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BEHAVIOR THERAPY FOR CHILDREN

SIDNEY W. BIJOU
WILLIAM H. REDD

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Sidney W. Bijou and William H. Redd

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Table of Contents

Behavior Therapy For Children

In the past decade psychotherapists have been turning in increasing numbers to behavioral techniques in the treatment of children. Almost twenty years ago, in 1954, a review of the child therapies (Bijou, 1954) showed that practically all the techniques then in use could be subsumed under these major categories: child psychoanalysis, the briefer psychoanalytic therapies, and client-centered play therapy. In 1966, a similar review (Bijou, 1966) showed the same three categories together with two approaches to behavior therapy. Now there are four approaches to behavior therapy, with a literature of well over a thousand titles.

The rapid acceptance of child-behavior therapy may be attributable to many conditions, some rather obscure, others patently obvious. Among the latter, four stand out. There is, first, the changing paradigms of scientific thought (Kuhn, 1962). Psychology viewed as the branch of philosophy concerned with the understanding of the mind has been gradually rejected in favor of a more scientific approach. The current focus of psychology is the control and prediction of behavior rather than the further explanation of mental processes and states. Perhaps more than any other approach to the treatment of psychological disorders, behavior therapy resonates with psychology as a natural science. Thus, behavior therapy appears to bridge the gap between the main stream of academic psychology and clinical practice.

A second factor contributing to the current popularity of behavior therapy is its effectiveness in individual cases. Behavior therapy has been successfully employed across a variety of kinds of behavior, disorders, ages, populations, and settings. If one were to read textbooks published fifteen years ago on the treatment of deviant child behavior, he would find for each problem listed a variety of presumed etiologies and treatment recommendations couched in very general terms. In contrast, current books on the subject (Yates, 1970) suggest definite procedures for assessing a single child's relevant repertoires and programming the treatment sequences.

Third, the explicitness of behavior therapy has led to its adoption by practitioners in the fields of medicine, education, and speech and hearing, and by counselors, social workers, parents, peers, and siblings. Interestingly enough, research and observation have shown that those individuals who interact with the child and most control powerful contingencies are, with training, very effective therapists. And inasmuch as they also have closer and more frequent contacts with the child than does the therapist, they can carry on the therapy program more regularly and over longer time spans.

The fourth factor is that the behavioral approach is applicable to children with a wide range of problems and deficiencies, i.e., they need not have the minimum prerequisite abilities (language, motor skills, etc.) required by most traditional psychotherapeutic approaches. In other words,

behavior therapy assumes that all behavior is governed by the same principles and, therefore, its use is not restricted to populations with particular problems or with minimal behavioral equipment. So adaptable is the method that to be a candidate for treatment a child need be neither verbal nor attentive nor even cooperative. This applicability of the behavioral approach to a broad band of problems has undoubtedly contributed to its rapid acceptance.

Before describing the nature and present status of child-behavior therapy, it may be well to clarify the meaning of two critical and sometimes confusing terms—behavior modification and behavior therapy—and to point out their common elements. Behavior modification refers to the application of behavior principles *or* learning principles to child rearing, education, psychotherapy, vocational preparation, and social movements. A synonym for behavior modification is applied behavior analysis. Behavior therapy, on the other hand, is the application of behavior principles *or* learning principles mainly to psychotherapy—the treatment of behavior problems, disturbances, and disorders in children and adults. The reason for saying that both behavior modification and behavior therapy deal with the application of behavior principles *or* learning principles is that some behavior therapists maintain that they are applying behavior principles (which includes learning principles) in their treatment programs while others claim they are applying learning principles. Other theoretical differences among behavior therapists

will be discussed later.

Perhaps the outstanding characteristic of child-behavior therapy is that it deals with inappropriate, maladaptive, or deviant behavior and its determining conditions. In contrast, dynamic and client-centered child therapies focus on intrapsychic problems and consider deviant behavior as symptoms of those problems.

Secondly, child-behavior therapy devotes its total effort to altering the environmental conditions that maintain the disorder. Therapy is concerned with the here and now of the problem behavior: the presenting problem or problems, the precise behavior that requires modification or augmentation, and the specific strategy for expediting changes. The strategy selected for altering behavior constitutes the treatment program, and the goals of treatment are the explicit kinds of behavior that the child is to acquire. Obviously, this approach has little in common with others that seek to "determine the origins and dynamics of inner causes" and to "resolve the underlying psychological conflicts," "help the client achieve insight," etc.

Since child-behavior therapy is, in fact, environmental modification, an understanding of the behavioral-science meaning of environment is essential. Environment does not mean "something out there" that a person can enter or leave at will. It refers to the stimuli that are in *actual* contact with a person.

From this point of view, then, a person is *always* in contact with the environment, which is described both in terms of its *physical properties* (a city park may be described according to its size, grassy meadows, majestic trees, play equipment, and picnic facilities) and in terms of its *functional properties* (for one child the same park may be an aversive stimulus, one that produces strong escape and avoidance reactions because during an excursion there he fell off a swing, was injured, and taken to a hospital; for another, it is a discriminative stimulus, a place where he can have freedom, fun, and frankfurters cooked on a barbeque; for a parent, it may elicit fond memories of family outings). Although a stimulus may be assumed to have fixed physical properties (at least for practical purposes) its functional properties vary across children and across time, depending on their past interactions with it and the circumstances at the time of analysis. In principle, the only way to determine what an object, a person, or a situation "means" to a child is to observe and analyze his behavior in relation to it. For practical purposes, however, we assume, at least as a tentative hypothesis, that many things have the same functional properties for most children because of the similarity of experiences with them and because of the similarity in child-rearing practices of the culture. For example, most children respond favorably to some form of social recognition such as praise, a pat on the head, etc. for their accomplishments. For those who do not, the therapist must find, through systematic analysis, the kinds of contingencies that are effective for each one

of them. In other words, from a behavioral-science point of view, people, objects, and events in a child's environment are analyzed according to their functions (meanings) for him rather than for some other person, such as his father, mother, or teacher. By knowing the personal meaning of stimuli for a child, the therapist can arrange conditions that will, in fact, help him to modify his own behavior, i.e., to learn.

A third feature of child-behavior therapy pertains to the way in which rapport—the positive emotional relationship between therapist and child—is used. In contrast to more traditional approaches, rapport is not considered to be of therapeutic value in and of itself or as a prerequisite for all therapeutic change. It is only essential if the therapist or person who serves as the change agent (professional or layman) plans to use praise, approval, and attention as reinforcers. This conception of the importance of the therapeutic relationship does not imply that the therapist considers it unimportant when a child is not reasonably responsive to him or to other adults. In such cases, he will include in his treatment plan the development of a positive relationship between himself (or change agent) and the child. Thus, according to behavior therapy, rapport is important as a means of increasing the therapist's value as an agent of social reinforcement, not as a therapeutic catalyst.

Finally, child-behavior therapy has its built-in correctional procedure. With observable behavior as his subject matter, the therapist generally

records (usually by a systematic counting procedure) the frequency of the occurrence of the problem with which he is concerned (i.e., base line) as well as the changes in the kinds of target behavior that take place during therapy. Such a monitoring system provides information that is necessary for altering the program when indicated, and for evidence of achievement of the therapeutic goals.

This chapter presents an overview of contemporary child-behavior therapy. It is divided into six sections: (1) historical background; (2) theoretical models; (3) behavioral diagnosis, classification, and initial assessment; (4) treatment procedures; (5) evaluation of child-behavior therapy; and (6) implications and future trends.

Historical Background

Child-behavior therapy has its origins in reflexology and behaviorism, movements that began at the turn of the century. One especially important contributor to reflexology was, of course, Pavlov, the Russian physiologist. Pavlov (1927) claimed that the physiology of the highest parts of the central nervous system of higher animals could be successfully studied in the laboratory by the conditioned-response method, i.e., by systematically pairing a neutral stimulus with an unconditioned stimulus and observing the formation of a conditioned response. He asserted, furthermore, according to

Boring that this method could be used to solve "problems that had hitherto been thought to be psychological, and that had not been brought to a successive solution, upon animals at least, by the psychological methods" (1929, pp. 581-582).

After he was well along in his research, Pavlov reported that some of his dogs showed "pathological disturbance of the cortex." He described this condition as loss of previously learned responses, restlessness, and excitement in the situation, and resistance to the experimental procedures. Pavlov attributed this disturbed behavior to the susceptibility of the animal's nervous system and to the kinds of stresses he had introduced in the laboratory. Some of these conditions included presentation of conditioned stimuli requiring mutually antagonistic responses, rapid transition between positive and negative stimuli, and reinforcement of a conditioned stimulus that had previously had an inhibitory effect. His findings on disturbed behavior convinced Pavlov (1932) that he had opened the way for the laboratory study of neurosis in humans. "The neurosis in man," he wrote in a letter to the American Medical Association, "must be interpreted or understood, that is, analyzed with the help of studies of neurosis in animals, which are naturally more simple . . ." [p. 1012].

John B. Watson (1920; 1930), an American comparative psychologist and founder of behaviorism, extended Pavlov's theory and laboratory method

to all behavior, contending that the subject matter of psychology is behavior, its methods are objective, and its central problem, like that of the natural sciences, is prediction and control. He claimed that human behavior, from the simplest to the most complex, can be accounted for in terms of the original behavioral equipment of an infant (innate behavior) and his interactional history with stimuli (defined physical terms) analyzed according to the principles of Pavlovian conditioning. Guided by this view, Watson and his associates collected experimental and longitudinal data on the behavior of infants, children, adolescents, adults, and senescents. Because of his particular interest in the influence of heredity and environment in determining a class of behavior (e.g., intelligence) he focused his attention on the innate behavior of infants. Watson theorized that innate behavior consisted of unlearned behavior (reflexes) and three basic emotions: fear, rage, and love, but subsequent research failed to substantiate his contention that each innate emotion consists of a fixed stimulus-response relationship (e.g., the stimulus for rage is the hampering of bodily movement and the response is the stiffening of the whole body, the free slashing movements of hands, arms, and legs, and the holding of the breath). However, Watson's studies with Rayner (1920) on "fear" behavior were true landmarks (McCollom, 1973), not because of their contribution to the nature of innate behavior but because they demonstrated the process of conditioning and generalization in the human infant. These studies were replicated and

extended by a host of investigators (e.g., Bregman, 1934; English, 1929; Holmes, 1936; H. E. Jones, 1931; and M. C. Jones, 1924, 1924). Watson's insistence that psychology is the study of the interaction of behavior and environmental events, his pioneering work on conditioning in the infant, and his vigorous interest in applied problems, especially in child-rearing practices, have had, as we shall see, an impact on the development of child-behavior therapy.

