Behavioral Analysis

An Alternative to Diagnostic Classification

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During the past decade attacks on conventional psychiatric diagnosis have been so widespread that many clinicians now use diagnostic labels sparingly and apologetically. The continued adherence to the nosological terms of the traditional classificatory scheme suggests some utility of the present categorization of behavior disorders, despite its apparently low reliability; its limited prognostic value; and its multiple feebly related assumptive supports. In a recent study of this problem, the symptom patterns of carefully diagnosed paranoid schizophrenics were compared. Katz et al.12 found considerable divergence among patients with the same diagnosis and concluded that "diagnostic systems which are more circumscribed in their intent, for example, based on manifest behavior alone, rather than systems which attempt to comprehend etiology, symptom patterns and prognosis, may be more directly applicable to current problems in psychiatric research" (p 202).

We propose here to examine some sources of dissatisfaction with the present approach to diagnosis, to describe a framework for a behavioral analysis of individual patients which implies both suggestions for treatment and outcome criteria for the single case, and to indicate the conditions for collecting the data for such an analysis.

I. Problems in Current Diagnostic Systems

Numerous criticisms deal with the internal consistency, the explicitness, the precision, and the reliability of psychiatric classifications. It seems to us that the more important fault lies in our lack of sufficient knowledge to categorize behavior along those pertinent dimensions which permit prediction of responses to social stresses, life crises, or psychiatric treatment. This limitation obviates anything but a crude and tentative approximation to a taxonomy of effective individual behaviors.

Zigler and Phillips,28 in discussing the requirement for an adequate system of classification, suggest that an etiologically-oriented closed system of diagnosis is premature. Instead, they believe that an empirical attack is needed, using "symptoms broadly defined as meaningful and discernible behaviors, as the basis of the classificatory system" (p 616). But symptoms as a class of responses are defined after all only by their nuisance value to the patient's social environment or to himself as a social being. They are also notoriously unreliable in predicting the patient's particular etiological history or his response to treatment. An alternate approach lies in an attempt to identify classes of dependent variables in human behavior which would allow inferences about the particular controlling factors, the social stimuli, the physiological stimuli, and the reinforcing stimuli, of which they are a function. In the present early stage of the art of psychological prognostication, it appears most reasonable to develop a program of analysis which is closely related to subsequent treatment. A classification scheme which implies a program for behavioral change is one which has not only utility but the potential for experimental validation.

The task of assessment and prognosis can therefore be reduced to efforts which answer the following three questions: (a) which specific behavior patterns require change in their frequency of occurrence, their intensity, their duration or in the conditions under which they occur, (b) what are the best practical means which can produce the desired changes in this individual (manipulation of the environment, of the behavior, or the self-attitudes of the patient), and

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(c) what factors are currently maintaining it and what are the conditions under which this behavior was acquired. The investigation of the history of the problematic behavior is mainly of academic interest, except as it contributes information about the probable efficacy of a specific treatment method.

**Expectations of Current Diagnostic Systems.**—In traditional medicine, a diagnostic statement about a patient has often been viewed as an essential prerequisite to treatment because a diagnosis suggests that the physician has some knowledge of the origin and future course of the illness. Further, in medicine diagnosis frequently brings together the accumulated knowledge about the pathological process which leads to the manifestation of the symptoms, and the experiences which others have had in the past in treating patients with such a disease process. Modern medicine recognizes that any particular disease need not have a single cause or even a small number of antecedent conditions. Nevertheless, the diagnostic label attempts to define at least the necessary conditions which are most relevant in considering a treatment program. Some diagnostic classification system is also invaluable as a basis for many social decisions involving entire populations. For example, planning for treatment facilities, research efforts and educational programs take into account the distribution frequencies of specified syndromes in the general population.

