The Diagnosis of Schizophrenia: A Review of Recent Developments

by Richard J. Haier

Abstract

Empirical research on the diagnosis of schizophrenia during the late 1970s is reviewed. This period covers work carried out just before the introduction of DSM-III. Two trends are apparent. First, the concept of schizophrenia is narrowing as a result of a decreased emphasis on "classic" schizophrenic symptoms, an increased reliance on affective symptoms as more diagnostically useful, a shift toward classifying schizoaffective disorder as more similar to affective diagnoses, and an increase in the use of explicitly defined operational criteria derived with an emphasis on reliability. Second, the concept of schizophrenia as a unitary disease is diminishing. Heterogeneity is becoming a focus of study, and biological variables may define subtypes. As definition and reliability have been the nosological problems of the 1970s, subtyping and comparative validity among diagnostic systems may be the problems for the 1980s.

Surveying the explosion of literature on psychiatric diagnosis, clinicians and researchers must wonder if schizophrenia is what it used to be, or if schizophrenia ever was what it used to be. One researcher has observed, "as if decreed by poetic justice, the historical texture of schizophrenia theorizing has come to mimic the illness itself" (Reich 1976, p. 10). No aspect of any discipline is more fundamental than its classification capability. Despite the fads and the slow evolution of diagnostic conceptualizations, progress in psychiatric nosology is apparent (see, for example, Klerman 1978). Diagnostic problems concerning schizophrenia especially provoke frustration since, after years of effort, we still do not know what schizophrenia is, and often we cannot agree on which individuals are schizophrenic.

Classifying articles on nosology and schizophrenia is no easier than classifying the psychopathology itself. This review seeks to highlight developments concerning the diagnosis of schizophrenia reported in the period since the last such review in the Schizophrenia Bulletin (Keith et al. 1976). Emphasis is on empirical studies and the presentation of research findings, although many noteworthy articles published in this period are nonempirical discussions, conceptualizations, and overviews of nosological problems in psychiatry (see, for example, Blashfield and Draguns 1976; Blum 1978; Fox 1978; Freides 1976a, 1976b; Pfohl and Andreasen 1978; Skodol, Buckley, and Salamon 1976; Spitzer and Klein, especially Section 1, 1978; van Praag 1976; Varga and Kroll 1977; Zubin 1978). Other specific topics like the vulnerability model of schizophrenia proposed by Zubin (Zubin 1978; Zubin and Spring 1977) and Soviet classification of schizophrenia (Holland and Shakhmatova-Pavlova 1977) are not included because few new research data are available to complement the conceptual presentations. Before different approaches to the diagnosis of schizophrenia are discussed, several issues concerning the range of schizophrenia are taken as a starting point.

1This review was completed during the summer of 1979 and thus does not include many subsequent articles of interest. Nonetheless, the trends noted still stand.

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The Range of Schizophrenia

The Relationship to Manic-Depression. Since Kraepelin, schizophrenia and manic-depression have been regarded as two distinct categories of psychopathology. Much subsequent evidence, including genetic and drug response data, supports this dichotomy (see for example, Shopsin, Kim, and Gershon 1971; Slater and Cowie 1971). In many cases American psychiatrists overuse the diagnosis of schizophrenia and underuse the diagnosis of manic-depression (see Gurland 1976; World Health Organization 1973, 1975). In light of this, investigators are reassessing reliance on so-called “schizophrenic symptoms” to diagnose schizophrenia irrespective of other symptoms present. A comprehensive review of this problem by Pope and Lipinsky (1978) resulted in these conclusions: (1) “Classic” schizophrenic symptoms are reported in 20 to 50 percent of validated cases of manic-depressive illness, and no set of symptoms has proved valid in uniquely diagnosing schizophrenia. (2) Some affective symptoms appear better than schizophrenic symptoms in differential diagnosis and are also better predictors of outcome. (3) “Good-prognosis schizophrenia” (including schizoaffective schizophrenia) includes a large proportion of patients with manic-depressive illness. The scope of Pope and Lipinsky’s excellent review necessitates an oversimplified summary here. Overall, the idea that schizophrenia is always easily distinguishable from manic-depression is challenged, and clinicians and researchers are cautioned to reevaluate their reliance on schizophrenic symptoms for differential diagnosis.

Along these lines, Sicignano and Lichtenstein (1978) reported successful lithium treatment of “schizophrenic” patients rediagnosed as having bipolar affective illness according to the Feighner criteria (Feighner et al. 1972). Rapp and Edwards (1977) also found patients with affective symptoms, diagnosed schizophrenic, who responded to lithium. Alexander, van Kammen, and Bunney (1979) found a small number of schizophrenics who had a modest positive response to lithium in a double-blind study. These respondents met DSM-II (American Psychiatric Association 1968) criteria for schizophrenia, but most met research diagnostic criteria (RDC) for schizoaffective disorder (Spitzer, Endicott, and Robins 1978). Nonetheless, the authors stated that the respondents were schizophrenic and not misdiagnosed cases of affective disorder. The idea that response to lithium may be a good diagnostic sign to exclude a diagnosis of schizophrenia needs thorough investigation. At the very least, researchers must focus on removing patients with manic-depressive illness from samples of schizophrenics.