In the 1930s, psychologists began treating disorders in children as problems in learning or, stated differently, as replacing undesirable habits with desirable habits. There were, for example, reports on the treatment of tics and stuttering (Dunlap, 1932; Moore, 1938) and on enuresis (Morgan, 1939; Mowrer, 1938). This trend was short-lived because in the next 20 years child therapists turned to psychoanalytic theory for guidelines in the treatment of children. During this same time, a few investigators, notably Axline (1947), sought a new orientation in the approach of Carl Rogers.

The late 1950s and early 1960s saw a resurgence of the application of learning principles to child treatment. This time, however, much of the research and practice was tied in with the reinforcement theories of Hull (1943) and Skinner (1938). Hull drastically modified Watson's general behavior theory and then attempted to integrate it with the findings of Thorndike (1932) that demonstrated that many kinds of behavior are

strengthened not by the antecedent pairing of stimuli as in Pavlovian conditioning but by the *stimuli that follow the behavior*—the law-of-effect learning. Hull postulated that both classes of behavior, Pavlovian and Thorndikian, are strengthened (conditioned) by Pavlovian conditioning principles. Furthermore, he theorized that past interactions influence present behavior through the operation of a network of hypothetical variables (e.g., habit strength, drive, inhibitory potential). These internal variables alter a stimulus input in various ways to produce a response output that is a function of both the current situation and the individual's related past experiences. Since all of Hull's hypothetical terms were related to observable stimulus-and-response conditions, they were, in fact, empirical concepts, i.e., they could be used independently of his network of hypothetical variables. Hull's formulation influenced the field of child behavior and human development in many ways but particularly through the writings of Sears (1947) and Bandura and Walters (1965). The work of Sears and his colleagues led to generalizations about child-rearing practices (1957), and the work of Bandura and Walters to a comprehensive technology of child treatment (1969). Hull's theory also had an impact on the treatment of adults (Doll, 1948; Eysenck, 1960; Wolpe, 1958). Wolpe's approach is particularly cogent here because of its extension to children, particularly those with fears and phobias (Lazarus, 1959).

Skinner (1938) systemized the data based on Pavlovian conditioning

theory and on Thorndikian law-of-effect learning (sometimes erroneously called trial-and-error learning) in another way. Instead of trying to account for law-of-effect learning in terms of Pavlovian conditioning, he postulated two separate functional processes, one controlled by the pairing of antecedent stimulation (Pavlovian or respondent conditioning) and one by consequent stimulation (operant conditioning). Although the two processes may be separated for analytical purposes, it should be clear that in many everyday activities they interact with each other. Skinner carefully and deliberately restricted all of his analyses to the observable interactions between individuals and environmental events, i.e., hypothetical variables were excluded and generalized statements based on group data were eschewed.

Initial applications of Skinner's theory, known variously as radical behaviorism, descriptive behaviorism, or behavior analysis, were directed to learning by young normal children (Warren, 1943), grossly retarded children (Fuller, 1949), psychotic adults (Lindsley, 1956), and young severely disturbed (autistic) children (Ferster, 1961). These vanguard studies which took place in laboratory-clinical settings concentrated for the most part on exploring the power of reinforcement contingencies to change behavior. A few years later, studies appeared that aimed at developing techniques that would enable teachers, parents, and childcare workers to carry out behavior-modification procedures in the school, home, and hospital. Some examples of

such studies are the amelioration of everyday problems in a normal nursery school (Harris, 1964), of a serious "acting-out" problem in the home (Hawkins, 1966), and of severe emotional-problem behavior (autism) in a psychiatric hospital (Wolf, 1972).

Research during the early renaissance period, which emphasized the application of learning principles, set the stage for present-day practice and research in child-behavior therapy. Most present-day investigatory effort is devoted to extending, revising, and refining treatment techniques for simple one-to-one clinical settings and for complex natural situations. The variations in approaches to problems and in the interpretation of findings emphasize the fact that there is no such thing as *a* child-behavior therapy. Child-behavior therapies are tied together by the basic behavioral postulate that the subject for study is behavior in relation to environmental events, but each moves in a somewhat different direction in research and practice on the basis of its own theoretical model, the topic to which we shall now turn.

Theoretical Models

The theoretical models for child-behavior therapies may be grouped variously and may consist of few or many categories, depending upon the purpose of the classification. Essentially there are four major groups: (1) behavior analysis, (2) learning (conditioning) theory, (3) social-learning

theory, and (4) eclectic behaviorism.

Behavior Analysis

The behavior-analysis model originated in the laboratory research on the experimental analysis of behavior. This model is founded on the assumptions, empirical formulations, and research methodology of Skinner (1938; 1953; 1969) and the developmental theory of Bijou and Baer (1961; 1965). One basic assumption is that the subject matter of psychology is the *observable* interaction between a total-functioning, biological individual and environmental events, defined in physical and functional terms. Environmental events consist of stimuli from the physical environment, other organisms, and the physiological structure and functioning of the individual. Another basic assumption is that some responses are conditioned by antecedent stimuli (respondent or Pavlovian conditioning) and some by consequent stimuli (operant conditioning). Respondent behavior is strengthened by the pairing of a neutral stimulus and weakened by discontinuing the pairing or by counterconditioning. Respondent behavior plays a part in many kinds of everyday behavior, and particularly in emotional behavior. A fear reaction, for example, usually has a respondent component consisting of marked changes in physiological functioning (the activation syndrome). On the other hand, operant behavior is brought under the control of an antecedent stimulus (as in stopping a car when the traffic

light turned red) or modified in form (as in the shaping of a manual skill) by consequent stimuli or reinforcers in the context of some condition, such as deprivation of reinforcing stimuli. Operant behavior is weakened by non-reinforcement (extinction) and by aversive consequences. Verbal (linguistic), motor, and social behavior have operant properties. Complex kinds of operant behavior, such as decision making, thinking, problem solving, and self-control involve large components of verbal behavior and are viewed as functionally interrelated sequences (inter-behavioral structures).

The behavior-analysis model is concerned solely with the behavior of an individual child. Hence, interest is always focused on the conditions that produce change relative to the child's ongoing performance (base line). The treatment technology that has evolved from this model centers on developing abilities, skills, and knowledge repertoires, and on replacing undesirable behavior with desirable ones.

Learning (Conditioning) Theory

The learning (conditioning) theory of child therapy is associated with Wolpe's approach to the treatment of neurosis in adults (1958) and its extension to the treatment of children by Lazarus (1959) and others. This theory is built around the concept of habit, which may be defined as a consistent way of responding to a defined stimulus condition. Ordinarily, a

habit weakens and disappears when its consequences are no longer adaptive. However, Wolpe (1969) says that some habits show resistance to extinction despite their un-adaptiveness and that such recalcitrant reactions have a large component of anxiety. Since anxiety involves "a primitive (subcortical) level of neural organization, its weakening and unlearning can come about only through processes that involve direction action, i.e., purely intellectual action will not suffice."

According to the learning (conditioning) model, behavior therapy requires the application of experimentally established principles of learning in order to help a client overcome his neurotic habits and to establish new nonneurotic habits. These principles are derived from *one* kind of learning with variations that depend upon "the identity of interconnected neural sequences." The distinction between Pavlovian (respondent) and instrumental (instrumental in producing rewards) conditioning is not in the nature of conditioning but in the fact that in the former non-voluntary (autonomic nervous system) behavior is involved; whereas in the latter, voluntary (central and peripheral nervous system) behavior is the main ingredient. In this reductionistic theory, neurotic behavior is primarily a matter of autonomic conditioning, hence treatment techniques are based primarily on the Pavlovian paradigm. Behavior deficiencies, on the other hand, require procedures involving response contingencies or "rewards."

According to Wolpe (1969), treatment is accomplished on the basis of one or more of three conditioning operations: (1) counterconditioning, (2) experimental extinction, and (3) positive reconditioning. Counterconditioning, or the development of reciprocal inhibition, is therapeutic because: "If a response inhibitory of anxiety can be made to occur in the presence of anxiety-evoking stimuli, it will weaken the bond between these stimuli and the anxiety" (Wolpe, 1969, p. 15) A response that inhibits anxiety may be established in several ways, including training in assertive behavior or in progressive relaxation. The "positive" feelings generated in assertive training produce conditioned inhibition of anxiety and the motor actions involved inhibit and consequently displace the previous motor habit. By the same token, relaxation responses when properly managed can effectively counteract and replace anxiety responses. Counterconditioning procedures can also be employed to overcome responses other than anxiety reactions. For example, it may be the basis for establishing conditioned inhibition of obsessional and compulsive habits by aversion therapy in which a painful faradic stimulus, or some similar stimulus, inhibits the undesired behavior.

The second conditioning operation—extinction—is the progressive weakening of a habit through repeated non-reinforcement. This holds for responses dependent on positive reinforcers and for avoidance behavior dependent on aversive contingencies. The third conditioning operation,

positive reconditioning, is used as a technique to overcome un-adaptive autonomic responses, as well as to develop new habits of action or of thought in non-anxiety disturbances, such as in the treatment of enuresis. Wolpe states the principle of positive reconditioning as follows: "In order to establish a new behavior pattern in a particular situation, the desired response has to be elicited and each time rewarded, while the undesired behavior is consistently not rewarded" (Wolpe, 1969, p. 16).

Social-Learning Theory

The social-learning approach to the treatment of children with problems, which stems from the child-development theory of Sears (1947) and Bandura and Walters (1965), is best presented in a recent volume by Bandura (1969). According to Bandura, all behavior, from the simplest to the most complex, is acquired and maintained by three regulatory systems. The first pertains to external stimulus control, or the process by which behavior becomes closely related to environmental stimuli. Autonomic responses and emotional behavior can be brought under the control of environmental events through their contiguous association (as in Pavlovian conditioning) either by direct or by vicarious affective experiences. Instrumental behavior is likewise regulated by environmental stimuli that, by virtue of their association with different conditions of reinforcement, signify the consequences likely to accompany certain courses of action. Deviant

behavior, based on defective or inappropriate stimulus control, is accounted for primarily in terms of this principle. The second regulatory system relates to reinforcing or feedback processes, such as the conditioning of operant behavior. Both normal and deviant behavior can be eliminated and reinstated by varying their immediate stimulus consequences. The third regulatory mechanism operates through central mediating processes. "At this higher level stimulus inputs are coded and organized; tentative hypotheses about the principles governing the occurrence of rewards and punishments are developed and tested on the basis of differential consequences accompanying the corresponding activities; and, once established, implicit rules and strategies serve to guide appropriate performances in specified situations. Symbolically generated affective arousal and covert self-reinforcing operations may also figure prominently in the regulation of overt responsiveness" (Bandura, 1969, p. 63).