Ledley and Lusted 14 give an excellent conception of the traditional model in medicine by their analysis of the reasoning underlying it. The authors differentiate between a disease complex and a symptom complex. While the former describes known pathological processes and their correlated signs, the latter represents particular signs present in a particular patient. The bridge between disease and symptom complexes is provided by available medical knowledge and the final diagnosis is tantamount to labeling the disease complex. However, the current gaps in medical knowledge necessitate the use of probability statements when relating disease to symptoms, admitting that there is some possibility for error in the diagnosis. Once the diagnosis is established, decisions about treatment still depend on many other factors including social, moral, and economic conditions. Ledley and Lusted 14 thus separate the clinical diagnosis into a two-step process. A statistical procedure is suggested to facilitate the primary or diagnostic labeling process. However, the choice of treatment depends not only on the diagnosis proper. Treatment decisions are also influenced by the moral, ethical, social, and economic conditions of the individual patient, his family and the society in which he lives. The proper assignment of the weight to be given to each of these values must in the last analysis be left to the physician’s judgment (Ledley and Lusted 14).

The Ledley and Lusted model presumes available methods for the observation of relevant behavior (the symptom complex), and some scientific knowledge relating it to known antecedents or correlates (the disease process). Contemporary theories of behavior pathology do not yet provide adequate guidelines for the observer to suggest what is to be observed. In fact, Szasz 25 has expressed the view that the medical model may be totally inadequate because psychiatry should be concerned with problems of living and not with diseases of the brain or other biological organs. Szasz 25 argues that “mental illness is a myth, whose function it is to disguise and thus render more potable the bitter pill of moral conflict in human relations” (p 118).

The attack against use of the medical model in psychiatry comes from many quarters. Schefflen 23 describes a model of somatic psychiatry which is very similar to the traditional medical model of disease. A pathological process results in onset of an illness; the symptoms are correlated with a pathological state and represent our evidence of “mental disease.” Treatment consists of removal of the pathogen, and the state of health is restored. Schefflen suggests that this traditional medical model is used in psychiatry not on the basis of its adequacy but because of its emotional appeal.

The limitations of the somatic model have been discussed even in some areas of medicine for which the model seems most appropriate. For example, in the nomenclature for diagnosis of disease of the heart and blood vessels, the criteria committee of the New York Heart Association 17 suggests the use of multiple criteria for cardiovascular diseases, including a statement of the patient's functional capacity. The committee suggests that the functional capacity be “...estimated by appraising the patient’s ability to perform physical activity” (p 80), and decided
largely by inference from his history. Further,27 "... (it) should not be influenced by the character of the structural lesion or by an opinion as to treatment or prognosis" (p 81). This approach makes it clear that a comprehensive assessment of a patient, regardless of the physical disease which he suffers, must also take into account his social effectiveness and the particular ways in which physiological, anatomical, and psychological factors interact to produce a particular behavior pattern in an individual patient.

Multiple Diagnosis.—A widely used practical solution and circumvention of the difficulty inherent in the application of the medical model to psychiatric diagnosis is offered by Noyes and Kolb.18 They suggest that the clinician construct a diagnostic formulation consisting of three parts: (1) A genetic diagnosis incorporating the constitutional, somatic, and historical-traumatic factors representing the primary sources or determinants of the mental illness; (2) A dynamic diagnosis which describes the mechanisms and techniques unconsciously used by the individual to manage anxiety, enhance self-esteem, etc., that trace the psychopathological processes; and (3) A clinical diagnosis which conveys useful connotations concerning the reaction syndrome, the probable course of the disorder, and the methods of treatment which will most probably prove beneficial. Noyes' and Kolb's multiple criteria 18 can be arranged along three simpler dimensions of diagnosis which may have some practical value to the clinician: (1) etiological, (2) behavioral, and (3) predictive. The kind of information which is conveyed by each type of diagnostic label is somewhat different and specifically adapted to the purpose for which the diagnosis is used. The triple-label approach attempts to counter the criticism aimed at use of any single classificatory system. Confusion in a single system is due in part to the fact that a diagnostic formulation intended to describe current behavior, for example, may be found useless in an attempt to predict the response to specific treatment, or to postdict the patient's personal history and development, or to permit collection of frequency data on hospital populations.

