

THE BEHAVIOR THERAPY SYSTEMS OF JOSEPH WOLPE  
AND HANS EYSENCK

by

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TABLE OF CONTENTS

	Page
INTRODUCTION . . . . .	1
BEHAVIOR THERAPY ROOTS IN HULLIAN THEORY . . . . .	13
JOSEPH WOLPE'S SYSTEM . . . . .	16
HANS EYSENCK'S SYSTEM . . . . .	30
SUMMARY . . . . .	41
BIBLIOGRAPHY . . . . .	43

## INTRODUCTION

In 1917 John B. Watson commented upon an experimentally conditioned fear response in a manner which is intriguing, prophetic, and relevant for the discussion to follow.

The Freudians, twenty years from now, unless their hypotheses change, when they come to analyze Albert's fear of a seal-skin coat--assuming that he comes to analysis at that age--will probably tease from him the recital of a dream which will show that Albert at three years of age attempted to play with the pubic hair of his mother and was scolded violently for it. (We are by no means denying that this might, in some other case condition it.) If the analyst has sufficiently prepared Albert to accept such a dream when found as an explanation of his avoiding tendencies, and if the analyst has the authority and personality to put it over, Albert may be fully convinced that the dream was a true revealer of the factors which brought about the fear (Watson and Raynor, 1920, p. 14).

The attitude of spurious disregard for the psychoanalytic approach to psychotherapy which is implicit throughout the preceding paragraph seems typical, not only of Watson, but of psychologists in general. The science of psychology holds as its major concern the study of the general behavior of animals and of the human species--behavior which it believes to be as casually determined as is any other natural phenomenon (Morgan and King, 1966). Given this framework, it is not surprising that psychologists regard askance a theory derived primarily from natural (clinical) observation which espouses that the behavioral manifestations of "mental illness" are surface "symptoms" which

are the visible results of "unconscious causes". This is not to say that the psychoanalytic approach does not postulate cause and effect relationship by which behavior is determined, but that it has done so in ill-defined terms--terms which do not lend themselves to the experimental manipulation of specified variables which make such statements of causal relationships acceptable.

Somewhat more surprising, however, and certainly more distressing is the fact that despite the criticisms of this method, few alternative methods have been presented which prove to be more effective (Eysenck, 1952). Goldstein and Dean (1966) reported that millions of words have been written about psychotherapy in the past fifty years, and many conflicting explanations and justifications have been advanced concerning the process. The actual practice of psychotherapy, however, has remained remarkably constant with few exceptions. Most researchers have tended to restrict their attention to the classical two-person verbal interaction. Notwithstanding the early work of Pavlov and Thorndike and the more recent studies of experimental neurosis, of fear and avoidance conditioning, of the conditioning of autonomic reactions, of verbal conditioning, and of individual differences in conditionability (Renya, 1966), the actual incorporation of such findings into clinical practice has been reluctant at best.

Such reluctance seems to be based primarily upon an erroneous interpretation of the relationship between pure and applied science. This interpretation, which prevents the expansion and utilization of a science to its fullest potential, states that application, if

it is to have any verifiable basis, must wait until there is a pure science ready to be applied. The corollary of this interpretation is that once the pure science is in order, applications of its principles will be both simple and immediate. Hilgard (1956) refuted this misconception on grounds which defended both pure and applied research. He argued that laboratory derived principles are of value primarily because principles discovered in a well-controlled situation can be validated in less well-controlled ones. Research on practical problems, however, not only adjusts theory to practice, but also contributes to the substantiation, refutation, or extension of theoretical knowledge.

It is in relation to the problems stated above that this paper will be concerned. The major thesis of the work will be that within the discipline of psychology itself lies the responsibility for providing the necessary alternative framework within which the problems of disordered behavior might be considered. Attention will focus upon the group known collectively as behavior therapists. Their work will be regarded as a successful demonstration of the manner in which new solutions to old problems may be sought. Not only have the behavior therapists departed from the traditional methods of psychotherapy; they also exhibit a willingness to seek results from within an incomplete theoretical structure which they have thus helped to substantiate and to extend. In order to elaborate upon this contention regarding the behavior therapists, an attempt will be made to present both the general rationale of this approach and the more specific details of two related systems:

Joseph Wolpe's and Hans J. Eysenck's.

Despite theoretical and methodological differences among the behavior therapists, all agree that general psychological principles, particularly those derived from learning theorists and from the experimental laboratories, can be efficaciously applied in the clinical setting (Rachman, 1963). Their concern is with the treatment of overt behavior rather than postulated underlying psychodynamic processes (Matarazzo, 1965). This decision concerning what is to be treated follows logically from the theoretical framework which considers all patterns of behavior, whether adaptive or maladaptive, as products of the learning process. The manner in which these concepts of learning theory can be used to develop a program for behavior change is expressed well in general terms by Ullman and Krasner (1965). They have presented three questions which any behavior therapist is likely to ask himself when confronted with a problem. First, what behavior is maladaptive; that is, what behavior should be increased or decreased. Second, what aspects of the patient's environment currently support the patient's behavior, either to maintain the undesirable behavior or to reduce the likelihood of his performing a more adaptive response. Third, what changes in the environment, usually through a consideration of the reinforcing stimuli, can be manipulated to alter the subject's behavior. Such a procedure indicates an a priori rather than a post hoc usage of learning concepts. It is this point which distinguishes the behavior therapists' approach from other therapies employing learning concepts (Murray, 1963).

The theoretical assumptions which underlie such an approach are delineated by Eysenck (1963) in his summary of the main tenants of behavior therapy. These tenants will be listed here in abbreviated form to permit more accurate discussion of the most distinct features:

(1) Neurotic behavior consists of maladaptive conditioned responses of the autonomic system and of the skeletal responses made to reduce the conditioned (sympathetic) reactions.

(2) While the term "symptom" may be retained to describe neurotic behavior, there is no implication that such behavior is symptomatic of anything.

(3) It follows that there is no underlying complex or other "dynamic" cause which is responsible for the maladaptive behavior; all that is dealt with in treatment is the conditioned maladaptive behavior.

(4) Treatment consists of deconditioning the maladaptive behavior by such techniques as reciprocal inhibition, extinction, conditioned inhibition, and of the conditioning of adaptive behavior along orthodox lines.