Modeling processes, in which new responses are acquired and existing behavior modified through the observation of other people's behavior, are prominent features in the treatment techniques of this approach. In all observational learning, the modeled-stimulus event is said to be transformed and retained in image and verbal memory codes. "Later, reinstatement of these representation mediators, in conjunction with appropriate environmental cues, guide behavioral reproduction of matching responses. Performance of observationally learned responses is largely regulated by

reinforcing outcomes that may be externally applied, self-administered, or vicariously experienced" (Bandura, 1969, p. 202).

Eclectic Behaviorism

Without a doubt the largest group of child-behavior therapists does not adhere to only one theoretical model. These therapists subscribe to the basic behavioral postulate and, depending on the problem at hand, they accept and apply the principles of classical conditioning, instrumental conditioning, operant conditioning, modeling (as a separate process), self-management or self-control mechanisms, correlational and psychometric theories of personality and abilities, psychodynamic concepts of personality and development, central-mediating processes, and cognitive restructuring. This position is admirably expressed and defended by Lazarus (1971) who, it will be recalled, espoused techniques based on Wolpian learning (conditioning) theory in his early work with children. Lazarus and other eclectic behaviorists believe that in this early period of its development, child-behavior therapy would probably advance more rapidly if it remained free from the restrictions of any one theoretical model.

As one might expect, eclectic child-behavior therapists also tend to range extensively in their research and service methods. Their research may be designed along either experimental or correlational lines and the former

may involve a single individual or several comparable groups, the latter simple normative relationships or complex factor-analytic procedures. Their clinical techniques may include non-normative assessment procedures such as interviews and informal surveys of behavioral repertoires as well as standardized tests of intelligence, school achievement, preferences, and personality that measure assertiveness, fears, introversion-extroversion, emotional stability, etc.

Behavior Diagnosis, Classification, and Initial Assessment

The diagnosis and the classification of children's behavior disorders have always been serious problems (Zubin, 1967). Aside from the difficulties inherent in trying to relate symptoms (patterns of behavior) to underlying psychopathic states or processes, there is the ever-present possibility that a diagnosis made at one stage of a child's development will not apply at the succeeding stage, with or without treatment. There is, in addition, a danger of applying to a child diagnostic terms that were developed primarily for adults (e.g., psychoneurosis). It is widely recognized that although a disorder in an adult and in a child may have features in common, each problem probably has a different history, requires different treatment, and is expected to have a different outcome. Furthermore, diagnostic labels probably stigmatize and handicap those who receive them (Rosenhan, 1973, Szasz, 1960). For example, the child who is diagnosed as mentally retarded is often cut off from

educational environments, social interactions, and contingencies that promote learning and placed in a sterile, "retarded" environment that may magnify any handicaps that he might have. Finally, these diagnostic categories have not been found to subsume a consistent set of different kinds of behavior (Lorr, 1963; Zigler, 1961) or to indicate specific therapeutic tactics. (Kanfer, 1970) At best, the diagnostic category indicates modal characteristics that, in an individual case, may have little resemblance to the child's behavior problems or to his repertoire of positive kinds of behaviors. For these reasons and others the diagnostic categories for the disorders of children in the Standard Nomenclature of Psychiatric Disorders and Reactions of the American Medical Association have not been widely accepted as is indicated by the fact that over the years some forty alternate diagnostic schemes have been offered.

Recently the Group for the Advancement of Psychiatry (n.d.) proposed a juvenile classification scheme consisting of ten major diagnostic divisions, each with several subtypes. The diagnosis of anxious personality is as follows:

> These children are chronically tense and apprehensive over new situations, often related to their extraordinarily vivid fantasies. They usually perceive the environment as threatening, however, and are not aware of and do not exhibit crippling anxieties, as do those with anxiety neurosis. Marked inhibitions or serious constriction of the total personality are not present, and they are often able to deal adequately with new situations after initial anxiety, in contrast to children with developmental deviations, who do not have stage-appropriate social capacities available (Group for the Advancement of Psychiatry, p. 241).

This approach to the diagnosis of children's disorders is based on the assumption that patterns of behavior are symptoms of psychopathology in the structure and functioning of psychic entities. Furthermore, this classification proposal consists of generalized statements that may or may not refer to actual child-environment interactions. At best, it may have a kind of internal consistency, i.e., an acceptable level of agreement among those trained in psychoanalytic theory. Since the system does not focus on the specific interactions involved, it does not provide the therapist with the kinds of information that would help him determine treatment goals, treatment strategy, program initiation (base line), etc.

Behavioral Diagnosis and Classification

Among child-behavior therapists, there are two schools of thought on the problem of diagnosis and classification. One, represented by Quay,78 regards it as a group-analysis problem that is handled best by psychometric procedures, e.g., multivariate-statistical analyses of test results. The contention is that such an approach will eventually reveal a relatively independent set of diagnostic categories for juveniles, e.g., conduct disorder, personality disorder, immaturity, socialized delinquency, etc., and when this is accomplished the stage will be set for research on the etiological and predictive correlates for each diagnostic category.

The other view conceives of diagnosis and classification as a problem in individual analysis and in relation to treatment strategy. Here the diagnostic problem is treated like a clinical-intake evaluation (like Kanner's Complaint Factor, 1948), the main purpose of which is to provide information that will help the therapist or staff decide whether he or the agency is adequately equipped to handle the problem. Through reports, and sometimes direct observations, the therapist or caseworker categorizes a child in behavioral terms and decides on the basis of the agency's facilities, staff, and case load, whether to accept him or to refer him elsewhere. If the agency's treatment program is carried out primarily through group interactions (e.g., a special class or an activity group) the initial classification of a child helps the staff to determine whether the group can accommodate him. In their comprehensive review of the status of psychotherapy, Strupp and Bergin (1969) comment on the behavioral diagnostic approach:

> A new philosophy and methodology of diagnosis is developing within the behavioral school. It is being complemented by the work of an increasing number of eclectically-oriented psychiatrists who tend to focus upon pragmatic, behavioral criteria such as being in or out of school, maintaining marriage or becoming divorced, frequency of arrest, being in or out of the hospital, etc. While still in its infancy, this approach is having an increasing impact upon clinical assessment and upon the specification of outcome criteria for research purposes (Strupp, 1969, p. 60).

In the individual-analysis approach, the number of categories and their designations vary. Here we shall adhere to a fourfold classification scheme.

The first category consists of problems described as *behavioral excesses* (Bijou, 1971; Kanfer, 1969; Kanfer, 1969, Reese, 1970; Ross, 1971; ross, 1972; Sherman, 1969). Behavioral excesses are normatively judged in terms of frequency, intensity, or both. Children considered to have such problems include those described as conduct problems, such as extremely aggressive, hyperactive, disobedient children, etc. The second consists of problems involved in *shy, withdrawn, and fearful kinds of behavior.* It includes children with specific or generalized phobias, children described as adjustment problems (Ross, 1972) or personality problems (Quay, 1972) in which timidity is an overriding feature. The third consists of problems related to *behavior deficits,* or weak behavior (Bijou, 1971; Reese, 1970; ross, 1971; Sherman, 1969), which includes children underdeveloped in self-care, language, social skills, academic abilities, and basic knowledge. The fourth group consists of problems centering on *defective stimulus control* (Bijou, 1971). Children in this category have many serviceable behaviors, but, from the point of view of society, they occur under inappropriate circumstances. Illustrative of this group are children who talk, but do not direct it to people; children who react to people as objects; children who have acquired the proper social behavior, but do not apply it under the proper circumstance (often referred to as psychopathic or inept); and children who do not always differentiate appropriately between imaginary and real interactions.

Can this descriptive classification scheme help the psychotherapist

determine the etiology of a behavior problem? Before attempting to answer this question, several points should be made explicit. First, in the science of human behavior, the concept of etiology and the concept of cause are one and the same. Hence, the two terms are used here interchangeably. Second, a pattern of behavior, normal or deviant, is caused by, or is a function of, a child's genetic and personal history (ontology) and the interactional situation in which the behavior is observed. Child psychotherapists seldom investigate the genetic history of a child in seeking the cause of a problem; most often they accept it as a set of conditions that determine, in part, his unique biological structure and physiological functioning, which in themselves contribute some of the conditions that influence the child's behavior. Those psychotherapists who are interested in exploring a child's personal history for clues to the cause of his problem must carefully analyze the entire sequence of interactions between the child's biological make-up and the actual environmental events. In other words, to know why a child behaves the way he does is to know the sequence of interactions that have led to and have produced that particular behavior. Information of this sort is neither easily nor readily obtained. The usual secondary sources, such as retrospective accounts by child and parent and psychological tests, have proven to be useless (Yarrow, 1968). Even if it were possible to obtain accurate and detailed accounts of actual interactions, this information would not be particularly helpful since his objective is not to undo or redo a child's history

but to deal therapeutically with his problem as it exists. To do so he must analyze the conditions that maintain the problem behavior and rearrange them in ways that will help the child learn new behavior. We therefore conclude that although it is potentially possible to determine the etiology of a child's behavior disorder, it is unnecessary to do so because that knowledge does not contribute to planning and executing an effective treatment program.

To contend that a child psychotherapist need not explore the actual history of a behavior problem does not mean that he ignores information about a child's background and current situation. On the contrary, he usually seeks such data in his initial assessment procedures because they serve other purposes, as we shall see.

Initial Assessment

It was stated earlier that the purpose of the initial assessment is to provide the therapist with the details of the problem and the setting conditions to enable him to prepare a treatment program that meets the child where he is. Initial assessment is accomplished by (1) interview, (2) inventories of the child's behavioral equipment and of his reactions to people and objects (their meaning to him), and (3) standardized tests. The interview not only provides background and current information but also serves to

develop a language system that allows the interviewee to communicate with the interviewer, to pinpoint the exact problem that requires treatment (Lazarus, 1971), and, in cases with multiple problems, to provide considerations for establishing treatment priorities (wolf, 1964). Check lists and questionnaires are sometimes included in the interview (Lazarus, 1971, Wahler, 1969).

The exact behavior categories inventoried in the initial assessment depend on the problem presented but, in general, cover answers to such questions as: (1) What behavior assets does the child have that can be used to build a treatment program? (2) What stimuli have acquired strong conditioned aversive properties for the child and what levels of representation are tolerable for him? (3) What stimuli have strong reinforcing properties for the child? (4) What conditions maintain the problem behavior? This last question is particularly relevant when therapy is conducted *in vivo,* as Wahler and Cormier (1970) point out:

> If social contingencies are to be therapeutically rearranged for the deviant child, one must know who provides these contingencies, in what behavior form they are provided, for what child behaviors they are provided, and in what specific settings or sub-setting they are provided. Given this information, the clinician is in position to intervene—to train the significant "contingency dispensers" (e.g., parents and teachers) to modify their interactions with the child (1970, p. 279).