Classification by Etiology.—The Kraepelinian system and portions of the 1952 APA classification emphasize etiological factors. They share the assumption that common etiological factors lead to similar symptoms and respond to similar treatment. This dimension of diagnosis is considerably more fruitful when dealing with behavior disorders which are mainly under control of some biological condition. When a patient is known to suffer from excessive intake of alcohol his hallucinatory behavior, lack of motor coordination, poor judgment, and other behavioral evidence disorganization can often be related directly to some antecedent condition such as the toxic effect of alcohol on the central nervous system, liver, etc. For these cases, classification by etiology also has some implications for prognosis and treatment. Acute hallucinations and other disorganized behavior due to alcohol usually clear up when the alcohol level in the blood stream falls. Similar examples can be drawn from any class of behavior disorders in which a change in behavior is associated primarily or exclusively with a single, particular antecedent factor. Under these conditions this factor can be called a pathogen and the situation closely approximates the condition described by the traditional medical model.

Utilization of this dimension as a basis for psychiatric diagnosis, however, has many problems apart from the rarity with which a specified condition can be shown to have a direct "causal" relationship to a pathogen. Among the current areas of ignorance in the fields of psychology and psychiatry, the etiology of most common disturbances probably takes first place. No specific family environment, no dramatic traumatic experience, or known constitutional abnormality has yet been found which results in the same pattern of disordered behavior. While current research efforts have aimed at investigating family patterns of schizophrenic patients, and several studies suggest a relationship between the mother's behavior and a schizophrenic process in the child,19 it is not at all clear why the presence of these same factors in other families fails to yield a similar incidence of schizophrenia. Further, patients may exhibit behavior diagnosed as schizophrenic when there is no evidence of the postulated mother-child relationship.

In a recent paper Meehl 16 postulates schizophrenia as a neurological disease, with learned content and a dispositional basis. With this array of interactive etiological factors, it is clear that the etiological dimension for classification would
at best result in an extremely cumbersome system, at worst in a useless one.

Classification by Symptoms.—A clinical diagnosis often is a summarizing statement about the way in which a person behaves. On the assumption that a variety of behaviors are correlated and consistent in any given individual, it becomes more economical to assign the individual to a class of persons than to list and categorize all of his behaviors. The utility of such a system rests heavily on the availability of empirical evidence concerning correlations among various behaviors (response-response relationships), and the further assumption that the frequency of occurrence of such behaviors is relatively independent of specific stimulus conditions and of specific reinforcement. There are two major limitations to such a system. The first is that diagnosis by symptoms, as we have indicated in an earlier section, is often misleading because it implies common etiological factors. Freedman\(^7\) gives an excellent illustration of the differences both in probable antecedent factors and subsequent treatment response among three cases diagnosed as schizophrenics. Freedman’s patients were diagnosed by at least two psychiatrists, and one would expect that the traditional approach would result in whatever treatment of schizophrenia is practiced in the locale where the patients are seen. The first patient eventually gave increasing evidence of an endocrinopathy, and when this was recognized and treated, the psychotic symptoms went into remission. The second case had a definite history of seizures and appropriate anticonvulsant medication was effective in relieving his symptoms. In the third case, treatment directed at an uncovering analysis of the patient’s adaptive techniques resulted in considerable improvement in the patient’s behavior and subsequent relief from psychotic episodes. Freedman\(^7\) suggests that schizophrenia is not a disease entity in the sense that it has a unique etiology, pathogenesis, etc., but that it represents the evocation of a final common pathway in the same sense as do headache, epilepsy, sore throat, or indeed any other symptom complex. It is further suggested that the term “schizophrenia has outlived its usefulness and should be discarded” (p 5). Opler\(^10,50\) has further shown the importance of cultural factors in the divergence of symptoms observed in patients collectively labeled as schizophrenic.

Descriptive classification is not always this deceptive, however. Assessment of intellectual performance sometimes results in a diagnostic statement which has predictive value for the patient’s behavior in school or on a job. To date, there seem to be very few general statements about individual characteristics, which have as much predictive utility as the IQ.