(5) Treatment is a-historical and does not involve "uncovering" of past events.

(6) Conditioning and deconditioning will usually proceed through behavioral channels, but there is no reason why verbal methods should not also be used. Words are also conditioned stimuli which have an ascertainable position on the stimulus and response generalization gradient of the patient.



Despite Eysenck's contention that these are tenants which are basic to all behavior therapy, careful reading would seem to indicate that these postulates arose from a particular theoretical formulation. Their inclusion at this point, however, will perhaps serve not only to illustrate the manner in which the behavioral approach differs from the traditional approach to psychotherapy, but also to point out some of the issues of controversy within the field of behavior therapy. To attain this end, each tenant will be considered in turn.

Consideration of the first tenant indicates several important characteristics of behavior therapy. First, these tenants were specifically formulated to concern neurotic behavior. It is significant that it is this group of disorders which has received the most attention from the behavior therapists (Wolpe, 1958; Eysenck, 1960c; Rachman, 1963). Indeed, Grossberg (1964) in a rather critical review of the procedures of this approach, has conceded that they are most successful when applied to neurotic disorders with specific behavioral manifestations. Although work with psychotic disorders has been attempted, such work has involved primarily the application of the operant conditioning techniques of the Skinnerian school (Eysenck, 1964a).

A second important aspect of the first tenant is that the postulation of a two-factor theory of learning is very similar to that of Skinner's (Hilgard, 1956). This position is implicit in Eysenck's statement distinguishing between autonomic and skeletal responses. On a more general level, however, this indicates one of the major issues of controversy among the behavior therapists.

The dispute as to whether there are one, two, or many ways in which learning occurs is an issue which has been adopted by virtue of the adoption of the framework of the learning theorists (Hilgard, 1956). Murray (1963) has elaborated upon this point in an attempt to distinguish between two approaches by which learning theory may be applied to psychotherapy. The first of these is the biotropic approach, whose exponents include Eysenck, Salter, Wolpe, and Shaw. Murray characterized the biotropic as emphasizing classical conditioning, primary motives, manipulative techniques, and an impersonal attitude. Dollard and Miller, Mowrer, Shoben, and Murray, however, are said to represent the sociotropic approach. This approach is said to rely upon operant conditioning, social learning, permissive techniques, the therapeutic relationship, and psychodynamics. No attempt will be made to pursue Murray's argument further. It should be noted that the sociotropic approach which Murray espouses would not be considered an example of behavior therapy.

The relevance of his article lies primarily in the fact that the distinction drawn between the two approaches illustrates that divergence in methodology and in interpretation of fact can arise from minor differences in the utilization of learning theory. The sociotropic approach employs learning concepts to explain its hypotheses; the biotropic approach uses learning concepts to formulate its hypotheses. In another sense, the article is relevant in that, although Murray states that the two approaches represent different applications of learning theory, he never

explicitly states which learning theory he is using as a base. The distinction he has drawn between conditioning methods employed does not serve to specify the theoretical approach. It seems probable that both these factors are sources of ambiguity and controversy (Wolpe, 1964a; Mowrer, 1964). Eysenck (1960a) stated that the theoretical points about which most of the arguments rage are of academic rather than practical importance. It would seem, however, that more explicit statement of the points in dispute is needed.

The second through the fifth tenants which Eysenck has proposed are perhaps even more crucial to the behavior therapists' position than is the first. They imply a more radical deviation from the model of traditional psychotherapy. Ullman and Krasner (1965) have explained the theoretical differences concerning the formation and treatment of "symptoms" as being that which results from an interpretation of behavior from within a psychological model as opposed to a medical model. Most traditional psychotherapies consider behavior from within a medical model. Behavior considered within this framework is regarded as being peculiar, abnormal, or diseased because of some underlying cause. Symptoms, therefore, are considered to be evidence of such causes, as evidence of repression, and are not to be regarded as the disorder. It follows from this conception that cures can be achieved only by removing these underlying causes through an interpretation of the symptoms, dreams, and acts as the products of the various defense mechanisms. Any treatment which does not accomplish this task may seem effective for a short time, but eventually the

removed symptom will be replaced by another.

The psychological approach, however, as is clearly shown by Eysenck's postulates, explicitly rejects this dualistic, central-conflict, peripheral-symptom model (Grossberg, 1964). One of the best defenses of the behavioral position regarding symptoms is that presented by Yates (1958), a defense which also serves to specify more clearly this position. Yates objects to the distinction drawn between a "fundamental" underlying anxiety and a "surface" symptom. His first argument is that the term "symptom" has no specific meaning in psychological terminology. To define a symptom as a particular set of learned responses would be theoretically sound. In addition, such a concept would be more amenable to experimental validation than would the dynamic concept.

His second objection to the dynamic approach was that no distinction is drawn between neurosis and neuroticism--the innate predisposition to develop a neurosis under certain specifiable conditions. Yates has made no attempt to prove that this concept of neuroticism is anything more than a plausible alternative to the dynamic concept. It would seem, however, that such a concept could be operationally defined. For example, Eysenck (1961) has demonstrated individual differences in conditionability and autonomic lability. One of the causal factors of such differences has been shown to be the genetic inheritance of the organism. In like manner, Wolpe (1958) included the phrase "learning in a physiologically normal organism" in his definition of neurotic behavior. The acceptance of a concept such as neuroticism would define a

neurosis as a symptom and as nothing else. Psychological treatment could be, therefore, nothing more than symptomatic, since treatment of the predisposition must ultimately be by genetic or by chemical means.

Yates's final point is one that has received much support throughout psychological literature (Wolpe, 1958; Ullman and Krasner, 1965). He points out that the belief in symptom substitution is based primarily on clinical observation. Such a phenomenon is seldom found in instances in which a single subject has been subjected to intensive investigation and symptomatic treatment, nor in those cases where a large-scale follow-up has been conducted on groups of subjects. A general statement by Ullman and Krasner (1965) appears to be an appropriate summary of the position with regard to this problem: all the evidence would seem to indicate that symptom substitution is rarely observed; when and if such phenomena occur, there are a number of more parsimonious explanations.

