An Overview of the Psychopathology of Psychoses: 
Past, Present, and Future of the Biometric Approach

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Before World War II, psychopathology was largely in the hands of phenomenologists who described the internal and external behavior of patients as they observed and perceived it. Kraepelin, Jaspers, Freud, and their followers enriched the heritage of phenomenological observations that came down through the ages from the days of the Ayure Veda, 34 centuries ago. But since no successful therapeutic interventions emerged from these observations, they became static and largely academic, while the patients stagnated in custodial care.

After World War II, with the spread of psychiatry and clinical psychology beyond hospitals and into clinics and private practice offices, a more dynamic approach to observation, including active intervention, took place. Physical therapies and, later, drug therapies and behavior modification developed, and the plethora of options for treatment demanded selection and evaluation. Psychologists and psychiatrists were caught short by this demand. There were no tools available for reliably diagnosing and evaluating the new therapies. There was a need for the development of an objective, systematic approach to descriptive psychopathology to replace the intuitive, freewheeling observational approach. To meet this need, the biometric approach was born.

The available psychological measures ranging from intelligence, personality, projective and sorting tests to expressive techniques like handwriting or drawing were unsatisfactory. Their evaluation, except for intelligence tests—not very useful in the psychoses—depended on the clinical interview, and the latter proved under close scrutiny to be highly idiosyncratic, unreliable, and invalid. We decided in the 1950's to do something about this and, aiming our psychometric techniques on the interview itself, transformed it from a blunderbuss to a sharp shooting rifle aimed at specific behavioral characteristics. The vast universe of observation of the mentally ill during the last 34 centuries has been codified and systematized and analyzed into its underlying components. The resulting armamentarium of systematic structured interviews and rating scales has proliferated into quite an industry and, sometimes, like the sorcerer's apprentice, I wish I could stop this proliferation and return to the careful clinical observations of yesteryear.

There is danger now of stagnating again, this time on the computer rather than on the ward. However, these techniques are so much more reliable and valid than the freewheeling clinical interview that, despite dangers of stagnation, they earn their keep. They have been most useful in evaluating the newly developing drug interventions. But not all therapeutic interventions are benefiting from these new tools. Apparently there exist, in the field of testing and of therapy, grandfather clauses similar to those that exist in the field of licensing practitioners. Psychoanalysis and psychotherapy, which came in before the biometric wave, remain immune to evaluation, even as the Rorschach technique still survives despite the critical evaluation of its efficacy. Only the new projective techniques like the Szondi came a cropper under critical evaluation. But the new drug therapies are fortunately undergoing critical evaluation by means of the biometric tools, and the good are being separated from the poor.
techniques. It is to be hoped that the newly developing psychological therapies will also not be permitted to thrive unchallenged. This applies especially to the group and confrontation marathons which, to quote Donald T. Campbell and C. Alan Boneau, range from those “...providing comforting solace for fellow sufferers to those proffering the cleansing cruelty of honest criticism from groups of peers one doesn’t have to live with.” The first step in this direction has already been taken.

The virtue of biometric techniques is that they are comparable from patient to patient and even within the same patient from one interview to another; they are comparable across interviewers if these interviewers have received adequate training; and they meet criteria of reliability and validity to satisfy even the most critical psychometrician. Biometric techniques are not perfect, however. They lack accepted definitions of terms, so that, for example, anxiety does not always mean the same thing cross-culturally. They also cannot provide safeguards against broadening or constricting the inclusiveness of diagnostic categories. For the first difficulty of cross-cultural (and sometimes intracultural) definition of terms, we still have no ready solution except through training with the help of videotapes of interviews depicting the various crucial behaviors. For getting better agreement on diagnosis, we do have a solution. J. P. Feighner's group has proposed an operational definition of schizophrenia and the other mental disorders for the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM III). The proposed system provides explicit criteria which are in the form of sets of items, a specified number of which must be present before a diagnosis can be made. To deal with subjects or patients who do not meet the required criteria for any diagnosis, a category of "undiagnosed psychiatric disorder" or "no psychiatric disorder" is provided. Utilizing these research diagnostic criteria, R. L. Spitzer and J. Endicott have shown that the reliabilities of diagnostic decisions rise considerably.

Other advances consist of developing an anatomy of psychopathology by dissecting out dimensions of psychopathology through factor analysis methods and separating such important factors as anxiety from depression which formerly were compressed into the same component. These dimensions help in clustering like-minded patients into homogeneous subgroups on the basis of similarity in profile or in response to treatment. This typological approach aims at bridging the gap between the Kraepelinian approach of disease categories and the Bleulerian approach to syndromes or Meyerian reaction patterns.