A second limitation is that the current approach to diagnosis by symptoms tends to center on a group of behaviors which is often irrelevant with regard to the patient’s total life pattern. These behaviors may be of interest only because they are popularly associated with deviancy and disorder. For example, occasional mild delusions interfere little or not at all with the social or occupational effectiveness of many ambulatory patients. Nevertheless, admission of their occurrence is often sufficient for a diagnosis of psychosis. Refinement of such an approach beyond current usage appears possible, as shown for example by Lorr et al\(^15\) but this does not remove the above limitations.

Utilization of a symptom-descriptive approach frequently focuses attention on by-products of larger behavior patterns, and results in attempted treatment of behaviors (symptoms) which may be simple consequences of other important aspects of the patient’s life. Emphasis on the patient’s subjective complaints, moods and feelings tends to encourage use of a syndrome-oriented classification. It also results frequently in efforts to change the feelings, anxieties, and moods (or at least the patient’s report about them), rather than to investigate the life conditions, interpersonal reactions, and environmental factors which produce and maintain these habitual response patterns.

Classification by Prognosis.—To date, the least effort has been devoted to construction of a classification system which assigns patients to the same category on the basis of their similar response to specific treatments. The proper question raised for such a classification system consists of the manner in which a patient will react to treatments, regardless of his current behavior, or his past history. The numerous studies attempting to establish prognostic signs from projective personality tests or somatic tests represent efforts to categorize the patients on this dimension.
Windle has called attention to the low degree of predictability afforded by personality (projective) test scores, and has pointed out the difficulties encountered in evaluating research in this area due to the inadequate description of the population sampled and of the improvement criteria. In a later review Fulkerson and Barry came to the similar conclusion that psychological test performance is a poor predictor of outcome in mental illness. They suggest that demographic variables such as severity, duration, acuteness of onset, degree of precipitating stress, etc, appear to have stronger relationships to outcome than test data. The lack of reliable relationships between diagnostic categories, test data, demographic variables, or other measures taken on the patient on the one hand, and duration of illness, response to specific treatment, or degree of recovery, on the other hand, precludes the construction of a simple empiric framework for a diagnostic-prognostic classification system based only on an array of symptoms.

None of the currently used dimensions for diagnosis is directly related to methods of modification of a patient’s behavior, attitudes, response patterns, and interpersonal actions. Since the etiological model clearly stresses causative factors, it is much more compatible with a personality theory which strongly emphasizes genetic-developmental factors. The classification by symptoms facilitates social-administrative decisions about patients by providing some basis for judging the degree of deviation from social and ethical norms. Such a classification is compatible with a personality theory founded on the normal curve hypothesis and concerned with characterization by comparison with a fictitious average. The prognostic-predictive approach appears to have the most direct practical applicability. If continued research were to support certain early findings, it would be indeed comforting to be able to predict outcome of mental illness from a patient’s premorbid social competence score, or from the patient’s score on an ego-strength scale, or from many of the other signs and single variables which have been shown to have some predictive powers. It is unfortunate that these powers are frequently dissipated in cross validation. As Fulkerson and Barry have indicated, single predictors have not yet shown much success.

II. A Functional (Behavioral-Analytic) Approach

The growing literature on behavior modification procedures derived from learning theory suggests that an effective diagnostic procedure would be one in which the eventual therapeutic methods can be directly related to the information obtained from a continuing assessment of the patient’s current behaviors and their controlling stimuli. Ferster has said “... a functional analysis of behavior has the advantage that it specifies the causes of behavior in the form of explicit environmental events which can be objectively identified and which are potentially manipulable” (p 3). Such a diagnostic undertaking makes the assumption that a description of the problematic behavior, its controlling factors, and the means by which it can be changed are the most appropriate “explanations.” It further makes the assumption that a diagnostic evaluation is never complete. It implies that additional information about the circumstances of the patient’s life pattern, relationships among his behaviors, and controlling stimuli in his social milieu and his private experience is obtained continuously until it proves sufficient to effect a noticeable change in the patient’s behavior, thus resolving “the problem.” In a functional approach it is necessary to continue evaluation of the patient’s life pattern and its controlling factors, concurrent with attempted manipulation of these variables by reinforcement, direct intervention, or other means until the resultant change in the patient’s behavior permits restoration of more efficient life experiences.