Eysenck's sixth tenant is primarily a statement of the basic principles which underly the methodology and the techniques of the behavior therapists. Ullman and Krasner (1965) have stated that although there are many different techniques, there are few concepts or principles which have been widely accepted and incorporated into clinical practice. This tenant also illustrates the manner in which the traditional method of verbal interaction may be considered within a different framework.

The effects of such a theoretical position upon the methodology employed in the clinical situation have been alluded to throughout

this section. The distinction between the behavior therapist's approach and the traditional therapist's approach is most apparent in regard to the specific variables which each considers. The focus of treatment for the traditional therapist is a particular disease or some historical circumstance. The focus of treatment for the behavior therapist is behavior. The area of assessment within the traditional framework concerns the description and measurement of internal dynamics. Within the behavior therapist's framework, the total social situation is considered. The traditional therapist seeks to change the patient's behavior by altering the internal "causes" of such behavior. Treatment for the behavior therapist consists of the systematic manipulation of the environmental contingencies which are judged to support the behavior in order to alter the responses which have been judged to be maladaptive. The goal of treatment, the change in behavior requested by the patient or by the society in which he lives, as well as the procedures to be used to achieve this goal, are decided upon before treatment begins. Behavioristic criteria, such as frequency of response, are utilized to measure progress toward that goal. The behavior therapist can thus evaluate his success and, if necessary, change his procedure (Ullmann and Krasner, 1965).

These are, perhaps, the only statements which can be made concerning behavior therapy in general. Ullmann and Krasner (1965) have stated that at present only the broadest, most thoroughly established concepts are consistently utilized within a clinical setting. In order to examine the manner in which the postulations

made by learning theorists and laboratory experimenters are demonstrated to have specific application, it is necessary to consider the particular systems which have developed.

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## BEHAVIOR THERAPY ROOTS IN HULLIAN THEORY

The psychotherapist who would write his theory of neurosis and of therapy in learning theory terms must first choose his learning theory from the many which are available (Dittman, 1966). The theory which serves as a framework for the systems of both Wolpe and Eysenck is that of Clark L. Hull. Hull's theory has attempted to present a bold and comprehensive theory of behavior and at the same time to lend itself to empirical quantification (Hilgard, 1956). His contribution to both the pure and applied areas of psychology seems to derive primarily from this fact. Few other theories have been worked out in sufficient enough detail to generate the precise predictions which can be derived from Hull's principles; nor has any other system given rise to so many experimental attempts to test its predictions and to modify its hypotheses. No attempt will be made to assess the strengths and weaknesses of Hull's system per se. Only to the extent that these principles have supplied a valuable tool for the systems of psychotherapy to follow will they be considered. The relevant concepts will be discussed briefly at this point and more extensively throughout the paper.

Hull's central concept is that of habit--the modification of the central nervous system through experience. This process mediates learning and is not directly measurable but simply inferred from the performance of the organism (Hilgard, 1956). Eysenck (1960b) has stated that this dissociation of performance



from the concept of habit is one of the most important contributions of the theory. Performance--the behavior of an organism--is the product of habit strength and of drive which results from physiological needs. The formation of complex patterns of behavior, therefore, whether adaptive or maladaptive, can be explained in terms of the formation of habits. Within this framework, the "symptoms" manifested by one considered to be mentally ill can be conceived of as the products of the learning process obeying the laws which Hull has formulated. It follows, that the point of primary interest for the behavior therapist would be the manner in which habits are formed and eliminated. Such knowledge could permit more efficient and effective manipulation of behavior within the therapeutic setting. Hull has postulated that one principle, reinforcement, is sufficient to explain learning or the formation of habits. This reinforcement Hull has espoused to be either the result of drive-reduction, as in the satisfaction of a physiological need or of drive-stimulus reduction, as in the satisfaction of a craving rather than a need (Hilgard, 1956). No distinction is drawn, in this system, between the two major methods by which a functional connection between an environmental stimulus and a subject response is acquired. These methods are Pavlovian (respondent) conditioning in which the stimulus elicits the response, and operant conditioning in which the subject must emit the response to the situation prior to the environmental event that becomes associated with and alters the frequency of occurrence of the response in the future. Both are interpreted by Hull as illustrations of learning

under the control of reinforcement.

Thus, the basic condition necessary for the formation of a habit is contiguous association under the control of reinforcement. The strength of the habit, however, is determined primarily by the number of reinforced trials (Hilgard, 1956). Ullman and Krasner (1965) feel that this theory with its concept of drive and of mediation through habit serves particularly well as an explanatory tool in the sense that it is capable of considering both the internal and the external stimulus environments.

Further concepts of the system which are applicable to the majority of experimental studies are those of reactive inhibition and conditioned inhibition (Eysenck, 1960b). According to Hull's theory of learning, all behavior produces some degree of inhibition or fatigue in the mediating structures. This fatigue, it is postulated, will act as a negative drive which dissipates with rest. Such dissipation will, in turn, reinforce the state of rest, and thus a negative habit, the habit of not responding, is formed (Hilgard, 1956). These constructs present a rationale for the removal of symptomatic behavior.

The manner in which these principles may be specifically applied will be considered first in relation to the psychotherapeutic system of Joseph Wolpe.

## JOSEPH WOLPE'S SYSTEM

Opinion concerning Wolpe's theory of psychotherapy by reciprocal inhibition is diverse. Franks (1961) has designated Wolpe's system as being the "least unsatisfactory" theory based upon Pavlovian conditioning techniques that is currently available. Eysenck (1964a), in contrast, has stated that the system presents a method of treatment which appears to be extremely successful in its application to many diverse types of neurotic disorders. In addition to this, Wolpe presents a theoretical account, closely linked with modern learning theory which supplies this method with a rationale. Wolpe, himself, has characterized his system as being:

...a serious alternative to the repression theory, one that is based on the growing body of knowledge of the processes by which change is wrought in the behavior of organisms--modern learning theory--the fruit of the efforts of Pavlov, Thondike, Watson, Tolman, Hull, Skinner, and their followers (1958, p. ix).

Wolpe's alternative to the repression theory is made explicit in his definition of neurotic behavior as any "persistent habit of unadaptive behavior acquired by learning in a physiologically normal organism"(1958). Anxiety is usually the central constituent of neurotic behavior and is invariably present in the causal situations. Within this definition, Wolpe includes the various types of behavior usually labeled anxiety state, phobia, depression, hysteria, neurasthenia, and obsessional state. Psychoses such as

schizophrenia, however, are excluded on the grounds that they stem from an abnormal organic state.

