either absolutely or relatively frigid owing to previous experiences that have attached negative, usually anxious, feelings to sexual stimuli. In others the frigidity is the result of traumatic experiences related to sexual behavior. Sometimes the relevant experience is nothing more than having been frightened in the act of masturbation.

The treatment of essential frigidity depends upon the individual case. Where there has been faulty indoctrination, it is necessary to remove

misconceptions about sex and to reeducate the woman concerning sexual activity. Having done this, one is almost always still left with a negative emotional response and an accompanying behavioral inadequacy. Typically this is treated by systematic desensitization (Wolpe). Brady has reported particularly good results with desensitization in which relaxation is assisted by sodium methohexital.

Homosexuality

Experience in the Behavior Therapy Unit suggests that homosexuality depends on one or more of the following three factors: (1) conditioned anxiety reactions toward women in contexts of physical closeness; (2) interpersonal anxiety of the kind that calls for assertive training, with peak reactivity toward females; and (3) positive erotic approach conditioning to men. Aversive conditioning is an appropriate treatment only for the last factor. If either or both kinds of anxiety conditioning are present, treatment should be directed to them first; and it will sometimes be found that aversive conditioning has become needless because sexual interest is transferred from males to females. The most favored technique incorporating aversive conditioning is that of Feldman and MacCulloch in which approach attitudes to females are conditioned coordinately with aversion to males.

Another method of producing aversive effects that can be applied to

homosexuality— as well as to other conditions—was introduced by Cautela under the name "covert sensitization." The patient is asked to visualize the stimulus to which a negative attitude is to be conditioned, and at the same time aversive imagery is suggested that evokes nauseation, disgust, or some other unpleasant response.

Other Neurotic Syndromes

As stated above, the treatment of neuroses is mainly a matter of identifying and deconditioning unadaptive anxiety responses. A number of technical variations have emerged for the treatment of particular syndromes besides those discussed above. A few of them will be briefly mentioned.

Brady has descrized the use of a micrometronome resembling a hearing aid for the treatment of stuttering. A variety of methods have been used in cases of obsessive-compulsive behavior, including positive reinforcement (Wetzel, Bailey and Atchinson), thought-stopping (Yamagami), and covert sensitization (Cautela, Wisocki). Fourteen cases of various sexual perversions have been reported by Marquis as having been successfully treated by "orgasmic reconditioning" in which chosen fantasies are carefully programmed to precede masturbatory orgasms. Serber has overcome transvestism and other sexual deviations by the use of "shame"—having the patient undress, in the case of transvestism, in the presence of an audience.

While reactive depression is generally treatable as an offshoot of anxiety (Wolpe), in some cases reinforced activity has a key therapeutic role (Burgess).

Pure Learned Unadaptive Habits That Are Not Neurotic

Unadaptive learned habits are excluded from the definition of neuroses when they have not originated in anxiety-generating situations. The most common of these habits are seen in children, in such forms as thumb-sucking, nail-biting, tantrums, enuresis nocturna, and encopresis. Occasionally such habits persist into adult life. But there are also other members of this class of habits that arise during adolescence or later. Some cases of anorexia nervosa seem to develop on a basis of instrumental conditioning and without relation to anxiety (see Bachrach, Erwin, and Mohr)"' in contrast to the kind of case described by Lang. A particularly common unadaptive habit of adolescent origin is distractibility from study (for example, Sulzer, Wolpe).

All of these habits call for treatment on principles of instrumental conditioning—positive or negative reinforcement, or aversion therapy. Kimmel and Kimmel treated enuresis nocturna by encouraging the child to drink freely at all times and rewarding prolongation of *diurnal* retention of urine. On the first training day the parent waits for the child's first report of a desire to urinate. The child is asked to hold it in for, say, five minutes, being

promised a reward of cookies, candy, or soda pop, etc., depending upon his likes and dislikes. When the necessary time has expired, the promised reward is given and the child permitted to urinate. The same essential procedure is followed whenever the child has a urinary urge, and as it becomes clear that the initial time requirement has become easy for him, it is increased by a few minutes. The increase must always be small in order to avoid failure or refusal to cooperate. In a few days the time can be increased to as much as 30 minutes. This may require an increase in the amount of reward also. All three of the cases reported by Kimmel and Kimmel stopped bed-wetting within 14 days after the beginning of the treatment, and none of them showed more than a single lapse during a one- year followup.