The present approach shares with some psychological theories the assumption that psychotherapy is not an effort aimed at removal of intrapsychic conflicts, nor at a change in the personality structure by therapeutic interactions of intense nonverbal nature, (eg, transference, self-actualization, etc). We adopt the assumption instead that the job of psychological treatment involves the utilization of a variety of methods to devise a program which controls the patient’s environment, his behavior, and the consequences of his behavior in such a way that the presenting problem is resolved. We hypothesize that the essential ingredients of a psychotherapeutic endeavor usually involve two separate stages: (1) a change in the perceptual...
discriminations of a patient, ie, in his approach to perceiving, classifying, and organizing sensory events, including perception of himself, and (2) changes in the response patterns which he has established in relation to social objects and to himself over the years. In addition, the clinician’s task may involve direct intervention in the patient's environmental circumstances, modification of the behavior of other people significant in his life, and control of reinforcing stimuli which are available either through self-administration, or by contingency upon the behavior of others. These latter procedures complement the verbal interactions of traditional psychotherapy. They require that the clinician, at the invitation of the patient or his family, participate more fully in planning the total life pattern of the patient outside the clinician’s office.

It is necessary to indicate what the theoretical view here presented does not espouse in order to understand the differences from other procedures. It does not rest upon the assumption that (a) insight is a sine qua non of psychotherapy, (b) changes in thoughts or ideas inevitably lead to ultimate changes in actions, (c) verbal therapeutic sessions serve as replications of and equivalents for actual life situations, and (d) a symptom can be removed only by uprooting its cause or origin. In the absence of these assumptions it becomes unnecessary to conceptualize behavior disorder in etiological terms, in psychodynamic terms, or in terms of a specific disease process. While psychotherapy by verbal means may be sufficient in some instances, the combination of behavior modification in life situations as well as in verbal interactions serves to extend the armamentarium of the therapist. Therefore verbal psychotherapy is seen as an adjunct in the implementation of therapeutic behavior changes in the patient’s total life pattern, not as an end in itself, nor as the sole vehicle for increasing psychological effectiveness.

In embracing this view of behavior modification, there is a further commitment to a constant interplay between assessment and therapeutic strategies. An initial diagnostic formulation seeks to ascertain the major variables which can be directly controlled or modified during treatment. During successive treatment stages additional information is collected about the patient’s behavior repertoire, his reinforcement history, the pertinent controlling stimuli in his social and physical environment, and the sociological limitations within which both patient and therapist have to operate. Therefore, the initial formulation will constantly be enlarged or changed, resulting either in confirmation of the previous therapeutic strategy or in its change.

A Guide to a Functional Analysis of Individual Behavior.—In order to help the clinician in the collection and organization of information for a behavioral analysis, we have constructed an outline which aims to provide a working model of the patient’s behavior at a relatively low level of abstraction. A series of questions are so organized as to yield immediate implications for treatment. This outline has been found useful both in clinical practice and in teaching. Following is a brief summary of the categories in the outline.*

1. Analysis of a Problem Situation: † The patient’s major complaints are categorized into classes of behavioral excesses and deficits. For each excess or deficit the dimensions of frequency, intensity, duration, appropriateness of form, and stimulus conditions are described. In content, the response classes represent the major targets of the therapeutic intervention. As an additional indispensable feature, the behavioral assets of the patient are listed for utilization in a therapy program.

2. Clarification of the Problem Situation: Here we consider the people and circumstances which tend to maintain the problem behaviors, and the consequences of these behaviors to the patient and to others in his environment. Attention is given also to the consequences of changes in these behaviors which may result from psychiatric intervention.