Standardized tests of intelligence, school achievement, and personality

are used in different ways and in different degrees by child-behavior therapists. Some use them as an aid for diagnostic determination, therapeutic planning, base-line criteria, and terminal evaluation. Others use them to provide information requested by principals, school psychologists, teachers, and caseworkers. Still others do not use them at all.

Therapeutic Procedures

The systematic strategies of child-behavior therapy, as we have seen, consist of (1) setting one or more behavioral goals, (2) following therapeutic procedures based primarily on learning or behavior principles, (3) initiating the treatment program at the child's current level of performance (base line), and (4) determining monitoring procedures. This section will deal with the second step, following therapeutic procedures. Steps one and three were discussed in the section on initial assessment. With regard to step four, we need only to add that systematic monitoring procedures are an indispensable approach that aims to bring about changed behavior through environmental modification. When the data from running accounts indicate little or no progress, the therapist is cued to modify his procedures (and sometimes his materials) until there is evidence of change in the direction of the therapeutic object. Typically, procedural alterations mean adjustments of some portions and not abandonment of the entire program for a new one. Monitoring data also supply information relative to the terminal criterion.

The particular set of procedures a therapist uses for a given child depends upon the problem behavior, the conditions that maintain it, and his theoretical orientation. We pointed out in the section on theoretical models (see page 323) that although the various therapeutic approaches subscribe to the basic behavioral assumption, the principles followed by each are somewhat different, hence the techniques employed by each are also somewhat different. Each behavior therapist will tend to view a child's problem within his own theoretical framework, but the indisputable criteria of therapeutic effectiveness are the observable changes in specific aspects of a child's behavior. Thus, it might be said that the behavior therapist's procedures are guided largely by his theoretical orientation, and at the same time controlled by the behavioral outcome.

The main processes of treatment involve (1) weakening aversive behavior and strengthening prosocial (appropriate or desirable) behavior; (2) replacing shy, withdrawn, and phobic behavior with prosocial behavior; developing new behavior repertoires; and bringing behavior under prosocial stimulus control.

Weakening Aversive Behavior and Strengthening Prosocial Behavior

Extinction or non-reinforcement is sometimes used to reduce aversive behavior (behavior aversive to someone else) in conjunction with positive

reinforcement to strengthen desirable behavior that is incompatible with the undesirable behavior. This approach was utilized in a classroom with an eight-year-old, hyperactive, underachieving, second-grade boy (Patterson, 1965). Base-line observation showed that pushing, hitting, squirming, and tapping constituted most of his aversive behavior. The treatment objective was to weaken and eliminate this behavior by reinforcing with candy and by praise for working productively at his desk. A small light and counter, mounted on the child's desk, registered (flashed and counted) after he had remained quietly seated for ten seconds. At the beginning of the program, the teacher came over and reinforced him as soon as the light flashed. After he had become familiar with this contingency, the teacher explained that the counter would keep score of the candy he had earned and that she would come back after awhile to give him the pieces he earned. The intervals between teacher reinforcement were gradually increased, and, correspondingly, the child's productive work time increased (up to two hours). In order to enlist the cooperation of his classmates, the teacher instructed them not to talk to the youngster while he was working. To reinforce their efforts, they were given pennies according to the target child's tally at the end of each period. A similar procedure was used with six hyperactive, mentally retarded children (Doubros, 1966). In this study, tokens exchangeable for candy were given, contingent upon quiet, constructive behavior. In all cases, the level of hyperactive behavior was

reduced.

Aversive contingencies (rather than extinction) for aversive behavior are often used together with positive reinforcement of incompatible prosocial behavior. One aversive procedure, known as time-out, involves removing for a brief period opportunities for positive reinforcement immediately following the occurrence of some form of unacceptable behavior. In the treatment of a four-and-one-half-year-old boy's aggressive biting, hitting, and kicking, the teacher reinforced cooperative behavior with praise and attention while, at the same time, removing the child from the classroom immediately following aggressive behavior (Sloane, 1967). Time-out consisted of placing the child in an adjacent room free of toys and objects that could provide a source of reinforcement. The teacher who observed his behavior from behind a one-way vision screen returned him to the classroom after he had remained quiet for two minutes. As the frequency of his aversive behavior decreased, the teacher instructed him in cooperative play and provided him with opportunities to generalize his newly learned social behavior. Similar procedures have also been used with older, mentally retarded children with good success (Vueklich, 1971).

Another procedure for reducing aversive behavior involves a combination of response costs—taking away reinforcers after undesirable behavior—and providing positive reinforcement of incompatible prosocial

behavior. In this approach, the child either receives or loses reinforcers depending upon his behavior. The contingent loss of reinforcers is a variation of an aversive operation. In token economies in which participants in a prescribed group earn money for good behavior, response-cost procedures usually call for fines for inappropriate behavior, i.e., the child loses tokens or points each time he engages in the prohibited behavior (Burchard, 1967; Burchard, 1972). Response cost in combination with positive reinforcement has been successful in a comprehensive community program retraining young boys who have been described as delinquent or in danger of becoming delinquent (Wolf, 1972).

Response cost, on a contingency contracting basis (Homme, 1969), has been applied in individual-therapy programs. For example, all visitation privileges were taken away from a ten-year-old, retarded resident of a treatment center when he was repeatedly found with someone else's possessions (Wetzel, 1966). If at the end of a day he had not stolen anything, he was allowed to visit a close friend; if he had taken something he was told why he could not visit and was restricted to the center for the evening. Within twelve weeks the child's stealing ceased and did not reoccur during a five-month, follow-up period.

Contingent physical aversive stimulation, another technique, is used to weaken aversive behavior (usually in cases in which the behavior is aversive

to the child) and also coupled with positive reinforcement for incompatible prosocial behavior. The critical behavior usually involves the child's hitting his head or body on hard surfaces, slapping his face, scratching, or biting himself. If extinction, time-out, or response-cost procedures were employed in these cases, the child might seriously injure himself before the behavior diminished to any appreciable degree. The usual institutional treatment procedure of restraining the child, either by physical or chemical means, prevents the child from hurting himself, but severely limits his opportunity to acquire new behavior.

Contingent physical punishment is rarely considered preferred treatment and is generally resorted to when other techniques have proven ineffective. An example is the case of a nine-year-old, blind, mentally retarded boy who persisted in slapping his face, banging his head, and hitting his shoulder (Tate, 1966). After baseline observations, a treatment program was instituted of presenting and withdrawing positive reinforcers for prosocial and self-destructive behavior, respectively. During daily walks, two attendants talked to the boy and allowed him to hold their hands as long as he did not attempt to injure himself. Whenever he hit or abused himself in any way, the attendants immediately jerked their hands free, moved away, and stopped talking to him. This procedure (time-out from attention) continued until he had stopped hitting himself for three seconds, whereupon the attendants again held hands with him and continued their walk. Although this

procedure resulted in a marked decrease in self-injurious behavior (6.6 responses a minute during base line versus 0.1 response during treatment) the severity of the self-damage even from infrequent occurrences necessitated a modification of the program. In order to more effectively suppress the face slapping, a physical aversive contingency was introduced. Each time the child slapped himself, a brief electric shock was delivered that resulted in an immediate reduction in self-injurious behavior. No side effects were observed. To maintain this improved behavior, adults praised and gave attention to social behavior that was incompatible with the child's self-injurious behavior. The self-injurious behavior was eliminated and it was now possible for the child to go unrestrained during the day. Similar results with other forms of self-injurious behavior have been reported (Lovaas, 1965; Lovaas, 1969, Risley, 1968). In all instances, physical aversive contingencies were used in conjunction with positive reinforcement of incompatible, appropriate behavior. Elimination of self-destructive behavior enabled the children to participate in social and educational programs.

Replacing Shy, Withdrawn, and Phobic Behavior with Prosocial Behavior

The treatment of isolate behavior in preschool children generally requires changing the contingent social behavior of adults. Children's prosocial behaviors are as a rule followed by adult praise and attention; isolate and withdrawn behavior is associated with contingent withdrawal of

adult praise and attention. After observation of a four-and-one-half-year-old girl's social behavior for baseline data, the teacher was instructed to pay attention and give her appropriate praise *only* when she was interacting with other children and to ignore (extinction) her in a natural way when she was by herself (Allen, 1964). Initially, any approximation of social interaction, such as sitting near another child, was reinforced by the teacher. As the child began to interact more readily with other children, the teacher increased the requirements for reinforcement and attended to the child only when she was engaging in cooperative play. Gradually, she reduced the frequency of her reinforcement. With this procedure, peer interaction during a school day increased from 15 to 60 percent.

Another technique that has been used to increase social interaction is to reinforce behavior that requires social interaction, as in the case of a nursery-school child who received teacher attention when she used play equipment that she had earlier avoided (Buell, 1968). Once again, as outlined in the previous case, the teacher first reinforced approximations of the target behavior and then gradually increased the requirements for reinforcement until the child was vigorously using the play equipment. Since peer interaction was a corollary of the reinforced-play behavior, there was a concomitant increase in social interaction. In a similar case study, the teacher reinforced a five-year-old, isolate boy with nickels and praise for distributing candy and treats to other children in the class in order to strengthen his social

interaction (Kirby, 1970). Following this training there was a marked increase in the child's peer interaction in other school settings as well.

Modeling or imitation techniques have also been employed to reduce isolate, solitary behavior. The child first has the opportunity to observe another person engaging in the behavior he himself fears, with no aversive consequences. (In fact, the model is usually reinforced for this behavior.) After observing the model, the child is encouraged to do approximately what the model did and is reinforced. This procedure is repeated until the child is able to engage without hesitation in the once-feared behavior. An example is a six-year-old boy whose extreme social withdrawal from his peers was eliminated following such a treatment program (ross, 1971). In order to establish generalized imitative behavior, the therapist associated himself with various positive reinforcers, was warm and demonstrative, and reinforced the child for imitating simple motor responses. After the child readily imitated him, the therapist began to model positive social interaction and discuss the positive aspects of peer interaction. During subsequent play periods the child was reinforced by the therapist for approximations of the desirable social behavior. Treatment continued through a graduated series of social-interaction phases until the child's social behavior resembled that of his peers. After the seven-week program, and in a two-month, follow-up evaluation, there was an appreciable reduction in the child's social-avoidance behavior.