In recent years increasing use has been made of social reinforcers for children's unadaptive habits. Hart *et al.,* have described deconditioning of the excessive crying behavior of two nursery school children. The teachers were told to distinguish between crying due to pain or other appropriate causes and "operant crying." They were instructed to ignore each child's operant cries, not going to him, speaking to him, or even looking at him while he was crying (except for an initial glance to assess the situation). If a particular child was close to a teacher when he began to cry, she was to turn her back and walk away or busy herself with another child. Within five days after introduction of the program, operant crying decreased from between five and ten times per morning to less than two. At this point, in order to substantiate

the hypothesis that the operant crying of these children was truly a function of social reinforcement, the therapists decided to try to reinstate the crying behavior by instructing the teachers to give attention to every approximation to a cry, such as whimpering and sulking. The base line rate of crying was soon reestablished. After four days' reintroduction of the policy of removal of attention from crying, the behavior was practically eliminated.

As an adult example we may summarize a case reported by Sulzer. A graduate student complained of an inability to persist in reading long enough to maintain high grades in his courses. In his living room he could concentrate for only 20 to 30 minutes before becoming so restless that he could not continue reading. He would join his wife watching television in the bedroom or read some nonschool material. He would rarely be able to resume study that evening. A program was devised for the patient to study according to new rules in one of the university reading rooms. He was to go to the library daily for a week and each day read six pages of assigned material, no more and no less. He was not to study at home. The average time per day spent studying in the first week was less than 20 minutes, but the student had some difficulty in restraining himself from reading further. The therapist expressed approval to him for following the program exactly. Each following week the daily reading material was increased by two pages until, after several months, it reached 60 pages daily. Later, measures were adopted to enable the student to study at home.

A few further examples can be only briefly mentioned. Risley and Hart have reported the alteration of nonverbal behavior in preschool children by reinforcing related verbal behavior. Patterson recounts the virtual elimination of hyperactive classroom behavior in a nine-year-old child by reinforcing attentive behavior by candy, having found that most of the "hyperactivity" consisted of such inappropriate behavior as talking, pushing, hitting, pinching, looking about the room and out of the window, moving about the room, and squirming and tapping at the desk. Barrish *et al.* and Bushell *et al.,* have described the effective use of individual behavioral contingencies with group consequences rebounding on the individual. The treatment of encopresis by various kinds of positive reinforcement has been described by Neale, Madsen, Tomlinson, and Edelman. The use of behavior modification for youthful offenders in a group setting is described by Cohen and Filipezak, and the treatment of autistic children by Lovaas, Schaffer, and Simmons. Homme has shown how favored activities may be used as reinforcers on the basis of the Premack principle. An overview of procedures in the home and the classroom has been provided by Patterson.

In order to make behavior modification widely available, it is necessary to train teachers, social workers, and nursing aides as dispensers of reinforcement (Guerney, Jehu, Patterson, Birnbrauer *et al).* Lindsley, who has for a long time argued that a massive effort in behavior modification with children cannot be successfully implemented by psychotherapists, even with

the help of teachers, and that parents must be brought into the therapeutic team, has recently provided a brief account of his program for parents.