Another innovation in descriptive psychopathology is the utilization of the computer in arriving at a diagnosis. By simulating the clinical decision process, we can obtain independently of the clinician a reliable diagnosis which seems to agree as well with clinical diagnoses as one clinician agrees with another.

These new interviewing methods have demonstrated their value in two major studies—the United States-United Kingdom Diagnostic Project and the WHO Pilot Study in Schizophrenia (1973). The U.S.-U.K. project was initiated to determine why the national statistics for schizophrenia and affective disorders show such widely discrepant ratios in the two countries, with the U.S. showing a predilection for schizophrenia and the U.K. for affective disorders. (The ratio of schizophrenia/affective disorders is 2:1 in the U.S. and only 0.5:1 in the U.K.) When our systematic structured interviews were applied by the U.S.-U.K. project staff to samples of admissions to the two countries, and a systematic glossary and diagnostic criteria were adhered to, the differences between the two countries turned out to be not in the patients but in the psychiatrists. Similarly, the ratio of first admissions for functional psychoses to chronic organic brain syndromes was found to be 10:1 in the U.S. and only 0.5:1 in the U.K. But here, too, these differences disappeared when our systematic approach to diagnosis was applied. The WHO Pilot Study in Schizophrenia found specific syndromes of schizophrenia ubiquitously in the nine contrasting developing and advanced cultures that this study investigated from Washington to Ibadan.
Another innovative approach in diagnosis is due to the behaviorally oriented therapists who, finding classic diagnosis of no help in their work, eschewed it in favor of a behavioral analysis. F. H. Kanfer and G. Saslow have pioneered in this area and have focused on those aspects of the individual and his environment that are of immediate relevance to therapy. Behavioral analysis is functional, not topographical, stressing not the presence of a symptomatic behavior but the contingencies under which it arises and those which maintain it. Observation of these contingencies is the focus of the method, and intervention based on learning theory is the basis for treatment. The general outline of behavioral analysis is already available, and, although it has not yet become a generally accepted method, it seems promising for at least certain disorders. Whether it will suffer from the same limitations that delimit behavior therapy itself remains to be determined.

Description, however, is not enough. We must look deeper if we are to find the causes of mental disorder or to intervene successfully in the rehabilitation or even prevention of mental disorders. Ever since early man trephined skulls to eject evil demons, attempts have been made to divine the sources of mental illness. These attempts can now be formulated as scientific models on the basis of which hypotheses are projected and experimental work done to test their tenability. The current models can be classified as either biological or ecological, the former dealing with genetics, internal environment, and neurophysiological approaches, the latter with developmental, learning, and environmental approaches.

Each of these approaches has contributed to the deeper understanding of, and better intervention into, mental disorders, but none has captured the entire field singlehanded. Interaction among them is fruitful. Perhaps the most salutary view is to regard the casualties of mental disorder as vulnerable individuals who, when given more stressful life experiences than their thresholds permit, develop an episode of illness. Eventually, we hope to discover the components of this vulnerability, but at present it may be best to regard vulnerability as the focus, even while searching for its causes. How to measure vulnerability is the task the biometrician is now facing.

Unfortunately we do not yet have ways of measuring vulnerability nor ways of measuring the triggering life events that elicit an episode. We can, however, develop models for conceptualizing the interaction between such events when they become available.

Measures of life-event stressors such as those which F. H. Holmes and R. H. Rahe have developed may prove to play a role in the environmental triggering of an episode similar to the role played by degree of consanguinity in the genetic elicitation of an episode.

Individuals with low vulnerability require a tremendously stressful life event to catapult them into an episode, while those with high vulnerability require but a mild stressor. Once the stress drops again below the threshold, however, the episode ends and the individual returns to his premorbid status. He returns to his place in society and is regarded as recovered. However, if his premorbid level was poor, it is often difficult to tell whether the episode is over; if he could not cope with life exigencies before the episode developed, he will still seem incapable of coping when the episode ends. This may be the reason why it is generally believed that good premorbid tend to recover while poor premorbid do not. In actuality, both recover from the episode, but the recovery cannot be seen in the poor premorbid. In addition, the episode experience may further reduce the coping ability of the poor premorbid.

It is so well accepted that the episode in the affective disorders is time-limited; it needs no further discussion. Whether it also holds true of the schizophrenias is not so well accepted, but the following sets of data seem to make it at least tenable: the disappearance of the catastrophic deteriorating schizophrenias, the shortening of hospital stay to briefer and briefer durations, the return of 50 percent of schizophrenics to self-support in the community, the rehabilitation of the other 40 percent who relapse even though 10 percent remain chronically ill. Even these 10 percent may not really be
having enduring episodes, since at least some of them may be victims of our system of care and social injustice. My own tentative conclusion is that the mentally ill may not be diseased all the time—they may be vulnerable continuously, but not diseased or disordered continuously.