Another technique for weakening or eliminating troublesome fears and phobias is systematic desensitization, which involves gradually weakening the power of a stimulus to evoke a neurotic-anxiety reaction (Wolpe, 1958). Although this procedure was initially developed for use with adults, it has also been applied successfully to children. An example is a nine-year-old girl's anxiety reaction to her mother (Straughan, 1964). In her mother's presence she was very quiet and showed little or no spontaneity. During weekly sessions the child played with a therapist while the mother observed from behind a one-way vision screen, receiving instructions from a second therapist on ways to respond to her child so as to help her allay her anxiety. When the child became relaxed and showed a variety of spontaneous expressions in her play with the therapist, the mother was brought into the room. In subsequent sessions, the mother spent more and more time playing with the child until the child was able to play with her in a relaxed spontaneous manner. After only five treatment sessions, the mother reported that there were decided changes in her child's behavior with her at home. An eight-month, follow-up evaluation showed continued improvement in the relationship.

"Emotive imagery," a variation of systematic desensitization, has also been used to reduce phobic behavior (Lazarus, 1959). Basically, it involves stimulating reactions to positive stimuli in the context of aversive or feared objects or events to reduce their strength or intensity. After listing the child's

fears in order of their severity (constructing the hierarchy) and his most enjoyed storybook characters and events, the therapist creates and tells a story that presents the least fearful on the list in the context of the child's most favored storybook characters. He is told that if he feels frightened as the story progresses up the fear hierarchy, he is to inform the therapist and he will return to a less fearful part of the story. Cases successfully treated by this technique included an eight-year-old boy who was afraid of going to the dentist, a fourteen-year-old girl who feared dogs, and an eight-year-old girl who was afraid to go to school. With the dentist-phobic boy, the therapist developed a sequence of stories about fictional characters, Batman and Robin, on a variety of adventures all of which eventually lead to the dentist's office. During the sessions the boy was asked to imagine himself on these adventures and then to picture himself sitting in the chair as Batman and Robin watched. Following therapy, the mother reported that the boy visited the dentist for a checkup without any resistance. No relapses or symptom substitutions were found in any of these cases in twelvemonth, follow-up inquiries.

School phobias, including feigning illness, tantrums when taken to school, and simply refusing to go to school, have been treated by what may be called in vivo desensitization. One variation is exemplified by the therapist who took a nine-year-old boy for Sunday walks and discussed the enjoyable things and events related to school (Lazarus, 1965). In later sessions,

scheduled on regular school days, the therapist encouraged him to enter the school yard, then the school building, and finally the classroom. The length of time the boy spent in the classroom was increased little by little until he stayed the entire school day. Simultaneously, school attendance was reinforced with teacher and parental praise as well as with candy, comic books, etc. Gradually, the contrived contingencies were eliminated and the child was able to attend school on the basis of contingencies ordinarily associated with school attendance, namely, parent interest, teacher recognition for achievement, progress in school work, and positive social relationships with peers. In another variation, a mother served as change agent for her school-phobic, eight-year-old daughter, giving her prizes and candy for going to school and withholding treats and nonessential social interactions for staying at home (Leventhal, 1967). In order to encourage the mother to carry out the details of the program, the therapist included mildly aversive consequences for her when her daughter resisted going to school. If, for example, the child failed to leave for school at the right time, the mother had to walk three miles to school with her. Within one month, the child was attending school regularly. A one-year follow-up showed no decrease in the child's school attendance or any indication of symptom substitution.

Sometimes the treatment of school-phobic children begins in the therapist's office and ends in the situation that is the problem. In one case, initial sessions with a first-grade boy consisted of doll play that was gradually

changed to resemble his school setting (Patterson, 1965). Nonphobic responses to representations of his school setting were reinforced with candy. After he readily played school in the therapist's office, he was escorted to the school by the therapist and was reinforced for doing so. Here, too, the period at school was progressively lengthened, the contrived reinforcers were gradually removed (faded) and the child attended school in typical fashion.

Developing New Behavior Repertoires

Psychotherapy is frequently designed to develop new behavior, behavior as primitive as paying attention to relevant stimuli. Since such attending behavior is a prerequisite for learning social and academic skills, the establishment of eye contact with the therapist is often the first order of business. Although eye contact can be established by contingent adult attention, approval, and praise (McConnel, 1967), edibles are most commonly used. The therapist holds an edible object like a piece of sweet cereal near his eyes and says, "Look at me." As soon as the child looks toward the object, and by necessity at the therapist, he gives the "goody" to him. When the response is immediate and stable, the goody is gradually eliminated as a prompt, and the child responds to the simple request, "Look at me."

A program for strengthening attending behavior is often the initial step

in language training (Lovaas, 1966). After attending behavior has been established, other prerequisite behavior for language is introduced. For example, many language programs include extensive training in imitation. A five-and-a-half-year-old autistic child was taught to imitate various simple sounds by being reinforced with food, music, and activities for successive approximations of the sounds (Hewett, 1965). Using this shaping procedure, the therapist increased the response requirements for reinforcement until the child was saying recognizable words. The number of words he learned accelerated over sessions. In order to make the child's speech more functional, the therapist's verbalizations, which served as prompts, were gradually replaced with objects and printed words to which responses were required.

A child's ability to attend to another person and to imitate simple kinds of motor behavior is also important in the acquisition of other kinds of complex behavior. If a child can imitate words and actions, training is simpler. Instead of having to shape each new behavior through a series of successive approximations to the final response, the therapist can simply model (i.e., demonstrate) the new behavior and reinforce the child's imitative behavior. The new behavior is usually presented along with behavior already in the child's imitative repertoire. An example of this procedure is the research on developing, in autistic children, complex social and intellectual behavior, such as personal hygiene, nonverbal communication, writing, and playing games

(Lovaas, 1967). Since social imitation was lacking in these children's behavior repertoire, they were trained with the aid of prompts to imitate sixty simple kinds of motor behavior and were reinforced for their imitations. Once a child learned to imitate without prompts, new kinds of behavior were readily acquired.

The effectiveness of behavior therapy has been clearly apparent in the teaching of self-help skills to children who can attend and imitate. Bensberg, Colewell, and Cassell (1965) prepared and evaluated individualized training programs for retarded children in feeding, grooming, toileting as well as following instructions. Typically, each program begins by building upon behavior the child already has, as determined in the initial assessment. If the assessment indicates that certain prerequisites for acquiring a particular skill are absent, training is instituted to develop the required prerequisites. By prompting and then reinforcing, usually with edibles, successive approximations of the desired behavior, the self-help skills are gradually acquired. This procedure ensures that all children associate learning with positive objects and events since the reinforcement contingencies are specified in terms of successive approximations of the desired behavior. In order to prevent dependence on edible reinforcers, the therapist systematically replaces the goodies with social reinforcers. At the beginning of the program, the therapist praises the child as she gives him each edible. After the target behavior has been acquired, the edible reinforcers are

gradually discontinued and only social reinforcers are used. With each successive step in the program, longer and more complex behavior is required before a reinforcer is given. If a child fails at any point in the program, the therapist returns him to the preceding step. Monthly ratings on Doll's Vineland Social Maturity Scale (1948) showed that the children trained by these programs made substantial improvements as compared to children who had not received this training.

Similar success was achieved with children who had even greater deficits in self-help skills: they were profoundly retarded and unable to feed themselves or use eating utensils (Berkowitz, 1971). In the initial step of the program, the therapist guided a spoonful of food into the child's mouth. As the child learned to coordinate his hand and arm movements, the therapist's assistance was gradually withdrawn. Negative contingencies were invoked for eating with the hands. For example, if a child failed to use his spoon, he was removed from the table for a period or was not permitted to complete the meal. These training programs, coupled with contingencies aimed at maintaining the newly acquired skills, resulted in marked improvement in mealtime behavior.

Bringing Behavior under Prosocial Stimulus Control

Many children come to the attention of therapists because they engage

in certain normal behavior at the wrong time or in the wrong place. They fail to make certain kinds of discriminations that are important to them or to society. For example, an echolalic child's verbal behavior may be adequate, but it is not directed to people and hence cannot be reinforced in the usual way. In such a case, the therapeutic task is to help the child relate his behavior to appropriate circumstances. This is accomplished by discrimination training in which particular kinds of behavior are reinforced in the presence of certain stimuli and ignored or punished in the presence of other stimuli.

The classical features of an autistic child are his inappropriate use of speech and his lack of social responsiveness. These attributes pose serious problems for the therapist because in any treatment plan the child must be able to attend to instructions and demonstrations. The first task for the behavior therapist, working with children who do not relate appropriately to people, is, therefore, to establish the necessary prerequisite behavior. In some instances, he must begin by establishing eye contact and reducing incompatible, disruptive behavior. In others, he may proceed directly to training in stimulus control of verbal behavior. A therapeutic program designed to develop functional speech in echolalic children is an example of the latter approach (Risley, 1967). In order to prevent the child's repeating what he heard, the therapist immediately prompted and reinforced the first word in the reply. If the child began repeating the word, the therapist quickly turned away (time-out) and removed the box of candy reinforcers. After

imitative control was obtained, the therapist shifted from verbal prompts alone to prompts with objects and pictures, and the question, "What is this?" Incorrect imitation of the question or echolalic speech resulted in the therapist's withdrawing the object or picture and turning away; correct responses were, of course, reinforced. After the child had learned to respond to the therapist's question by naming objects without prompts, he quickly acquired an extended vocabulary. The single words were then expanded to phrases and sentences. Using new skills in appropriate social situations was effected through initial prompting and immediate reinforcement. By gradually increasing the situations in which the child was required to use appropriate speech, the therapist increased the generalization of the acquired behavior. To extend generalization further, speech training was carried on in the home, with the parents serving as therapists.

Incontinence is another example of inappropriate stimulus control. Ellis (1963) suggested that appropriate toileting behavior requires making a series of discriminations. The physiological cues generated by a full bladder or rectum, for example, evoke alerting responses that, in turn, stimulate (after training) approach responses toward a lavatory and elimination.

One technique for treating enuresis in the home involved training the child to retain liquids (Kimmel, 1970; Paschalis, 1972). The child was instructed to let his parents know when he felt pressure and had to go to the

bathroom. The parent told him to hold for five minutes and, after this period, gave him a cookie or favorite treat and then allowed him to go to the bathroom. The waiting period was gradually increased until the child could wait for thirty minutes before going to the bathroom. As the child learned to retain his urine during the day, there was a corresponding decrease in bed wetting. Of the thirty-one enuretic children who were treated, twenty-three showed significant improvement within twenty days. A nine-month, follow-up study showed no relapses or new forms of problem behavior.