Modifying the Learned Behavior of Schizophrenics

As previously stated, schizophrenia is essentially an organic disease, but may predispose patients to acquire a variety of unadaptive habits on the basis of learning. These learned habits, as would be expected, are susceptible to modifications by learning. The possibility of this was first put forth by Lindsley. Much of the clinical pioneering was performed by Ayllon and his co-workers. A case described by Ayllon illustrates his typical ingenious retraining procedures. The patient, a 47-year-old female schizophrenic who had been hospitalized for nine years, had a number of bizarre habits, including wearing 25 pounds of clothing simultaneously, overeating, stealing the food of other patients, and hoarding towels. All of these were successfully overcome by reinforcement procedures. The towel hoarding habit was treated by getting the nurses progressively to add more and more towels to the patient's room. At first she was delighted and arranged them in neat piles. After two or three weeks, when their number was in the region of 600, they became unmanageable; and the patient would beg the nurses not to bring any more. After about six weeks she herself began taking the towels out of her room, and they did not come back. She ultimately removed practically all of them, remaining, like other patients, with one or two. Evidently at a certain

stage the massiveness of the hoard had become aversive, so that removal of the towels provided negative reinforcement. In the course of a year's continuous observation, she never again reverted to towel hoarding.

To carry out behavior modification programs as exemplified by the above case requires specially trained ward personnel. Once they have been employed in reasonable numbers, it becomes possible to utilize their services widely in special operant wards, a rapidly growing number of which have been established in mental hospitals throughout the United States in the past decade. The training of such personnel has thus become increasingly important. It has been greatly aided by two lucid texts, by Schaefer and Martin and by Ayllon and Azrin.

The efforts at behavior modification that go on in operant wards are not confined to special programs for individual patients. Selected behavior of all the members of a group may be programmed for change in a particular direction. The implementation of group programs has been facilitated by the use of tokens (Ayllon and Azrin) that the patients receive for the performance of desired behavior and that they can subsequently spend to obtain objects or privileges of their own choice. Wholesale changes of a socializing kind are frequently procured, including regular attendance at suitable occupations, improved cleanliness, and cooperation with the hospital staff.

More specific group targets of operant conditioning procedures in wards include reducing urinary incontinence (Wagner and Paul), controlling overeating (Upper and Newton), and decreasing pill-taking behavior (Parrino *et al.).*

The Place of Behavior Therapy in Psychiatry

Once it is realized that unadaptive behavior must either be the result of abnormal anatomical or physiological states or else have been acquired by learning, it is but a small step to the conclusion that the most logical approach to the latter category is by making use of experimentally established knowledge of the factors that influence learning. This is what behavior therapy does. However, as pointed out at the beginning of this chapter, emotional learning based upon the spontaneous emotional responses of the patient to the therapist benefits many neurotic patients, no matter what the orientation of the therapist. It seems also that experienced and sympathetic therapists of many kinds often influence their patients to change their behavior toward reasonable assertiveness on the basis of common sense. But it can scarcely be doubted that the deliberate application of solidly established principles is a surer way to success than any rule of thumb.

The results so far obtained by behavior therapy of the neuroses quite strongly support the foregoing. Uncontrolled comparisons (such as, Wolpe)

have shown behavior therapy to produce markedly favorable results much more rapidly than psychoanalysis does (on the criteria suggested by Knight). A large range of controlled studies (such as, Paul, Moore, and Lomont *et al*.) have uniformly indicated superior efficacy for specific behavior therapy techniques; and Sloane *et al.,* have found, in a carefully controlled comparison of behavior therapy with psychoanalytically oriented therapy, that behavior therapy achieves significantly more personality change in areas outside the target symptom than psychoanalytically oriented therapy. Furthermore it is quite evident that the opinion of psychoanalytically oriented psychiatrists that change procured by conditioning cannot be reliable because it leaves the "dynamic roots" of neurosis untouched, and that relapse or symptom substitution is to be expected, has not been borne out (Wolpe, Paul). Neither relapse nor symptom substitution is seen in patients whose neuroses have been overcome by skillful behavior therapy based on competent behavior analyses. In every one of the rare cases that have displayed a renewal of symptoms, we have found a clear history of exposure to new anxiety-conditioning experiences.