3. Motivational Analysis: Since reinforcing stimuli are idiosyncratic and depend for their effect on a number of unique parameters for each person, a hierarchy of particular persons, events, and objects which serve

* A limited supply of the full outline is available and copies can be obtained upon request from us.
† For each patient a detailed analysis is required. For example, a list of behavioral excesses may include specific aggressive acts, hallucinatory behaviors, crying, submission to others in social situations, etc. It is recognized that some behaviors can be viewed as excesses or deficits depending on the vantage point from which the imbalance is observed. For instance, excessive withdrawal and deficient social responsiveness, or excessive social autonomy (nonconformity) and deficient self-inhibitory behavior may be complementary. The particular view taken is of consequence because of its impact on a treatment plan. Regarding certain behavior as excessively aggressive, to be reduced by constraints, clearly differs from regarding the same behavior as a deficit in self-control, subject to increase by training and treatment.
as reinforcers is established for each patient. Included in this hierarchy are those reinforcing events which facilitate approach behaviors as well as those which, because of their aversiveness, prompt avoidance responses. This information has as its purpose to lay plans for utilization of various reinforcers in prescription of a specific behavior therapy program for the patient, and to permit utilization of appropriate reinforcing behaviors by the therapist and significant others in the patient's social environment.

4. Developmental Analysis: Questions are asked about the patient's biological equipment, his sociocultural experiences, and his characteristic behavioral development. They are phrased in such a way as (a) to evoke descriptions of his habitual behavior at various chronological stages of his life, (b) to relate specific new stimulus conditions to noticeable changes from his habitual behavior, and (c) to relate such altered behavior and other residuals of biological and sociocultural events to the present problem.

5. Analysis of Self-Control: This section examines both the methods and the degree of self-control exercised by the patient in his daily life. Persons, events, or institutions which have successfully reinforced self-controlling behaviors are considered. The deficits or excesses of self-control are evaluated in relation to their importance as therapeutic targets and to their utilization in a therapeutic program.

6. Analysis of Social Relationships: Examination of the patient's social network is carried out to evaluate the significance of people in the patient's environment who have some influence over the problematic behaviors, or who in turn are influenced by the patient for his own satisfactions. These interpersonal relationships are reviewed in order to plan the potential participation of significant others in a treatment program, based on the principles of behavior modification. The review also helps the therapist to consider the range of actual social relationships in which the patient needs to function.

7. Analysis of the Social-Cultural-Physical Environment: In this section we add to the preceding analysis of the patient's behavior as an individual, consideration of the norms in his natural environment. Agreements and discrepancies between the patient's idiosyncratic life patterns and the norms in his environment are defined so that the importance of these factors can be decided in formulating treatment goals which allow as explicitly for the patient's needs as for the pressures of his social environment.

The preceding outline has as its purpose to achieve definition of a patient's problem in a manner which suggests specific treatment operations, or that none are feasible, and specific behaviors as targets for modification. Therefore, the formulation is action oriented. It can be used as a guide for the initial collection of information, as a device for organizing available data, or as a design for treatment.

The formulation of a treatment plan follows from this type of analysis because knowledge of the reinforcing conditions suggests the motivational controls at the disposal of the clinician for the modification of the patient's behavior. The analysis of specific problem behaviors also provides a series of goals for psychotherapy or other treatment, and for the evaluation of treatment progress. Knowledge of the patient's biological, social, and cultural conditions should help to determine what resources can be used, and what limitations must be considered in a treatment plan.

The various categories attempt to call attention to important variables affecting the patient's current behavior. Therefore, they aim to elicit descriptions of low-level abstraction. Answers to these specific questions are best phrased by describing classes of events reported by the patient, observed by others, or by critical incidents described by an informant. The analysis does not exclude description of the patient's habitual verbal-symbolic behaviors. However, in using verbal behaviors as the basis for this analysis, one should be cautious not to "explain" verbal processes in terms of postulated internal mechanisms without adequate supportive evidence, nor should inference be made about nonobserved processes or events without corroborative evidence. The analysis includes many items which are not known or not applicable for a given patient. Lack of information on some items does not necessarily indicate incompleteness of the analysis. These lacks must be noted nevertheless because they often contribute to the better understanding of what the patient needs to learn to become an autonomous person. Just as important is an inventory of his existing socially effective behavioral repertoire which can be put in the service of any treatment procedure.

This analysis is consistent with our earlier formulations of the principles of comprehensive medicine 9,12 which emphasized the joint operation of biological, social, and psychological factors in psychiatric disorders. The language and orientation of the proposed approach are rooted in contemporary learning theory. The conceptual framework is consonant with the view that the course of psychiatric disorders can be modified by systematic application of scientific principles from the fields of psychology.