Wolpe's theoretical formulations concern primarily the manner in which neurotic behavior is learned and can thus be unlearned with the aid of therapeutic intervention. The need of such therapeutic intervention to affect the removal of an unadaptive response calls attention to one of the crucial aspects of Wolpe's theory. He postulates that in any given situation, the behavior of an organism may be judged to be either adaptive or unadaptive. Although he never explicitly states his learning theory base (Ford and Urban, 1965), Wolpe's use of the drive-reduction model of Hull seems quite apparent in his definition of these behaviors. Adaptive behavior is conceived to be that which takes the form of progress toward the satisfaction of a need or that which permits the avoidance of possible damage or deprivation to the organism. The consequence of unadaptive behavior would be the needless expenditure of energy or the occurrence of damage or deprivation. A consistently unadaptive response, if only in the sense that it produces fatigue, will tend to be progressively weakened in habit strength and eventually extinguished. It is the persistence of an unadaptive habit which Wolpe feels to be a feature of neurosis. This extraordinary persistence Wolpe feels can be accounted for as a matter of learning under special conditions.

Wolpe's account of the etiology of neurosis is, briefly, as follows: General emotional reactivity differs from individual to individual either as a result of maturationally established physiological differences or as the result of an increase in

sensitivity through the learning processes. These differences can facilitate the acquisition of neurotic behavior in a subject, if this subject is exposed either directly to stimuli evoking anxiety or to ambivalent stimulation such that anxiety of high intensity is evoked. The response of anxiety is defined as the autonomic response pattern, or patterns which are characteristically a part of the organism's response to noxious stimulation. When intense anxiety is evoked in an individual, any event occurring at the same time may become associated with the anxiety. These stimuli may be specific or of a more pervasive situational nature. The variety of responses which may be acquired as concomitants of the anxiety constitute part of the symptom complex as the learned neurotic behavior. Wolpe has postulated that the effectiveness of the learning of such neurotic behavior is influenced by a number of factors. Included among these are the intensity of the anxiety during each experience, the number of learning experiences, the degree of similarity among the experiences, and the responses which are open to the individual at the time of exposure.

Once this primary learning of the neurotic response has been made, Wolpe has hypothesized that two courses of action are open to the individual. One course involves the passive acceptance of suffering. Other aspects of performance, however, such as motor coordination, concentration span, and sexual performance may be severely impaired. The other manner in which relief from anxiety may be sought is through recourse in activity which helps to diminish anxiety. Thus, activity such as the physical avoidance of

the stimuli conditioned to anxiety, displacement of attention, drug taking, or anxiety relieving obsessions may be observed.

Wolpe has not specified precisely the characteristics of these neurotic behaviors once they have been learned. Instead, he has considered his cases in terms of the major symptomatology present. The one observable characteristic common to all, the resistance to extinction in ordinary environmental situations, is reiterated at this point to permit a more precise explanation in terms of Hull's learning theory. The first point to be made is that anxiety responses apparently generate little reactive inhibition and thus there is little opportunity for a conditioned inhibition of the response to develop. Hull's principles indicate that the habit of responding to a situation with anxiety can be effectively eliminated only by the opposite habit of not responding. The second point is that because many symptoms are learned as a means of avoiding the circumstances which produced the anxiety, the individual tends to avoid the very situations which would enable him to unlearn the symptom (Ford and Urban, 1965). Ford and Urban (1965) succinctly stated Wolpe's conception of neurotic behavior as "a collection of behavior learned concomitantly with unreasonable fears as a means of reducing unreasonable fears."

The most significant aspect of Wolpe's theoretical formulation, however, lies in its role as a framework for the innovation of effective therapeutic techniques. Basic to all these techniques is the concept of reciprocal inhibition which is at once the most distinctive and the most controversial aspect of Wolpe's approach.

Colby (1964) has reported that the use of this physiological concept as the principle by which maladaptive responses are unlearned, clearly distinguishes Wolpe from other behavior theorists who explain this process by use of the principle of extinction or the principle of operant conditioning. Wolpe, however, considers the principle to be of even wider applicability than does Colby. Wolpe (1960) contends that it is the principle of reciprocal inhibition which is fundamental to all successful treatment of neurotic disorders without regard for the theoretical orientation of the therapist. The specific rationale of such a statement and the theoretical arguments which it has provoked will be considered later; the principle itself, as formulated by Wolpe, is as follows:

If a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by the complete or partial suppression of the anxiety responses, the bond between these stimuli and the anxiety responses will be weakened (1958, p. 71).

Wolpe regards experimental extinction, the other known process by which habits are removed, as being an ineffective principle for the removal of anxiety responses. Wolpe's methodology and therapeutic techniques, therefore, involve primarily the selection of appropriate responses which can effectively oppose the anxiety responses of the neurotic subject. Thus, responses were sought which largely implicated the parasympathetic division of the autonomic nervous system, since these would seem most likely to be incompatible with the predominately sympathetic responses of anxiety (Wolpe, 1958).

Following is a list of those responses chosen and the manner in which they are presumed to achieve therapeutic results. The

choice of the appropriate technique requires that the behavior therapist examine the patient's problem in detail to determine to what stimuli the patient reacts with anxiety. Once the source of anxiety has been determined, the effective response to inhibit the anxiety can be selected.

(1) Assertive responses: This technique is used primarily to overcome unadaptive anxiety aroused in the patient by other people. Its methodology requires that the therapist assume a directive role. He must point out the patient's fears, emphasizing how his fearful patterns of behavior have incapacitated him and placed him at the mercy of others. Occasionally, Wolpe feels, it is necessary to provide even more extensive coaching for the patient and a role-playing situation similar to psychodrama is arranged in the consulting room. (Wolpe, 1960). Walton (1961) reported that a severe, chronic, and apparently complex psychiatric disability proved amenable to only one session conducted in this manner. The behavioral symptom of the patient was the outbreak of violent aggression while the patient was apparently in deep sleep. Although the disorder had persisted for over two years, a suggestion to the patient that he be less inhibited in his expression of hostile feelings during periods of wakefulness was apparently successful. A follow-up conducted two years later revealed that the violent behavior of sleep had not returned, nor was there evidence of symptom substitution.