Bibliography

Ayllon, T., "Intensive Treatment of Psychotic Behavior by Stimulus Satiation and Food Reinforcement," *Behav. Res. Ther.,* 1:53-61, 1963.

____, and Azrin, N. H., "Reinforcement and Instructions with Mental Patients," *J. Exp. Anal. Behav.,* 7:327-331, 1964.

_____, and _____, *The Token Economy: A Motivational System for Therapy and Rehabilitation*, Appleton-Century-Crofts, New York, 1968.

_____, and Haughton, E., "Control of the Behavior of Schizophrenic Patients by Food," *J. Exp. Anal. Behav.,* 5:343–352, 1962.

Bachrach, A. J., Erwin, W. J., and Mohr, J. P., "The Control of Eating Behavior in an Anorexic by Operant Conditioning Techniques," in Ullman, L., and Krasner, L. (Eds.), *Case Studies in Behavior Modification,* Holt, Rinehart & Winston, New York, 1965.

Bailey, J., and Atchinson, T., "The Treatment of Compulsive Handwashing Using Reinforcement Principles," *Behav. Res. Ther.,* 7.327-329, 1969.

Bandura, A., *Principles of Behavior Modification,* Holt, Rinehart & Winston, New York, 1969.

Barrish, H. H., Saunders, M., and Wolf, M. M., "Good Behavior Game: Effects of Individual Contingencies for Group Consequences on Disruptive Behavior in a Classroom," *J. App. Behav. Anal.,* 2:119- 224, 1969.

Birnbrauer, J. S., Burchard, J. D., and Burchard, S. N., "Wanted: Behavior Analysts," in Bradfield, R. H. (Ed.), *Behavior Modification: The Human Effort,* Dimensions, San Rafael, 1970.

Brady, J. P., "Brevital-Relaxation Treatment of Frigidity," *Behav. Res. Ther.,* 4:71-77.

_____, "Metronome-Conditioned Speech Retraining for Stuttering," *Behav. Res. Ther.,* 2.129-150, 1971.

_____, "Studies on the Metronome Effect on Stuttering," *Behav. Res. Ther.,* 7:197-204, 1969.

Burgess, E. P., "The Modification of Depressive Behaviors," in Rubin, R. D., and Franks, C. M. (Eds.), *Advances in Behavior Therapy,* Academic Press, New York, 1968.

Bushell, D., Wrobel, P. A., and Michaelis, M. L., "Applying 'Group' Contingencies to the Classroom Study Behavior of Preschool Children*," J. App. Behav. Anal.,* 1:55-61,1968.

Cautela, J., "Covert Sensitization," *Psychol. Rep.,* 20:459, 1967.

_____, "Treatment of Compulsive Behavior by Covert Sensitization," *Psychol. Rec., 16:*33-41, 1966.

_____, and Kastenbaum, R., "A Reinforcement Survey Schedule for Use in Therapy, Training, and Research," *Psychol. Rep.,* 20:1115-1130, 1967.

Chapman, J., "The Early Symptoms of Schizophrenia," *Brit. J. Psychiat., 112:* 225-251, 1966.

Cohen, H. L., and Filipczak, J. A., A *New Learning Environment,* Jossey-Bass, San Francisco, 1971.

Conn, J. W., and Seltzer, H. S., "Spontaneous Hypoglycemia," *Am. J. Med., 19:* 460-478, 1955.

Edelman, R. I., "Operant Conditioning Treatment of Encopresis," *J. Behav. Ther. Exp. Psychiat.,* 2:71-73, 1971.

Feldman, M. P., and MacCulloch, M. J.,"Aversion Therapy in the Management of Homosexuals," *Brit. Med. J.,* 1:594, 1967.

Frankl, V., "Paradoxical Intention: A Logo-therapeutic Technique," *Am. J. Psychother.,* 14:520, 1960.