The most comprehensive program for toilet training institutionalized, retarded children is based on precise programming of differential contingencies for voiding and elimination (Azrin, 1971). Two monitoring devices were developed, one incorporated into training pants, the other installed in a toilet bowl. If a child wet or soiled his pants, a tone was sounded and the attendant immediately initiated a series of mildly aversive consequences. The child was told to shower and change his clothes, then to wash his soiled clothes, and to mop the area in which the "accident" had occurred. A one-hour time-out following each "accident" deprived him of drinks and candy and of the right to sit in his favorite chair. To increase the number of opportunities for the attendant to reinforce elimination into the commode, each child was given quantities of liquids during each hour and was taken to the toilet every thirty minutes. If elimination occurred, the sensing device turned on a signal and the child was reinforced with a big

piece of candy and praise for his accomplishment. He was also reinforced once every five minutes he sat on the toilet and tried to eliminate. In this program, modeling procedures were also employed. Groups of children were trained simultaneously so that they could observe each other being reinforced for correct toileting. The outcome of the program was impressive: the frequency of accidents was reduced by 80 percent within seven days. For some individuals, training required only a few days.

Encopresis or involuntary defecation has not received as much attention as enuresis. Programs for such training generally consist of ignoring (nonreinforcing) "accidents" and positively reinforcing each occurrence of the desired behavior (Lazarus, 1971; Neale, 1963; Peterson, 1964). A variation involving contingency contracting, substituting aversive (instead of nonreinforcing) contingencies for "accidents," was carried out with a seventeen-year-old girl (Edelman, 1971). If daily checks revealed that she had soiled during the day, she was confined to her room for thirty minutes (contingency contracting involving time-out). If there were no signs of soiling, she was excused from the evening dishwashing chores (contingency contracting involving negative reinforcement). After fourteen weeks of this regime, soiling was no longer a problem. A three-month, follow-up evaluation revealed no relapses.

Evaluation of Child-Behavior Therapy

We shall consider here the evaluation of child-behavior therapy as an issue separate from the references to the outcomes of treatment mentioned in the section on therapeutic procedures. If the frequency of achieving therapeutic goals in individual cases is taken as the criterion of effectiveness, child-behavior therapy, in its present stage of development, deserves a highly favorable rating. The same inference can probably be drawn on the basis of statistical findings, for it is likely that the number of unpublished negative outcomes is at least counterbalanced by the number of unpublished replications of positive outcomes. (It is well-known that editors are loathe to accept research reports that simply replicate findings.) This positive view of behavior therapy is not too surprising when one considers that the approach is anchored to empirical concepts and principles, and that the information derived from monitoring systems is used to correct technological inadequacies and deficiencies. But the true test of a therapeutic program is success in maintaining the desirable behavior. The usual way of evaluating the treatment effects of a brand of psychotherapy is to compare the number of "cures" it yields with the number of "cures" from an untreated control group and/or a group treated by another technique. When child-behavior therapy is evaluated by this type of experimental design, the findings have been inconclusive (Hewett, 1965; Ross, 1971) and the result attributable to deficiencies in the conduct of the research (Paul, 1969). Some studies are considered to have flaws in the way the groups were selected, others have

defined "cure" in an ambiguous manner, etc.

The need for a more adequate procedure is clearly indicated (Hartmann, 19672) not only because the traditional group-design evaluation approach is cumbersome but also because it fails to take into account the effect of the post-treatment environment. Such an omission in an evaluation procedure may be acceptable for assessing the treatment of phenomena occurring in a relatively constant environment such as the human body. For example, the outcome of the medical treatment of a disease is usually evaluated in the context of a fairly stable organismic environment—the physiological functioning of anatomical structures and body systems. Even so, social and physical components of the environment are almost always taken into account, for it is well-known that under certain conditions, they can alter the physiological functioning of an individual. Ulcer and heart patients are notable instances. A disregard of the post-treatment environment may also be acceptable for evaluating the treatment of disorders resulting from Pavlovian conditioning because the exact recurrence of the behavior and environmental conditions or events that generated the problem is highly improbable (for example, a traumatic fall from a dock and a consequent water phobia). However, omission of an assessment of the post-treatment environment in a follow-up study is definitely not acceptable for evaluating the treatment of disorders involving operant (or instrumental) conditioning because the outcome effects depend upon *both* the behavior at the end of treatment *and*

what happens (the sequence of response contingencies) in the post-treatment period. Available data suggest that if a child is returned to the environment that originally generated his problem behavior, without any change in that environment, his problem behavior soon reappears.106 Evaluation of therapy dealing primarily with operant behavior, therefore, should be a two-stage procedure: (1) a comparison of a child's behavior at the beginning (base-line behavior) and end (terminal behavior) of therapy, and (2) a follow-up check that compares the child's behavior at the end of treatment (terminal behavior) with his behavior at the time of the check—*in light of* the child's reinforcement history since treatment. Failure to separate these two kinds of evaluations may lead to erroneous impressions about the adequacy or inadequacy of a treatment program involving operant or instrumental behavior (Bijou, forthcoming).

The two-stage evaluation design emphasizes the need for using therapeutic procedures that enhance the maintenance of outcome effects, such as conducting the therapy in vivo and incorporating maintenance techniques in programs carried out in office-type clinical settings. With regard to the latter, it has been observed that the effects of treatment in clinics are often specific to the therapist (Redd, 1970; Redd, 1969) or to the therapeutic setting (Etzel, 1967; Wahler, 1969). The child may exhibit his newly acquired behavior when he is with the therapist and not in the presence of his parents, or in his classroom and not in his home. One way of

broadening or extending treatment effects is to have a succession of therapists, a procedure used by Reiss and Redd (1970) who reported that after a therapist had eliminated a nine-year-old girl's self-injurious behavior through time-out and positive reinforcement of incompatible behavior, a new therapist replaced him. At once, the girl resumed her self-injurious behavior and the new therapist reinstated the treatment contingencies used earlier. Upon successfully eliminating the self-injurious behavior, the second therapist was replaced by a third. Again the self-injurious behavior reappeared and again the therapist reinstated the treatment program with good results. A fourth and fifth therapist were introduced without any reappearances of the undesirable behavior. A similar technique used with retarded children (Barrett, 1973) indicated that children who had experience with a number of tutors performed more satisfactorily and showed less disruptive behavior in the classroom than children who had only one tutor.

Treatment effects can be extended beyond the confines of the clinical situation in another way: by including in the treatment program techniques of self-management, self-control, or self-regulation. Basically, the training consists of training a child in behavioral techniques that can help him modify his own behavior. Typically, he is instructed to pinpoint the problem, to set realistic goals, to provide himself with a variety of contingencies that are likely to establish and maintain the newly acquired behavior, and to monitor his own progress. Thus far these techniques have been used mainly with

preadolescents and adolescents. "The therapeutic methods of self-control have been used most frequently in attempts to reduce excessive eating, smoking, aggressive outbursts, or similar 'impulsive' behavior. However, application of self-reinforcement techniques for study habits, reduction of hyperactive behavior in children, increased social effectiveness, and reduction of masturbation and other sexual excesses have also been reported" (Kanfer, 1973, p. 25).

With respect to extending treatment effects by conducting therapy *in vivo,* a study by Wahler (1969) is pertinent. He treated two boys, five and eight years of age, who were disruptive and uncooperative at home and at school. His program consisting of differential application of time-out and positive social reinforcement was carried out only in the home. The results showed a dramatic improvement in the cooperative behavior of both boys at home, but not at school. Only after the same treatment was instituted in the school setting as well was there any change in the boys' school behavior. Similar results were obtained in a study in which a preschool child's generally aggressive behavior was reduced to a manageable level in the classroom, but not in the home until an intervention program that included the mother was carried out there (Zeilberger, 1968).

The two-stage evaluation procedure not only has implications for the development of therapeutic techniques but also for the method of assessing

the post-treatment environment. The literature shows that there is a diversity of tools used for assessment purposes: interviews, paper-and-pencil personality tests, self-concept measures, projective techniques, patient check lists and self-ratings, therapists' rating scales, factor-analytic batteries, mood scales, personal-orientation inventories, self-regulation measures, and peer-rating scales. These evaluative procedures may be carried out by a professional worker (e.g., therapist, teacher, or social worker) by the child himself, and by members of the child's family. None of these techniques are adequate for assessing the post-treatment environment because they do not describe the environment in terms of its functional meaning to the child. Describing the environment in functional terms, it will be recalled, is similar to but not quite the same as describing it phenomenologically, that is, in the way a child "perceives" or "sees" things (Liang, 1967). Knowing what the environment means to a child is essential in an approach that focuses on the functional or dynamic relationships between the behavior of a child and his environment, especially his social environment. Such information, which can be obtained only from observing the child in his home, school, and other settings, enables the evaluator to determine which conditions are supportive, neutral, or aversive for the child (Bijou. 1969). Research on development of assessment techniques of this sort is just getting under way (Robins, 1972).

Implications and Future Trends

The implications and future trends of child-behavior therapy are inextricably related. For that reason they are considered together.

With the continuation of basic behavioral research on both animals and children, and applied research on the treatment of children, the therapeutic techniques described here will inevitably undergo further refinements and extensions. This trend will lead not to a cookbook-type compilation of recipes, with problems indexed and standard treatment procedures set forth for each, but to a set of recommended procedures that can readily be altered to deal with the behavior of a particular child. Guidelines for modifying the recommended procedures (e.g., breaking down the program into smaller units, selecting more effective consequences, shifting from contingency application to contingency contracting, etc.) will, of course, be based primarily on the therapist's knowledge of applied behavior or learning principles.

Further improvement in therapeutic techniques is bound to affect the way in which initial assessment and monitoring procedures are conducted. It is likely that there will be progressively less dependence on standardized, norm-referenced, psychological tests in the initial assessment and progressively more dependence on informal, non-normative measures (interviews, behavior inventories, direct observation of behavior, etc.) because the latter relate directly to pinpointing the problem and to

identifying the environmental conditions that maintain it—essential information for planning an effective therapeutic program. Standardized tests will no doubt continue to serve the purposes for which they were intended; namely, selecting and classifying children for educational placement and making statistical predictions about their performance. The trend in monitoring assessment may well be in the direction of tracking multiple responses in order to keep abreast of some of the concomitant changes in nontreated behavior. For example, in monitoring a child's oppositional behavior to his mother, systematic measures might also be taken on his behavior toward his siblings. Such information would be helpful in planning the sequence of steps that constitute the complete therapeutic program.

Related to the changes in assessment procedures is the real possibility of a change in diagnostic categories. More and more child-behavior therapists are losing interest in conducting extensive evaluations to arrive at a formal diagnosis just for the "record." When they do resort to the use of traditional diagnostic terms, they do so as a means of communicating with others in a common, convenient shorthand. In the future, formal categories may well be replaced with precise behavioral descriptions of a child's problem and the environmental conditions supporting it.