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and medicine to the patient's habitual mode of living.

This approach is not a substitute for assignment of the patient to traditional diagnostic categories. Such labeling may be desirable for statistical, administrative, or research purposes. But the current analysis is intended to replace other diagnostic formulations purporting to serve as a basis for making decisions about specific therapeutic interventions.

III. Methods of Data Collection for a Functional Analysis

Traditional diagnostic approaches have utilized as the main sources of information the patient's verbal report, his nonverbal behavior during an interview, and his performance on psychological tests. These observations are sufficient if one regards behavior problems only as a property of the patient's particular pattern of associations or his personality structure. A mental disorder would be expected to reveal itself by stylistic characteristics in the patient's behavior repertoire. However, if one views behavior disorders as sets of response patterns which are learned under particular conditions and maintained by definable environmental and internal stimuli, an assessment of the patient's behavior output is insufficient unless it also describes the conditions under which it occurs. This view requires an expansion of the clinician's sources of observations to include the stimulation fields in which the patient lives, and the variations of patient behavior as a function of exposure to these various stimulational variables. Therefore, the resourceful clinician need not limit himself to test findings, interview observations in the clinician's office, or referral histories alone in the formulation of the specific case. Nor need he regard himself as hopelessly handicapped when the patient has little observational or communicative skill in verbally reconstructing his life experiences for the clinician. Regardless of the patient's communicative skills the data must consist of a description of the patient's behavior in relationship to varying environmental conditions.

A behavioral analysis excludes no data relating to a patient's past or present experiences as irrelevant. However, the relative merit of any information (as, eg, growing up in a broken home or having had homosexual experiences) lies in its relation to the independent variables which can be identified as controlling the current problematic behavior. The observation that a patient has hallucinated on occasions may be important only if it has bearing on his present problem. If looked upon in isolation, a report about hallucinations may be misleading, resulting in emphasis on classification rather than treatment.

In the psychiatric interview a behavioral-analytic approach opposes acceptance of the content of the verbal self-report as equivalent to actual events or experiences. However, verbal reports provide information concerning the patient's verbal construction of his environment and of his person, his recall of past experiences, and his fantasies about them. While these self-descriptions do not represent data about events which actually occur internally, they do represent current behaviors of the patient and indicate the verbal chains and repertoires which the patients has built up. Therefore, the verbal behavior may be useful for description of a patient's thinking processes. To make the most of such an approach, variations on traditional interview procedures may be obtained by such techniques as role playing, discussion, and interpretation of current life events, or controlled free association. Since there is little experimental evidence of specific relationships between the patient's verbal statements and his nonverbal behavioral acts, the verbal report alone remains insufficient for a complete analysis and for prediction of his daily behavior. Further, it is well known that a person responds to environmental conditions and to internal cues which he cannot describe adequately. Therefore, any verbal report may miss or mask the most important aspects of a behavioral analysis, ie, the description of the relationship between antecedent conditions and subsequent behavior.

In addition to the use of the clinician's own person as a controlled stimulus object in interview situations, observations of interaction with significant others can be used for the analysis of variations in frequency of various behaviors as a function of the person with whom the patient interacts. For example, use of prescribed standard roles for nurses and attendants, utilization of members of the patient's family or his
friends, may be made to obtain data relevant to the patient's habitual interpersonal response pattern. Such observations are especially useful if in a later interview the patient is asked to describe and discuss the observed sessions. Confrontations with tape recordings for comparisons between the patient's report and the actual session as witnessed by the observer may provide information about the patient's perception of himself and others as well as his habitual behavior toward peers, authority figures, and other significant people in his life.

Except in working with children or family units, insufficient use has been made of material obtained from other informants in interviews about the patient. These reports can aid the observer to recognize behavioral domains in which the patient's report deviates from or agrees with the descriptions provided by others. Such information is also useful for contrasting the patient's reports about his presumptive effects on another person with the stated effects by that person. If a patient's interpersonal problems extend to areas in which social contacts are not clearly defined, contributions by informants other than the patient are essential.