Gath, D., and Gelder, M. G. A., *Treatment of Phobias—Desensitization versus Flooding,* paper delivered to the Department of Psychiatry, Temple University Medical School, November 8, 1971.

Goldstein, A., and Wolpe, J., "Behavior Therapy in Groups," in Kaplan, H. I., and Sadock, B. J. (Eds.), *Comprehensive Group Psychotherapy,* Williams & Wilkins, Baltimore, 1971.

Gottlieb, J. S., Frohman, C. E., Tourney, and Beckett, P. G. S., "Energy Transfer Systems in Schizophrenia: Adenosine- triphosphate (ATP)," *Arch. Neurol. Psychiat.,* 81:504-510, 1959.

Guerney, B. G., Psychotherapeutic Agents: New Roles for Nonprofessionals, Parents and Teachers, Holt, Rinehart & Winston, New York, 1969.

Hart, B. M., Allen, K. E., Buell, J. S., Harris, F. R., and Wolf, M. M., "Effects of Social Reinforcement on Operant Crying," *J. Exp. Child Psychol.,* 1:145-153, 1964.

Homme, L. E., "Control of Covenants, The Operants of the Mind," *Psychol. Rec., 15:* 501-511, 1965.

Jacobson, E., Progressive Relaxation, University of Chicago Press, Chicago, 1938.

_____, Self-Operations Control, J. B. Lippincott, Philadelphia, 1964.

Jehu, D., "The Role of Social Workers in Behavior Therapy," *J. Behav. Ther. Exp. Psychiat.,* 1:5-15, 1970.

Jones, M. C., "A Laboratory Study of Fear: The Case of Peter," *J. Genet. Psychol., 31:* 308-311, 1924.

Kimmel, H. D., and Kimmel, E., "An Instrumental Conditioning Method for the Treatment of Enuresis," *J. Behav. Ther. Exp. Psychiat., 1:*121-123, 1970.

Knight, R. P., "Evaluation of the Results of Psychoanalytic Therapy," *Amer. J. Psychiat.,* ,98:434, 1941.

Lang, P. J., "Behavior Therapy with a Case of Nervous Anorexia," in Ullman, L. P., and Krasner, L. (Eds.), *Case Studies in Behavior Modification,* Holt, Rinehart & Winston, New York, 1965.

Lang, P. J., Lazovik, A. D., and Reynolds, "Desensitization, Suggestibility and Psychotherapy," *J. Abn. Psychol.,* 70:395- 402, 1965.

Lang, P. J., Melamed, B. G., and Hart, J., "A Psychophysiological Analysis of Fear Modification Using an Automated Desensitization Procedure," *J. Abn. Psychol., 76:* 221-234, 1970.

Lindsley, O. R., "An Experiment with Parents Handling Behavior at Home," in Fargo, G. A., Behrens, C., and Nolan, P. (Eds.), *Behavior Modification in the Classroom,* Wadsworth Publ. Co., Belmont, Calif., 1970.

_____, "Operant Conditioning Methods Applied to Research in Chronic Schizophrenia," *Psychiat. Res. Rep.,* 5.118-139, 147-153, 1956.

Lomont, J. F., Gilner, F. H., Spector, N. J., and Skinner, K. K., "Group Assertion Training and Group Insight Therapies," *Psychol. Rep.,* 25:463-470, 1969.

Lovaas, O. I., Schaffer, B., and Simmons, J. Q., "Building Social Behavior in Autistic Children Using Electric Shock," *J. Exp. Stud. Pers.,* 1:99-109, 1965.

Madsen, C. H., "Positive Reinforcement in the Toilet Training of a Normal Child: A Case Report," in Ullman, L. P., and Krasner, L. (Eds.), *Case Studies in Behavior Modification*, Holt, Rinehart & Winston, New York, 1965.

Malleson, N., "Panic and Phobia," *Lancet, 1:*225-227, 1959.

Marks, I. M., and Boulougeris, J. C., "Implosion (Flooding)—A New Treatment for Phobias," *Brit. Med. J.* (June 1969) 1:721-723.