(2) Sexual Responses: When anxiety responses have been conditioned to various aspects of the sexual situation, this technique is employed. It is of particular value when the sexual inhibition



is partial and varies according to definable properties of the relevant situation. The patient is simply instructed that he must never perform sexually unless he has an unmistakably positive desire to do so. His full participation in sexual activity is to be accomplished through a series of gradual graded steps. The degree of participation at any particular time is determined by the wishes of the patient. Wolpe and Stevenson (1960) presented three case histories of relatively severe inhibition in which both the assertive technique and the technique of graded sexual response proved effective. Confidence was expressed that these methods were effective refutation of the psychoanalytic approach which considers the treatment of sexual deviations to be difficult and untenable.

(3) Relaxation response: Wolpe considers this technique to be of extreme importance. From this approach is derived the technique which has proved to be of extremely wide applicability; that of systematic desensitization based upon relaxation. This technique follows directly from the work of Jacobson who found that intense muscle relaxation was antagonistic to anxiety. Treatment consists of training the patient to relax according to Jacobson's technique of "progressive relaxation". During this training, the therapist constructs a list of stimuli to which the patient reacts with unadaptive anxiety. The patient then ranks these stimuli according to the amount of anxiety they arouse. The most disturbing items are placed at the top of the list and the least disturbing are placed at the bottom. This list becomes the "anxiety hierarchy" to be used during treatment. After the patient has been hypnotized and

instructed to relax as deeply as possible, he is told to imagine the weakest item in the hierarchy. If relaxation is unimpaired, the stimulus of the next greater intensity is presented. This procedure is continued from session to session until the reciprocal inhibition of the stimulus of maximum intensity is effected by the relaxation response. Wolpe feels that this reciprocal inhibition of the anxiety response will transfer easily from the clinical setting. In addition, he has voiced confidence that this technique is applicable to almost every source of neurotic anxiety which does not involve anxiety arising from inadequacies in the handling of interpersonal relationships (1963). The technique of desensitization can be considered within the Hullian framework as the systematic deconditioning of anxiety responses along a stimulus dimension of generalization (Wolpe, 1962). Since each stimulus in the continuum shares features with "adjacent" stimuli, the elimination of anxiety responses to a stimulus remote from the central stimulus involves the elimination of whatever fraction of the anxiety evoked by the related stimuli is attributable to the shared features.

The wide applicability of the technique is evident from even a superficial survey of the literature. It has been reported successful in the treatment of exhibitionism (Bond and Hutchison, 1965), of bronchial asthma (Cooper, 1964), of sexual disorders such as impotence, voyeurism, and transvestism (Rachman, 1961), and in the treatment of phobias (Lang and Lazovik, 1967). Wolpe (1964b) presented a summary of the results of studies utilizing this technique. These studies concerned sixty-eight phobias and allied

neurotic anxiety habits. He reported that in a mean of 11.2 sessions, 45 of the neurotic habits were eliminated and 17 more were very markedly improved. Follow-up studies of 20 of the 45 successfully treated cases at intervals ranging from six months to four years revealed neither relapse nor the emergence of new symptoms. Colby (1964) has designated such statistics as being crude and the follow-up studies questionable. However, they do illustrate the necessity of the assessment of therapeutic procedures.

Wolpe (1958) has designated the above techniques as being his "bread and butter responses" by virtue of their wide applicability and generally favorable results. In addition, he has reported research on responses that are not themselves physiologically antagonistic to anxiety. Among these he lists motor responses, feeding responses, respiratory responses, and interview induced emotional responses. Of these, only the last will be considered more fully. In conjunction with the technique of interview induced emotional response, Wolpe postulated that reciprocal inhibition was the basis of all success in therapy. His rationale for such a statement derives from a consideration of the fact that the rate of recovery is much the same regardless of the type of therapy employed. The only feature common to all therapies, however, seems to be the private interview in which the patient talks about his difficulties to a person he believes to have the knowledge, skill, and desire to help him. Wolpe has hypothesized that if the emotional response evoked in such a situation is antagonistic to anxiety and of sufficient strength, it will reciprocally inhibit the anxiety which

occurs as a result of the content of the patient's discourse.

The centrality of the principle of reciprocal inhibition for the treatment of neurotic disorders within Wolpe's system is more than obvious. It seems almost superfluous to add that he explains spontaneous improvement of neuroses with this principle. For this reason, it is not surprising to discover criticism of the principle, nor to find recommendations that it be submitted to more rigorous experimental tests (Eysenck, 1960a).

One of the most thorough examinations of the principle of reciprocal inhibition is that of Lomont (1965). His criticisms of the concept will be considered in some detail as a means of illustrating the manner in which clinical techniques may be subjected to examination in the experimental laboratory. Lomont did not question the efficacy of the technique. He challenged, however, Wolpe's statement that the technique of reciprocal inhibition can be reliably differentiated from the classical extinction of a response. He has suggested, instead, that Wolpe's technique differs from the classical extinction of a response only in that it proposes to inhibit anxiety by the presentation of a stimulus which is presumed to be antagonistic to anxiety.

Wolpe's definition of neurotic anxiety incorporates this distinction between the two processes when he characterizes neurotic behavior patterns as those which are resistant to extinction under normal circumstances. Data from animal research provide the experimental basis for his contention that conditioned avoidance responses are resistant to extinction, particularly if the

subject is free to make avoidance responses to the conditioned stimulus. But, as Lomont has pointed out, in the process of reciprocal inhibition, the patient cannot escape from the conditioned stimulus at will. For example, in the process of desensitization, the patient is specifically instructed to imagine scenes from the anxiety hierarchy which are known to be related to anxiety.