Although often cumbersome, treatment *in vivo,* with a therapist as change agent or as consultant to a change agent, will probably be used with

increasing frequency for several reasons; (1) it drastically reduces the transfer or maintenance problem; (2) it helps those involved in treatment to become more effective in dealing with the child on other occasions and in dealing with other children; and (3) it is consistent with the *Zeitgeist* of the psychological community. Accompanying this trend will be the development of effective training programs and techniques for parents, siblings, professionals, and paraprofessionals —all those who will be involved in treatment. Training of such groups in behavior-modification workshops presently follow the same format as that frequently used with child-behavior therapists. Lectures and reading assignments have been replaced by demonstrations of the procedures and supervised practice sessions with a child. In such real therapeutic situations, the trainee's skills can be assessed more carefully and accurately, and, consequently, training can be more sensitively tailored to each individual's learning characteristics. In addition to teaching specific techniques, these programs provide the trainee with an understanding of the basic principles underlying the procedures so that he can apply them to new problems.

As the treatment of children's behavior problems in vivo becomes more common, there will be, in all probability, an increasing concern about maintaining therapeutic change. Therapists and change agents will be more involved in arranging conditions to continue the program after the desirable behavior is established or to apply similar procedures to other behavior of

the child. Thus, the teacher would have learned during training or consultation to persist in praising a child for his cooperative work long after his hostile-aggressive behaviors have been eliminated, and would recommend that other teachers do the same. Similarly, the mother would continue attending to her child's requests and ignoring his tantrum-like behavior.

Finally, the further development of child-behavior therapy should contribute to preventing the development of serious problems. This trend is expected to evolve from the fact that when parents, siblings, teachers, childcare workers, and others serve as change agents, they not only derive personal benefits but also acquire skills and knowledge that can be applied to other children. Thus, the teacher can apply behavior principles to manage her class to promote prosocial behavior, reduce aversive behavior, and encourage academic learning (Becker, 1971), and the parent can help her child or children acquire self-help skills and initial moral behavior in ways that are mutually satisfying.

Bibliography

Allen, K. E., B. M. Hart, J. S. Buell et al. "Effects of Social Reinforcement on Isolate Behavior of a Nursery School Child," *Child Dev.,* 35 (1964), 511-518.

Axline, V. M. *Play Therapy.* New York: Houghton Mifflin, 1947.

Azrin, N. H. and R. M. Foxx. "A Rapid Method of Training the Institutionalized Retarded," *J. Appl. Behav. Anal., 4* (1971), §9-99-

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

Bandura, A. and R. H. Walters. *Social Learning and Personality Development*. New York: Holt, Rinehart and Winston, 1965.

Barrett, B. H. and J. E. McCormack. "Varied-Teacher Tutorials: A Tactic for Generating Credible Skills in Severely Retarded People," *Ment. Retard.,* 11 (1973), 14-19.

Becker, W. C., S. Engleman, and D. R. Thomas. *Teaching: A Course in Applied Psychology*. Chicago: Science Research Associates, 1971.

Bensberg, G. J., C. N. Colwell, and R. H. Cassell. "Teaching the Profoundly Retarded Self-Help Activities by Behavior Shaping Techniques," *Am. J. Ment. Defic.,* 69 (1965), 674-679.

Berkowitz, S., P. J. Sherry, and B. A. Davis. "Teaching Self-Feeding Skills to Profound Retardates Using Reinforcement and Fading Procedures," *Behav. Ther.,* 2 (1971), 62-67.

Bijou, S. W. "Therapeutic Techniques with Children," in L. A. Pennington and I. A. Berg, eds., *An Introduction to Clinical Psychology,* 2nd ed., pp. 608-631. New York: Ronald, 1954.

Bijou, S. W. and D. M. Baer. *Child Development: A Systematic and Empirical Theory,* Vol. 1. New York: Appleton-Century-Crofts, 1961.

----. *Child Development: The Universal Stage of Infancy,* Vol. 2. New York: Appleton-Century-Crofts, 1965.

Bijou, S. W. and J. A. Grimm. "Behavioral Diagnosis and Assessment in Teaching Young Handicapped Children," in T. Thompson and W. S. Dockens, 3rd, eds., *Proceedings of the International Symposium on Behavior Modification.* New York: Academic, forthcoming.

Bijou, S. W. and R. F. Peterson. "The Psychological Assessment of Children: A Functional Analysis," in P. McReynolds, ed., *Advances in Psychological Assessment,* Vol. 2, pp. 63-78. Palo

Alto: Science and Behavior Books, 1971.

Bijou, S. W., R. F. Peterson, F. R. Harris et al. "Methodology for Experimental Studies of Young Children in Natural Settings," *Psychol. Rec.,* 19 (1969), 177-210.

Bijou, S. W. and H. N. Sloane. "Therapeutic Techniques with Children," in L. A. Pennington and I. A. Berg, eds., An *Introduction to Clinical Psychology,* 3rd ed., pp. 652-684. New York: Ronald, 1966.

Boring, E. G. *A History of Experimental Psychology.* New York: Appleton-Century-Crofts, 1929.

Bregman, E. O. "An Attempt to Modify the Emotional Attitudes of Infants by the Conditioned Response Technique," *J. Genet. Psychol.,* 45 (1934), 169-198.

Buell, J., P. Stoddard, R. Harris et al. "Collateral Social Development Accompanying Reinforcement of Outdoor Play in a Preschool Child," *J. Appl. Behav. Anal.,* 1 (1968), 167-173.

Burchard, J. D. "Systematic Socialization: A Programmed Environment for the Habilitation of Antisocial Retardates," *Psychol. Rec.,* 17 (1967), 461-467.

Burchard, J. D. and F. Barrera. "An Analysis of Time-out and Response Cost in a Programmed Environment," *J. Appl. Behav. Anal.,* 5 (1972), 271-282.

Doll, E. A. *The Measurement of Social Competence.* New York: Educational Publ., 1948.

Dollard, J. and N. E. Miller. *Personality and Psychotherapy.* New York: McGraw-Hill, 1950.

Doubros, S. G. and G. J. Daniels. "An Experimental Approach to the Reduction of Overactive Behavior," *Behav. Res. Ther*., 4 (1966), 251-258.

Dunlap, K. *Habits: Their Making and Unmaking.* New York: Liveright, 1932.

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

Ellis, N. R. "Toilet Training the Severely Defective Patient: An S-R Reinforcement Analysis," *Am. J.*

Ment. Defic., 68 (1963), 98-103.

English, H. B. "Three Cases of the 'Conditioned Fear Response'," *J Abnorm. Social Psychol.,* 24 (1929), 221-225.

Etzel, B. C. and J. L. Gewirtz. "Experimental Modification of Caretaker-Maintained High-Rate Operant Crying in a 6- and a 20-Week-Old Infant: Extinction of Crying with Reinforcement of Eye Contact and Smiling," *J. Exp. Child Psychol.,* 5 (1967). 303-317.

Eysenck, H. J. *Behavior Therapy and the Neuroses.* Oxford: Pergamon, 1960.

Ferster, C. B. and M. K. Demyer. "The Development of Performances in Autistic Children in an Automatically Controlled Environment," *J. Chronic Dis.,* 13 (1961), 312-345.

Fuller, P. R. "Operant Conditioning of a Vegetative Human Organism," *Am. J. Psychol.,* 62 (1949), 587-590.

Gelfand, D. M. and D. P. Hartmann. "Behavior Therapy With Children: A Review of Research Methodology," *Psychol. Bull.,* 69 (1968), 204-215.

Group for the Advancement of Psychiatry. *Psychopathological Disorders in Childhood: Theoretical Considerations and a Proposed Classification. New York: Group for the Advancement of Psychiatry.*

Harris, F. R., M. K. Johnston, C. S. Kelley et al. "Effects of Positive Social Reinforcement on Regressed Crawling of a Nursery School Child," *J. Educ. Psychol.,* 55 (1964), 35-41.

Hartmann, D. P. "Some Neglected Issues in Behavior Modification with Children." Paper presented at 6th Annu. Meet. Am. Assoc. Behav. Ther., New York, Oct., 1972.

Hawkins, R. P., R. F. Peterson, E. Schweid et al. "Behavior Therapy in the Home: Amelioration of Problem-Parent Child Relations with the Parent in a Therapeutic Role," *J. Exp. Child Psychol.,* 4 (1966), 99-107.

Hewett, F. M. "Teaching Speech to an Autistic Child through Conditioning," *Am. J. Orthopsychiatry,* 35 (1965), 927-936.

Holmes, F. B. "An Experimental Investigation of a Method of Overcoming Children's Fears," *Child Dev.,* 7 (1936), 6-30.

Homme, L., A. P. Csanyi, M. A. Gonzales et al. *How to Use Contingency Contracting in the Classroom.* Champaign, Ill.: Research Press, 1969.

Hull, C. L. *Principles of Behavior: An Introduction of Behavior Theory.* New York: Appleton-Century-Crofts, 1943.

Jones, H. E. "The Conditioning of Overt Emotional Responses," *J. Educ. Psychol.,* 22 (1931), 127-130.

Jones, M. C. "The Elimination of Children's Fears," *J. Exp. Psychol.,* 7 (1924), 382-390.

----. "A Laboratory Study of Fear: The Case of Peter," *Pedigog. Semin.,* 31 (1924), 315.

Kanfer, F. H. "Behavior Modification—An Overview," in C. E. Thoresen, ed., *Behavior Modification in Education,* pp. 3. The 72nd Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1973.

Kanfer, F. H. and J. S. Phillips. "A Survey of Current Behavior Therapies and a Proposed Classification," in C. M. Franks, ed., *Behavior Therapy: Appraisal and Status,* pp. 445-475. New York: McGraw-Hill, 1969.

----. *Learning Foundations of Behavior Therapy.* New York: Wiley, 1970.

Kanfer, F. H. and G. Saslow. "Behavioral Diagnosis," in C. M. Franks, ed., *Behavior Therapy: Appraisal and Status,* pp. 417-444. New York: McGraw-Hill, 1969.

Kanner, L. *Child Psychiatry*, 2nd ed. Springfield, Ill.: Charles C. Thomas, 1948.

Keehn, J. D. "Brief Case-Report: Reinforcement Therapy of Incontinence," *Behav. Res. Ther.,* 2 (1965), 239.

Kimmel, H. D. and E. Kimmel. "An Instrumental Conditioning Method for the Treatment of Enuresis," *J. Behav. Ther. Exp. Psychiatry,* 1 (1970), 121-124.

Kirby, F. D. and H. C. Toler. "Modification of Preschool Isolate Behavior: A Case Study," *J. Appl. Behav. Anal.,* 3 (1970), 314.

Kuhn, T. S. *The Structure of Scientific Revolutions.* Chicago: University of Chicago Press, 1962.

Laing, R. D. *The Politics of Experience.* New York: Ballantine, 1967.