The biometric problem is to devise methods for gauging vulnerability, detecting the beginning and end of episodes, measuring life-event stressors, measuring coping ability before and after episodes, and measuring competence. Thus, while we rejoice in the success that biometric methods have already attained, we still have a long task ahead.

We need to distinguish between indices marking the beginning and ending of episodes, the state-related markers, from those which mark the degree of vulnerability, trait-related markers. Investigations of the presence of these markers in relatives and discordant identical twins can help find the trait-related markers. The state-related markers can be discovered by examining their presence during the episode and their subsequent disappearance when the episode ends.

As for the future of the biometric approach to the psychopathology of the psychoses, several trends are developing. The development in descriptive psychiatry has reached the point where the reliability of the interview results is reasonably high and the operational nature of the diagnosis reasonably established. Still to be demonstrated is the validity of the diagnostic categories. Some predictive validity has been established through followup studies which tend to show that those diagnosed as depressives tend to stay in the hospital for shorter periods than those diagnosed as schizophrenics. Concurrent validity is being sought in certain neurophysiological responses. For example, the critical duration for sensory integration is shorter in schizophrenics suffering with thought disorder than in depressives and normal controls. Manic patients tend to have higher auditory thresholds and, in addition, show a facilitation effect in their reaction times. These two examples demonstrate that techniques can be found in which the performance of mental patients is "superior" to that of normals; in this way, we eliminate the possibility that the observed difference was due to poor motivation on the part of the patients. S. Sutton reviews several other techniques in which significant differences are observed between patients and normals. If we are fortunate enough to develop such markers of vulnerability, and the entire gamut of models from the biological to the ecological are beginning to develop such markers, we could institute preventive methods geared to improving poor premorbid personalities while treating the good premorbid with "benign neglect," since their episodes are self-curing and they usually return to their good premorbid coping ability and competence soon after the end of their episode.

With regard to the reduction of vulnerability, if it is indeed possible, the paths to pursue are probably the following: We can reduce vulnerability temporarily by means of suitable pharmacological agents. Whether we can ever redress permanently the biochemical and personality imbalance which may lurk behind vulnerability is still a moot question. We can also reduce vulnerability by desensitizing the person to the threatening nature of life-event stressors either through behavior modification or psychotherapy. Perhaps an integration of the biochemical and psychological approaches is called for.

To summarize, the psychoses are gradually yielding to the biological and ecological assaults. Both approaches are needed if we are to make any headway. The day of blind forces, whether biological or environmental, driving man to his fate is gone. In our discussion of the etiological models it may have appeared that we consider the individual as either a pawn of ecological pressures or as a slave working out his hereditary fate. This is hardly a true picture of man. For a better definition of vulnerability in which man's personal freedom and integrity are maintained, we must follow J. R. Audy, and look to a concept of health as the maintenance of a dynamic equilibrium against insults continually emanating from the chemical, physical, infectious, psychological, and social environment. When this equilibrium is disturbed beyond its capacity to reinstate its own homeostasis, a disorder ensues. It is
man’s personal freedom and integrity which are threatened by mental disorder, and it is the reduction of this threat that commands our efforts in the future.

What are the forces that today threaten man’s ability to cope with his environment and how are they being dealt with? It is debatable whether psychopathology is actually on the increase, but it is quite clear that society’s capacity to deal with psychopathology seems to be faltering. The institutions developed in our culture to deal with anxiety, depression, and other psychopathological influences have broken down. The church, the family, marriage, and social networks do not function with the effectiveness they once had. For the most part, they seem to serve goals and functions no longer desired. Thus, most of our churches are primarily salvation oriented, family and marriage largely procreation oriented, and employment primarily age limited. Our economic system is primarily profit oriented, our health systems primarily disease oriented, and our research programs primarily discipline oriented. The treatment systems and research programs we have developed are primarily institution or profession oriented rather than problem oriented. The established order is too much with us, preventing the viewing of problems in their totality. The current orientation in economics, health, treatment, and research is ill equipped to deal with the problems presented by the health needs of our population. If we are to meet these needs, we can no longer let profit, disease, and single perspectives rule. We must not limit our efforts to but one scientific model—the disease model—even if it has been so phenomenally successful in the past, nor be merely discipline centered in research. Only by becoming problem centered and by permitting coalitions of disciplines to work toward solution of problems can we hope for progress. Interdisciplinary coalitions are the key to future success in research psychopathology.