To support his position that such a procedure may not differ significantly from ordinary extinction, Lomont presented a summary of the relevant literature which support the following contentions: (1) evidence exists that the extinction of an avoidance response is hastened if the subject is forced to remain in conjunction with the conditioned stimulus which prompted the fear response; (2) the lengthening of each exposure to a fear conditioned stimulus will reduce the number of trials required to extinguish the avoidance and fear responses. Lomont further stated that even those studies which ostensibly compare the two techniques are negligent in that they do not control for excessive movement which could permit more exposure to the conditioned stimulus in the group being treated by the method of reciprocal inhibition. On a priori grounds, the only technique Lomont found which might be exclusively a property of the reciprocal inhibition method is identified as the "progressive principle". This method is basically that of the graded presentation of the anxiety hierarchy. Lomont has reported that experimentation with rats yields no evidence that such a process is operative in the process of extinction. If further experimentation were to indicate that this principle is an important component of the

reciprocal inhibition technique, it would be a unique feature of this approach and would reliably differentiate it from the procedure of extinction. Lomont has further recommended that in order to substantiate the theoretical explanation of the principle of reciprocal inhibition, experimentation should be conducted which specifically compares reciprocal inhibition with extinction. The former should differ from the latter only in its attempt to reinforce a new response that is incompatible with anxiety.

Such a comparison was attempted by Gale, Strumfels, and Gale (1966). A group of rats were conditioned to fear a tone through the pairing of a 1500 cycles per second tone with an intense shock. These animals were subsequently divided into three matched groups which were subjected to different deconditioning methods. Group I was treated by the method of classical extinction. Group II differed from Group I only in that food was presented to the animals in the deconditioning trials. Great care was taken to control for excess movement which might permit more exposure to the conditioned fear cues of the apparatus. Group III comprised a control group. The animals under this condition were kept in their home cages to control for the natural loss of the fear response. The method of extinction for Groups I and II was the presentation of an "anxiety hierarchy" of tones which ranged from 300 cycles per second up to the original 1500 cycles per second through increments of 100 cycles per second. The results of this study provided support for Wolpe's hypothesis. Group II, whose anxiety was hypothesized to be reciprocally inhibited by the introduction of the feeding response, demonstrated

loss of the conditioned emotional response much more quickly than Groups I and III. In addition, if the process of extinction is regarded as the learning of new responses to old stimuli, the reciprocal inhibition technique is perhaps superior in yet another respect. When this method is employed, the patient does not have to search for an effective response. Instead, direction is given by the therapist.

Application of the techniques based upon the principle by reciprocal inhibition affords direction to the patient in a variety of ways; among these are hypnosis, suggestion, role playing and psychodrama. Such procedures are, no doubt, the basis for the charges by critics (Murray, 1963) that behavior therapy is unduly directive and manipulative. Such criticism, however, seems to be of a philosophical rather than of a methodological nature. Lomont (1964) has effectively defended the position of the behavior therapist through a consideration of the implications of determinism. At a more practical level, Grossberg (1964) has pointed out that manipulation occurs in all therapies. Therefore, criticism must be directed against the kind of manipulation, rather than against manipulation per se. Support for the kind of "manipulation" found in the general approach to behavior therapy is given by Goldstien, Heller, and Sechrest (1966). Empirical evidence supports the position that psychotherapy will be more effective if emphasis in therapy is placed upon the emitting of responses considered desirable in other circumstances. The practice and differentiation of appropriate responses should, in terms of learning theory, increase

the tendency of the individual to give that response in the presence of the appropriate stimuli. In general, Wolpe regards the acquisition of desired behavior as a process which requires constant coaching and feedback of results; a process which by-passes rational thinking and deals directly with nonverbal processes (Metzner, 1963). Ford and Urban (1965) have stated that this conceptualization suggests that the first step in the recovery of neurotic disorders is not a changed way of thinking, but a changed way of acting.



## HANS EYSENCK'S SYSTEM

The behavior therapy system of Hans Eysenck is perhaps unique. Although much of his work has been done within the Hullian framework, his emphasis upon the necessity of an adequate theoretical account of neurotic disorders has led him to attempt to expand and to modify this theory by the postulation of a two-factor theory of learning (Eysenck, 1963; Matarazzo, 1965). His approach to the problem of behavior disorders will first be considered from within a Hullian framework.

Eysenck (1960b) distinguishes two ways in which Hull's theory can be applied to the complex phenomena of social learning and behavior modification. The first of the two approaches conceives of the symptoms of behavior disorders as products of the general laws of learning which Hull has presented in detail. Therapy, therefore, would entail merely the removal of these symptoms (habits) through a method of treatment based upon these same laws of learning. It is this approach which characterizes Wolpe's work.

It is with the second mode of application, however, that Eysenck is most concerned. This approach is primarily a typographical, descriptive approach which considers individual differences in behavior rather than general laws of behavior. The possibility of an approach which considers individual differences in relating diagnosis to therapy, was first suggested by Ivan Pavlov (Eysenck, 1960b).

Pavlov hypothesized, after years of systematic observation of patients, that hysteria is due to an exaggeratedly strong inhibition of the cerebral cortex; psychasthenia, in contrast, is considered due to an exaggeratedly strong excitation.

The implications of an individual approach to the problem of disordered behavior creates a system that differs greatly from that of a general behavior theory. The basic premise of the individual approach is that the factors which underlie and account for the broad complexity of behavior can be isolated and specified. These factors are to be derived from large-scale studies of behavior involving numerous subjects and multiple measures which permit quantitative scoring. Given these surface indices, investigators then apply the techniques of factor analysis to determine which underlying factors determine or control variation in the surface variables (Hall and Lindsey, 1957).

Eysenck (1961) summarized the empirical studies which have been made according to this method and offered the following as major conclusions which have been reached:

(1) There are two main, independent factors in the psychiatric field, associated with the psychotic and neurotic disorders respectively; psychotism and neuroticism.

(2) Both factors define continua which range all the way from extreme disorder to normality; there are no breaks or qualitative differences which would enable the classification of people into separate groups.

(3) Introversiion-extraversiion emerges as a third independent

factor which interacts with neuroticism and possibly with psychotism.

(4) Distribution of individual scores on these factors reveals that no clusters corresponding to psychiatric disease concepts such as hysteria or schizophrenia exist; all distributions are continuous and without the clustering predicted in terms of such theory.

(5) Descriptively, factor scores give a much more detailed and much more accurate picture of individual patients than does psychiatric diagnosis.

(6) Individual patients tend to have scores on all factors, not just one; therefore, the customary practice of allocating a patient to just one diagnostic group is erroneous and misleading.