_____, _____, and Mahset, P., "Superiority of Flooding (Implosion) to Desensitization for Reducing Pathological Fear," *Behav. Res. Ther.,* 9:7-16, 1971.

Marquis, J. N., "Orgasmic Reconditioning: Changing Sexual Object Choice through Controlling Masturbation Fantasies," *J. Behav. Ther. Exp. Psychiat.,* 1:263-271, 1970.

Mealiea, W. L., and Nawas, M. M., "The Comparative Effectiveness of Systematic Desensitization and Implosive Therapy in the Treatment of Snake Phobia," *J. Behav. Ther. Exp. Psychiat.,* 2:85-94, 1971.

Miller, N. E., Hubert, E., and Hamilton, J., "Mental and Behavioral Changes Following Male Hormone Treatment of Adult Castration Hypogonadism and Psychic Impotence," *Proc. Soc. Exp. Biol. Med.,* 38:538, 1938.

Moore, N., "Behavior Therapy in Bronchial Asthma: A Controlled Study," *J. Psychosom. Res.,* 9:257-276, 1965.

Neale, D. H., "Behavior Therapy and Encopresis in Children," *Behav. Res. Ther.,* 1: 139-149, 1963.

Osgood, C. E., "Meaningful Similarity and Interference in Learning," *J. Exp. Psychol.,* 38:132, 1946.

Parrino, J. J., George, L., and Daniels, A. C., "Token Control of Pill-Taking Behavior in a Psychiatric Ward," *J. Behav. Ther. Exp. Psychiat.,* 2:181-185, 1971.

Patterson, G. R., "An Application of Conditioning Techniques to the Control of a Hyperactive Child," in Ullman, L. P., and Krasner, L. (Eds.), *Case Studies in Behavior Modification,* Holt, Rinehart & Winston, New York, 1965.

Patterson, G. R., "Behavioral Intervention Procedures in the Classroom and the Home," in Bergin, A. E., and Garfield, S. L. (Eds.), *Handbook of Psychotherapy and Behavior Change*, John Wiley, New York, 1970.

Paul, G. L., "Behavior Modification Research: Design and Tactics," in Franks, C. M. (Ed.), *Behavior Therapy: Appraisal and Status,* McGraw-Hill, New York, 1969.

_____, "Inhibition of Physiological Response to Stressful Imagery by Relaxation Training and Hypnotically Suggested Relaxation," *Behav. Res. Ther.,* 7:249-256, 1969.

_____, *Insight versus Desensitization in Psychotherapy,* Stanford University Press, Stanford, 1966.

_____, and Shannon, D. T., "Treatment of Anxiety through Systematic Desensitization in Therapy Groups," *J. Abn. Psychol., 71:*124-135, 1966.

Pavlov, I. P., *Conditioned Reflexes* (Tr. By Anrep, G. V.), Liveright, New York, 1927.

Risley, T. R., and Hart, B., "Developing Correspondence between the Non-Verbal and Verbal Behavior of Preschool Children," *J. App. Behav. Anal., 1:*267-281, 1968.

Rubin, L. S., "Pupillary Reflexes as Objective Indices of Autonomic Dysfunction in the Differential Diagnosis of Schizophrenic and Neurotic Behavior," *J. Behav. Ther. Exp. Psychiat.,* 1.185-194, 1970.

Salter, A., *Conditioned Reflex Therapy,* Creative Age, New York, 1949.

Salzer, H. M., "Relative Hypoglycemia as a Cause of Neuropsychiatric Illness," *J. Nat. Med. A.,* 58:12, 1966.

Schaefer, H. H., and Martin, P. L., *Behavioral Therapy,* McGraw-Hill, New York, 1969.

Scrignar, C. B., "Food as the Reinforcer in the Outpatient Treatment of Anorexia Nervosa," *J.*

Behav. Ther. Exp. Psychiat., 2:31-36, 1971.