It must be noted that verbal reports by other informants may be no more congruent with actual events than the patient's own reports and need to be equally related to the informant's own credibility. If such crucial figures as parents, spouses, employers can be so interviewed, they also provide the clinician with some information about those people with whom the patient must interact repeatedly and with whom interpersonal problems may have developed.

Some observation of the patient's daily work behavior represents an excellent source of information, if it can be made available. Observation of the patient by the clinician or his staff may be preferable to descriptions by peers or supervisors. Work observations are especially important for patients whose complaints include difficulties in their daily work activity or who describe work situations as contributing factors to their problem. While freer use of this technique may be hampered by cultural attitudes toward psychiatric treatment in the marginally adjusted, such observations may be freely accessible in hospital situations or in sheltered work situations. With use of behavior rating scales or other simple measurement devices, brief samples of patient behaviors in work situations can be obtained by minimally trained observers.

The patient himself may be asked to provide samples of his own behavior by using tape recorders for the recording of segments of interactions in his family, at work, or in other situations during his everyday life. A television monitoring system for the patient's behavior is an excellent technique from a theoretical viewpoint but it is extremely cumbersome and expensive. Use of recordings for diagnostic and therapeutic purposes has been reported by some investigators.2,5,24 Playback of the recordings and a recording of the patient's reactions to the playback can be used further in interviews to clarify the patient's behavior toward others and his reaction to himself as a social stimulus.

Psychological tests represent problems to be solved under specified interactional conditions. Between the highly standardized intelligence tests and the unstructured and ambiguous projective tests lies a dimension of structure along which more and more responsibility for providing appropriate responses falls on the patient. By comparison with interview procedures, most psychological tests provide a relatively greater standardization of stimulus conditions. But, in addition to the specific answers given on intelligence tests or on projective tests these tests also provide a behavioral sample of the patient's reaction to a problem situation in a relatively stressful interpersonal setting. Therefore, psychological tests can provide not only quantitative scores but they can also be treated as a miniature life experience, yielding information about the patient's interpersonal behavior and variations in his behavior as a function of the nature of the stimulus conditions.

In this section we have mentioned only some of the numerous life situations which can be evaluated in order to provide information about the patient. Criteria for their use lies in economy, accessibility to the clinician, and relevance to the patient's problem. While it is more convenient to gather data from a patient in an office, it may be necessary for the clinician to have first-hand information about the actual conditions under which the patient lives and works. Such familiarity may be obtained either by utilization of informants or by the clinician's entry into the home, the job situation, or the
social environment in which the patient lives. Under all these conditions the clinician is effective only if it is possible for him to maintain a nonparticipating, objective, and observational role with no untoward consequences for the patient or the treatment relationship.

The methods of data collecting for a functional analysis described here differ from traditional psychiatric approaches only in that they require inclusion of the physical and social stimulus field in which the patient actually operates. Only a full appraisal of the patient’s living and working conditions and his way of life allow a description of the actual problems which the patient faces and the specification of steps to be taken for altering the problematic situation.

**Summary**

Current psychiatric classification falls short of providing a satisfactory basis for the understanding and treatment of maladaptive behavior. Diagnostic schemas now in use are based on etiology, symptom description, or prognosis. While each of these approaches has a limited utility, no unified schema is available which permits prediction of response to treatment or future course of the disorder from the assignment of the patient to a specific category.

This paper suggests a behavior-analytic approach which is based on contemporary learning theory, as an alternative to assignment of the patient to a conventional diagnostic category. It includes the summary of an outline which can serve as a guide for the collection of information and formulation of the problem, including the biological, social, and behavioral conditions which are determining the patient’s behavior. The outline aims toward integration of information about a patient for formulation of an action plan which would modify the patient’s problematic behavior. Emphasis is given to the particular variables affecting the individual patient rather than determination of the similarity of the patient’s history or his symptoms to known pathological groups.

The last section of the paper deals with methods useful for collection of information necessary to complete such a behavior analysis. This paper was written in conjunction with Research grant MH 06921-03 from the National Institutes of Mental Health, United States Public Health Service.

**REFERENCES**