The major advantage of such a multi-dimensional approach, is that the old "disease entity" concept of classification of behavior can be discarded in favor of one which is operationally defined by objective performance for each individual. Not only does this classification deny that a specific "disease" is responsible for a disorder, but also that no specific cure can be applied. Rather, each diagnosis is regarded as a relative thing, and may shift along one dimension or another in the course of time, or as the consequence of specific experimental or therapeutic manipulations. This scheme implies testable relationships between diagnostic groups. Eysenck (1961) has stated that the method is of particular value because errors may be detected and corrected since the whole chain of argument is public and open to inspection.

Eysenck (1961) is careful to point out that the correlations derived from such a statistical treatment in no way implies causality and can in no way be thus interpreted without additional experimental proof. He states that "to know a persons position on a given dimension is one thing; to know the reasons for his being there and the methodology for changing his position is quite another." This type of information must be derived from theories of general behavior.

One variable which has been investigated extensively from the standpoint of individual differences is the concept of conditionability. This concept is incorporated as one of the basic postulates of the theory and techniques of all the systems of behavior therapy. Despite its centrality, however, Franks (1961) has reported that it is not known whether it is meaningful to use the term "conditionability". The existence of a general factor of conditionability has yet to be demonstrated and the manner in which it can be related to an individual organism is unspecified. To support this statement, Franks has pointed out that there is little agreement concerning the influence and importance of even the most fundamental parameters of the conditioning process. For example, the relationship of the intensity of the unconditioned stimulus to the conditioning process is not completely understood. Neither the neurophysiological mechanisms by which a conditioned response is established, nor its site or sites of action is known. Similarly, there is little agreement concerning the term conditioned response, or the aspects of behavior which should be included in this category.

Despite these difficulties, however, the methodology related to the conditioning of responses seems capable of contributing much valuable information to the understanding of human behavior and affords a promising tool in the attempt to establish behavior theory.

Franks (1961) proposed a theory of conditioning which was based upon experimentally derived knowledge and which utilized the concepts of Pavlov, Hull, and Eysenck. This conditioning theory is to be related to the etiology, diagnosis, and treatment of certain behavior disorders. The basic hypothesis which resulted from Franks approach is as follows:

Conditionability is related not to the degree of neuroticism present, (Eysenck's dimension) but centrally to the postulated excitation-inhibition balance (Pavlov) and behaviorally to the introversion-extraversion balance (Eysenck) of the individual concerned (Franks, 1961, p. 462).

It follows, that an introverted subject (cortical excitation), whether neurotic or normal, should form conditioned responses readily, and these responses once formed, should be difficult to extinguish. An extroverted subject (cortical inhibition) whether neurotic or normal, should form conditioned responses poorly; these responses once formed, should extinguish readily. Franks listed in detail the weaknesses of the theory but felt that its specific formulation enables the predictions made from the theory to be explicitly tested in a variety of situations and with a variety of conditioning techniques.

Eysenck (1961) has demonstrated the manner in which such an individual behavior theory can be utilized to predict the different levels of personality organization which are usually explained with

reference to the principles of general behavior theory. By causally linking the personality dimension of introversion-extraversion with its underlying central nervous system substratum, the excitation-inhibition balance, specific predictions are made possible. Eysenck postulated that persons whose central nervous systems are innately prone to excitation will tend to develop introverted behavior traits. In cases of abnormal functioning, such individuals should demonstrate dysthymic neurotic symptoms such as anxiety. Conversely, persons in whom inhibitory potentials predominate will tend toward extraverted behavior patterns and hysteric-psychopathic symptoms.

The major advantages of such a system of classification are threefold. First, the specific predictions made are capable of disproof and self-correction. Second, the system demonstrates the relationship between an individual theory of behavior and a general theory of behavior. Third, in conjunction with behavior therapy, such a system could serve as an important diagnostic tool. It is hoped that eventually the suitability of any one patient for behavior therapy, his likelihood of responding quickly, and the circumstances under which such therapy is likely to be successful may be predicted by making the appropriate laboratory tests beforehand and by observing the individual's relative position on the the introversion-extroversion continuum (Franks, 1961).

Eysenck, however, has by no means confined his work to this aspect of Hull's theory nor to Hull's theory in general. His concern as a theoretician is primarily directed toward the establishing of a general theory of neurotic behavior. He has stated (1963) that

the acceptability of such a theory must ultimately depend upon the ability of such a theory to present a "nomological network" within which events of disordered behavior can be explained and understood. Since it seems probable that it was the attempt to create this "nomological network" which led Eysenck to reject the Hullian framework as an inadequate theoretical basis, specific phenomena and their relation to the theory will be examined.

The first of these, the phenomenon of transference, presented no problem of interpretation within the Hullian framework (Eysenck, 1963). Eysenck has separated the fact of transference from the psychoanalytic interpretation. He postulated that the therapist merely represents the conditioned stimulus to which the attitudes and emotions appropriate to the unknown cause of the cure is transferred.

When Eysenck discusses symptom, extinction, relapse, and spontaneous remission in neurosis, however, his divergence from Wolpe and from the framework of Hull becomes more apparent. His definition of neurotic "symptoms" as unadaptive conditioned autonomic responses, or the skeletal and muscular activities instrumental in moderating these responses, implies this distinction. Eysenck distinguishes, on theoretical grounds, between the formation of types of neurotic disorder and discusses the methods by which these two types may be extinguished. Application of Wolpe's methods of reciprocal inhibition may be utilized in either of two ways, according to the nature of the symptom.

(1) When the symptom is of a dysthymic character (anxieties, phobias, depression, obsessive-compulsive reactions, etc.) it is

assumed that the disorder consists of conditioned sympathetic reactions, and the treatment consists of reconditioning the stimulus or stimuli to produce parasympathetic reactions. These reactions, being antagonistic to the sympathetic ones, will weaken and finally extinguish them.

(2) When the symptom is of a socially disapproved type in which the conditioned stimulus evokes parasympathetic responses (alcoholism, fetishism, homosexuality), or where there is an entire absence of an appropriately conditioned response (enuresis, psychopathic behavior), treatment (aversion therapy), consists of the pairing of the stimulus in question with strong aversive stimuli producing sympathetic reactions.