Semans, J. H., "Premature Ejaculation: A New Approach," *South Med. J.,* 4.9:353, 1956.

Serber, M., "Shame Aversion Therapy," *J. Behav. Ther. Exp. Psychiat*., 1:213-215, 1970.

Sherrington, C. S., *Integrative Action of the Nervous System,* Yale University Press, New Haven, 1906.

Skinner, B. F., *The Behavior of Organisms*, Appleton-Century-Crofts, New York, 1938.

_____, *Science and Human Behavior*, Macmillan, New York, 1953.

Sloane, R. B., Cristol, A. H., Yorkston, N. J., Wolpe, J., and Freed, H., Psychotherapy and Behavior Therapy for Neuroses: A Comparative Study, in print.

Stampfl, T. G., and Levis, D. J., "Essentials of Implosive Therapy: A Learning-Theory-Based Psychodynamic Behavioral Therapy," *J. Abn. Psychol.,* 72:496-503, 1967.

Stoffelmayr, B. E., "The Treatment of a Retching Response to Dentures by Counteractive Reading Aloud," *J. Behav. Ther. Exp. Psychiat.,* 2.163-164, 1970.

Sulzer, E. S., "Behavior Modification in Adult Psychiatric Patients," in Ullman, L. P., and Krasner, L. (Eds.), *Case Studies in Behavior Modification,* Holt, Rinehart & Winston, New York, 1965.

Thomas, E. J., "Selected Sociobehavioral Techniques and Principles: An Approach to Interpersonal Helping," *Soc. Work,* 13: 12-16, 1968.

Tomlinson, J. R., "The Treatment of Bowel Retention by Operant Procedures: A Case Report," *J. Behav. Ther. Exp. Psychiat.,* 1.83-85, 1970.

Upper, D., and Newton, J. G., "A Weight-Reduction Program for Schizophrenic Patients on a Token Economy Unit: Two Case Studies," *J. Behav. Ther. Exp. Psychiat.,* 2.113-115, 1971.

Wacner, B. R., and Paul, G. L., "Reduction of Incontinence in Chronic Mental Patients: A Pilot

Project," *J. Behav. Ther. Exp. Psychiat., 1:*29-37, 1970.

Wetzel, R., "Use of Behavioral Techniques in a Case of Compulsive Stealing," *J. Consult. Psychol.,* 30:367-374, 1966.

Willoughby, R. R., "Some Properties of the Thurston Personality Schedule and a Suggested Revision," *J. Soc. Psychol.,* ,3:401, 1932-

Wisocki, P. A., "Treatment of Obsessive-Compulsive Behavior by Covert Sensitization and Covert Reinforcement: A Case Report," *J. Behav. Ther. Exp. Psychiat.,* 1:233-239, 1970.

Wolpe, J., "The Discontinuity of Neurosis and Schizophrenia," *Behav. Res. Ther., 8:* 119-187. 1970.

_____, "Neurotic Depression: Experimental Analog, Clinical Syndromes, and Treatment," *Am. J. Psychother., 2*5:362-368, 1971.

_____, The Practice of Behavior Therapy, Pergamon Press, New York, 1969.

_____, *Psychotherapy by Reciprocal Inhibition,* Stanford University Press, Stanford, 1958.

_____, and Lang, P. J., A *Fear Survey Schedule,* Educational and Industrial Testing Service, San Diego, 1969.

Wolpin, M., and Raines, J., "Visual Imagery, Expected Roles and Extinction is Possible Factors in Reducing Fear and Avoidance Behavior," *Behav. Res. Ther.,* 4:25-37, 1966.

Yamagami, T., "The Treatment of an Obsession by Thought-Stopping," *J. Behav. Ther. Exp. Psychiat.,* 2:133-135. 1971.

Notes

[1] It should be noted that a great many cases of asthma, migraine, and other "psychosomatic" illnesses have purely somatic etiologies.