Lazarus, A. A. "The Elimination of Children's Phobias by Deconditioning," *Med. Proc.* (S. Africa), 5 (1959), 261-265.

----. *Behavior Therapy and Beyond.* New York: McGraw-Hill, 1971.

Lazarus, A. A. and A. Abramovitz. "The Use of 'Emotive Imagery' in the Treatment of Children's Phobias," *J. Ment. Sci.,* 108 (1962), 191-195.

Lazarus, A. A., G. C. Davison and D. A. Polefka. "Classical and Operant Factors in the Treatment of a School Phobia," *J. Abnorm. Psychol.,* 70 (1965), 225-229.

Leventhal, T., G. Weinberger, R. J. Stander et al. "Therapeutic Strategies with School Phobics," *Am. J. Orthopsychiatry,* 37 (1967), 64-70.

Lindsley, O. R. "Operant Conditioning Methods Applied to Research in Chronic Schizophrenia," *Psychiatr. Res. Rep.,* 5 (1956), 118-139.

Lorr, M., C. J. Klett, and D. M. McNair. *Syndromes of Psychosis.* New York: Macmillan, 1963.

Lovaas, O. I., J. P. Berkerich, B. F. Perloff et al. "Acquisition of Imitative Speech by Schizophrenic Children," Science, 151 (1966), 705-706.

Lovaas, O. I., L. Fritas, K. Nelson et al. "The Establishment of Imitation and Its Use for the Development of Complex Behavior in Schizophrenic Children," *Behav. Res. Ther.,* 5 (1967), 171-181.

Lovaas, O. I., B. Schaeffer, and J. Q. Simmons. "Building Social Behavior in Autistic Children by Use of Electric Shock," *J. Exp. Res. Pers.,* 2 (1965), 99-109.

Lovaas, O. I. and J. Q. Simmons. "Manipulation of Self-Destruction in Three Retarded Children," *J. Appl. Behav. Anal.,* 2 (1969), 143-157.

McCollom, I. N. "Psychological Classics: Older Journal Articles frequently Cited Today," *Am. Psychol.,* 28 (1973), 363-365.

McConnel, O. L. "Control of Eye Contact in an Autistic Child," *J. Child Psychol. Psychiatry,* 8 (1967), 249-255.

Moore, W. E. "A Conditioned Reflex Study of Stuttering," *J. Speech Disord.,* 3 (1938), 163-183.

Morgan, J. J. B. and F. J. Witmer. "The Treatment of Enuresis by the Conditioned Reaction Technique," *J. Genet. Psychol.,* 55 (1939), 59-65.

Mowrer, O. H. and W. M. Mowrer. "Enuresis: A Method for Its Study and Treatment," *Am. J. Orthopsychiatry,* 8 (19.38), 436-459-

Neale, P. H. "Behavior Therapy and Encopresis in Children," *Behav. Res. Ther.,* 1 (196.3), 1.39-149.

Paschalis, A. P., H. D. Kimmel, and E. Kimmel. "Further Study of Diurnal Instrumental Conditioning in the Treatment of Enuresis Nocturna," *J. Behav. Ther. Exp. Psychiatry,* 3 (1972), 253-256.

Patterson, G. R. "A Learning Theory Approach to the Treatment of the School Phobic Child," in L. Ullman and L. Krasner, eds., *Case Studies in Behavior Modification,* pp. 279-284. New York: Holt, Rinehart & Winston, 1965.

Paul, G. L. "Behavior Modification Research: Design and Tactics," in C. M. Franks, ed., *Behavior Therapy: Appraisal and Status,* pp. 29-62. New York: McGraw-Hill, 1969.

Pavlov, I. P. *Conditioned Reflexes.* London: Oxford University Press, 1927.

----. "Neurosis in Man and Animals," *JAMA,* 99 (1932), 1012-1013.

Peterson, D. R. and P. London. "Neo-behavioristic Psychotherapy; Quasi Hypnotic Suggestion and Multiple Reinforcement in the Treatment of a Case of Post-infantile Dyscopresis,"

Psychol. Rec., 14 (1964), 469-474.

Quay, H. C. "Patterns of Aggression, Withdrawal, and Immaturity," in H. C. Quay and J. S. Werry, eds., *Psychopathological Disorders of Childhood,* pp. 1-29. New York: Wiley, 1972.

Redd, W. H. "Generalization of Adults' Stimulus Control of Children's Behavior," *J. Exp. Child Psychol.,* 9 (1970), 286-296.

Redd, W. H. and J. S. Birnbrauer. "Adults as Discriminative Stimulative for Different Reinforcement Contingencies with Retarded Children," *J. Exp. Psychol.,* 7 (1969), 440-447.

Reese, H. W. and L. P. Lipsitt. *Experimental Child Psychology.* New York: Academic, 1970.

Reiss, S. and W. H. Redd. "Suppression of Screaming Behavior in an Emotionally Disturbed, Retarded Child," Paper Presented at the Am. Psychol. Conv., Miami, 1970.

Risley, T. R. "The Effects and Side Effects of Punishing the Autistic Behaviors of a Deviant Child," *J. Appl. Behav. Anal.,* 1 (1968), 21-34.

Risley, T. and M. Wolf. "Establishing Functional Speech in Echolalic Children," *Behav. Res. Ther.,* 5 (1967), 73-88.

Robins, L. M. "Follow-up Studies of Behavior Disorders in Children," in H. C. Quay and J. S. Werry, eds., *Psychopathological Disorders of Childhood,* pp. 414-450. New York: Wiley, 1972.

Rosenhan, D. L. "On Being Sane in Insane Places," *Science,* 179 (1973), 250-258.

Ross, A. O. *Behavior Disorders in Children.* New York: General Learning, 1971.

----. "Behavior Therapy," in H. C. Quay and J. S. Werry, eds., *Psychopathological Disorders in Childhood,* pp. 273-315. New York: Wiley, 1972.

Ross, D. M., S. A. Ross, and T. Evans. "The Modification of Extreme Social Withdrawal by Modeling and Guided Participation," *J. Behav. Ther. Exp. Psychiatry,* 2 (1971), 273-279.

Sears, R. R. "Child Psychology," in W. Dennis, ed., *Current Trends in Psychology,* pp. 50-74. Pittsburgh: University of Pittsburgh Press, 1947.

Sears, R. R., E. E. Maccoby, and H. Levin: *Patterns of Child Rearing.* Evanston, Ill.: Row Peterson, 1957.

Sherman, J. A. and D. M. Baer. "Appraisal of Operant Therapy Techniques with Children and Adults," in C. M. Franks, ed., *Behavior Therapy: Appraisal and Status,* pp. 192-219. New York: McGraw-Hill, 1969.

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

----. *Science and Human Behavior.* New York: Macmillan, 195,3.

----. *Contingencies of Reinforcement: A Theoretical Analysis.* New York: Appleton-Century-Crofts, 1969.

Sloane, H. N., M. K. Johnston, and S. W. Bijou. "Successive Modification of Aggressive Behavior and Aggressive Fantasy Play by Management of Contingencies," *J. Child Psychol. Psychiatry,* 8 (1967), 217-226.

Straughan, J. H. "Treatment with Child and Mother in the Playroom," *Behav. Res. Ther.,* 2 (1964), 37-41.

Strupp, H. H. and A. E. Bergin. "Some Empirical and Conceptual Bases for Coordinated Research in Psychotherapy: A Critical Review of Issues, Trends, and Evidence," *Int. J. Psychiatry,* 7 (1969), 18-90.

Szasz, T. S. "The Myth of Mental Illness," *Am. Psychol.,* 15 (1960), 113-118.

Tate, B. F. and G. S. Baroff. "Aversive Control of Self-Injurious Behavior in a Psychotic Boy," *Behav. Res. Ther.,* 4 (1966), 281-287.

Thorndike, E. L. *The Fundamentals of Learning.* New York: Teachers College, Columbia University, 1932.

Vueklich, R. and D. F. Hake. "Reduction of Dangerously Aggressive Behavior in a Severely Retarded Resident through a Combination of Positive Reinforcement Procedures," *J. Appl. Behav. Anal.,* 4 (1971), 215-225.

Wahler, R. G. "Setting Generality: Some Specific and General Effects of Child Behavior Therapy," *J. Appl. Behav. Anal.,* 2 (1969). 239-246.

----. "Oppositional Children: A Quest for Parental Reinforcement Control," *J. Appl. Behav. Anal.,* 2 (1969), 159-170.

Wahler, R. G. and W. H. Cormier. "The Ecological Interview: A First Step in Out-Patient Child Behavior Therapy," *J. Behav. Ther. Exp. Psychiatry,* 1 (1970), 279-289.

Walker, H. M. and N. K. Buckley. "Programming Generalization and Maintenance Treatment Effects Across Time and Across Settings," *J. Appl. Behav. Anal.,* 5 (1972), 209-224.

Warren, A. B. and R. H. Brown. "Conditioned Operant Response Phenomena in Children," *J. Gen. Psychol.,* 28 (1943), 181-207.

Watson, J. B. *Behavior: An Introduction to Comparative Psychology*. New York: Holt, 1914.

----. *Behaviorism,* rev. ed. Chicago: University of Chicago Press, 1930.

Watson, J. B. and R. A. Rayner. "Conditioned Emotional Reactions," *J. Exp. Psychol.,* 3 (1920), 1-4.

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

Wolf, M. M., E. L. Phillips, and D. L. Fixen. "The Teaching Family: A New Model for the Treatment of Deviant Child Behavior in the Community," in S. W. Bijou and E. Ribes-Inesta, eds., *Behavior Modification: Issues and Extensions,* pp. 51-62. New York: Academic, 1972.

Wolf, M. N., T. Risley, and H. Mees. "Application of Operant Conditioning Procedures to the Behavior Problems of an Autistic Child," *Behav. Res. Ther.,* 1 (1964), 305-312.

Wolpe, J. *Psychotherapy by Reciprocal Inhibition.* Stanford: Stanford University Press, 1958.

----. *The Practice of Behavior Therapy.* New York: Pergamon, 1969.

Yarrow, M. R., J. D. Campbell, and R. V. Burton. *Child Rearing.* San Francisco: Jossey-Bass, 1968.

Yates, A. J. *Behavior Therapy.* New York: Wiley, 1970.

Zeilberger, J., S. E. Sampen, and H. N. Sloane, Jr. "Modification of a Child's Problem Behaviors in the Home with the Mother as Therapist," *J. Appl. Behav. Anal.,* 1 (1968), 47-53.

Zigler, E. and L. Phillips. "Psychiatric Diagnosis: A Critique," *J. Abnorm. Psychol.,* 63 (1961), 607-618.

Zubin, J. "Classification of the Behavior *Disorders," Annu. Rev. Psychol.,* 18 (1967), 373-406.