The major point of differentiation is that Eysenck distinguishes between the procedures of classical and instrumental conditioning as crucial elements in the genesis and treatment of both kinds of neurotic disorders, whereas Wolpe, following Hull, does not.

Spontaneous remission was hypothesized by Eysenck (1963) to be more probable in the case of disorders of the first type, in which autonomic responses are classically conditioned to originally neutral stimuli. It follows that on subsequent occasions the presentation of the conditioned stimulus would not be followed by reinforcement and in due course, extinction should take place. To explain disorders of the first kind in which spontaneous remission does not occur over time, Eysenck postulated that the phase of classical conditioning is followed by a stage of instrumental conditioning in which the patient withdraws from the conditioned



stimulus upon encountering it. Such a withdrawal will lower sympathetic arousal which acts as a reinforcement for the act of avoidance. As the habit of avoiding the conditioned stimulus builds up, the likelihood that the response will be naturally extinguished lessens. Therapeutic methods, however, can be utilized to effect the removal of such responses. Once the symptom has been removed, whether by natural or by therapeutic means, relapse should not occur in disorders. It is possible, however, that new traumatic events may occur which produce a new symptom and a new neurotic disorder.

Disorders of the second type present a much more complex problem. According to Eysenck's classification, the basic characteristic of these disorders is the formation of a strong bond between a previously neutral stimulus and a strong positive reinforcement. Extinction of such a disorder is unlikely in ordinary life situations. Punishment may temporarily decrease the performance of the behavior, but it will not remove the habit. Therapeutic treatment by aversion therapy also has inherent difficulties. Aversion techniques require split-second timing such that the aversive stimulus eliminates or at the least precedes the positive reinforcement. In addition, aversive conditioning may be extinguished in the same manner as another conditioned response is extinguished. Thus, relapse rate would be predicted to be much higher than that of disorders of the first type.

Another principle which Eysenck postulates to account for the higher relapse rate illustrates a further deviation from

the Hullian framework. Eysenck's reasoning is as follows (1964b): Since disorders of the second kind may be quite pleasant and agreeable to the patient, it is often society which provides the motivation for treatment. Unlike Hull, who does not consider the degree of drive in relation to the formation of a habit (Eysenck, 1960b), Eysenck postulates that performance is very much determined by the strength of the drive under which the individual learns the habit. Since the patient for whom society demanded treatment would have less desire to change his habits, he would be predicted to learn less effectively in a therapeutic situation (Eysenck, 1964b). To alleviate this high relapse rate, Eysenck (1964b) suggests that principles deduced from learning theory such as partial reinforcement, overlearning, spaced trials, and supportive conditioning be tested in clinical situations.

In addition to these specific extensions of the theoretical framework, Eysenck (1964a) also included in his latest book a section on Skinner's operant conditioning as well as a consideration of various other techniques. Eysenck's position, at present, is stated as follows:

We should, in approaching the problem of treatment in the neuroses, try to take as unbiased a view of modern psychology as possible. Hullians and Skinnerians may have their internecine quarrels within the academic stomping ground, but when it comes to practical work, they should leave their tomahawks and use whatever useful methods may come to hand in relation to any particular problem (1964a, p. 6).

Whether a theoretical formulation will eventually be advanced which is capable of solving such "academic" problems remains to be seen. Although Eysenck advocates practical application, it should

be reiterated that his theoretical formulations have placed such application within a more well-substantiated framework.

Metarazzo (1965) has stated that Eysenck's proposal of a two-factor theory might eventually allow the incorporation of more complex neurotic conditions related to the symbolic processes within the behavioral framework. Ford and Urban (1965) have stated that such an analysis of symbolic responses is necessary for an adequate therapeutic approach. They postulated that symbolic processes mediate both generalization of behavior and discrimination. Since these processes influence an individual's behavior, they may be assumed to be involved in most kinds of disorders.

Thus the potential of behavior therapy would seem unlimited. The development of this potential will depend ultimately upon the elaboration, refinement and broadening of its bases: psychological theory and research (Ullman and Krasner, 1965).

## SUMMARY

The consideration of disordered behavior within the framework of general psychology presents a feasible alternative to the traditional methods of psychotherapy.

The approach of the behavior therapists has been presented as being that which utilizes most effectively the principles of behavior derived from theories of learning and from the experimental laboratories as a theoretical rationale for clinical methodology. The basic principle underlying such methodology is that all behavior, whether adaptive or maladaptive, is learned. The techniques for the removal of behavior are many. The basic procedure for such removal, however, involves the systematic manipulation of the environmental contingencies which control this behavior. In addition, the therapist attempts to replace the removed responses with patterns of behavior which are more socially acceptable.

The behavior therapist's approach is demonstrated to differ from the traditional approach to psychotherapy with respect to the variables which he considers important. His focus of treatment is overt behavior, rather than postulated, underlying "causes". At present only the concepts acceptable to all learning theorists are consistently utilized within a clinical setting.

The learning theory of Clark Hull was presented as the conceptual model for the construction of the behavior therapy systems of Joseph

Wolpe and Hans Eysenck.

The psychotherapeutic system of Joseph Wolpe is based primarily upon the principle of reciprocal inhibition. This principle he has postulated to be the cause of success in any therapeutic situation. Wolpe has presented a learning theory of neurosis and his system is primarily concerned with providing techniques which permit neurotic behavior to be unlearned. Wolpe has hypothesized that if responses antagonistic to anxiety can be made to occur in the presence of anxiety, reciprocal inhibition of this anxiety will occur. He has presented several responses which he feels are very effective in this respect. Wolpe's theoretical account of the formation and removal of neurotic behavior has been a topic of controversy. The techniques which he has proposed, however, have proved to be remarkably effective.

The work of Hans Eysenck seems to make its most important contribution at a theoretical rather than a methodological level. He has distinguished between two types of behavior theory which are possible within the Hullian framework. The first of these, a general behavior theory, is typical of the work of Wolpe. The second, an individual behavior theory, is that utilized by Eysenck. Eysenck's later work has led him to reject Hull's theoretical model on the grounds that it is not completely adequate as an explanatory tool. His proposal of a two-factor theory of learning seems to broaden significantly the theoretical base within which behavior theory may develop.

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