Relationship to Schizoaffective Disorder. Sometimes the confusion between schizophrenia and affective symptom manifestations leads to a diagnosis of schizoaffective disorder. The history of this category is reviewed by Procci (1976), who suggests that schizoaffective patients probably are different from schizophrenics and more similar to patients with affective illness. This generalization is based on studies which show that “schizo-affectives exhibit some degree of response to lithium carbonate, tend to remit, and have pedigrees more laden with affectively ill relatives than with schizophrenics” (p. 1176). A family history study (Tsuang et al. 1977) also indicated that the rate of affective disorders was higher than the rate of schizophrenia in the relatives of schizoaffective patients. Tsuang, Dempsey, and Rauscher (1976) also reported that 80 percent of patients with a diagnosis of atypical schizophrenia had manic symptoms. Again, caution in diagnosing schizophrenia in the presence of manic symptoms was suggested. McCabe (1976) found schizoaffective patients closer to a diagnosis of affective disorder. Similarly, Sovner and McHugh (1976) found 13 of 27 patients with the diagnosis of schizoaffective showed evidence of a bipolar course and concluded that these cases were more aptly diagnosed manic-depressive. Taylor and Abrams (1973) previously suggested that schizophrenic symptoms need not take precedence when manic symptoms are present.

Welner et al. (1977) studied 114 patients diagnosed as schizoaffective (according to DSM-II) and found 71 percent had a chronic course (most with deterioration) and another 19 percent were asymptomatic on phenothiazines. In addition, affective symptoms did not predict course or outcome of the illness. They thus concluded that schizoaffective disorder is appropriately regarded as a schizophrenic illness.

Recently, Tsuang (1979) has reported a study of 35 sibling pairs and concluded that the same diagnosis occurs in pairs of siblings when the diagnosis is schizophrenia or affective disorder but not when schizoaffective. These results suggest that “schizoaffective is genetically heterogeneous with at least two subtypes, one a variant of affective disorder, the other a variant of schizophrenia.” Stabenau (1977) reviewed the genetic literature for
schizophrenia, affective, and schizoaffective and proposed a mixed schizophrenic and manic-depressive polygenetic model to explain schizoaffective manifestations.

A study by Docherty and Fiester (in press) reports a comparison between 24 schizophrenics and 8 schizoaffectives in which diagnoses were determined according to the RDC (Spitzer, Endicott, and Robins 1978). Overall, schizoaffectives showed milder psychopathological features on a variety of measures, and the authors conclude that a distinction between schizophrenia and schizoaffective is valid. Nonetheless, they do not include a comparison group with affective diagnoses so the relationship of RDC schizoaffective to RDC affective is not elucidated.

Most recent studies caution against including schizoaffective cases with schizophrenia. The possibility that schizoaffectives include some cases etiologically closer to schizophrenia and some cases closer to affective disorder and some cases of genuine mixture is still an open question. As demonstrated in the problem of differential diagnosis between schizophrenia and manic-depression, it is necessary to use family history, course of illness, and drug response data to supplement the diagnostic picture derived on the basis of the acute symptom manifestation.

Relationship to Borderline Schizophrenia. In addition to the “in between” cases classified as schizoaffective, the “not quite” cases often receive a diagnosis of borderline schizophrenia. A resurgence of research interest in this concept followed the pivotal importance of borderline schizophrenia cases in the analysis of the Denmark adoptees studies of schizophrenia (Rosenthal et al. 1971). Several reviews of the borderline problem (Gunderson 1979; Liebowitz 1979; Rich 1978; Rieder 1979; Siever and Gunderson 1979; Spitzer and Endicott 1979; Stone 1977) indicate considerable progress in conceptualizing the possible connections between borderline schizophrenia, schizophrenia, and other psychopathology. New empirical studies, however, are not so plentiful. Gunderson and Kolb (1978) derived criteria to distinguish borderline patients from other psychiatric groups, including schizophrenics. These criteria were compared to criteria previously described by three other investigators in a study reported by Perry and Klerman (1978). Little overlap among the four different systems was noted.

While the basic issues are still a matter of disagreement, the problem is being set up for future research by the APA Task Force on Nomenclature and Statistics. Based on a study by Spitzer, Endicott, and Gibbon (1979), a distinction is drawn between borderline schizophrenia (to be called schizotypal personality) and borderline personality. This study is noteworthy for its methodology as much as for its conclusions. Starting with operational definitions and criteria lists for the two categories derived from literature reviews and consultations with researchers, the authors asked 4,000 members of the American Psychiatric Association to rate the criterion items for two specific patients of their own choosing; one with any “borderline” diagnosis and another without psychosis or borderline features. Only 808 clinicians responded with usable data. Factor analysis and discriminant function analyses helped refine the item lists for both categories. The authors conclude that the items so derived are valid criteria for borderline personality and schizotypal personality diagnoses. Interestingly, 54 percent of the 808 “borderline” patients meet the criteria for both borderline personality and schizotypal personality (see also Rosenthal 1979). The idea of validating diagnostic categories against current clinical practice has a long tradition and obvious weaknesses. Other sources of validating evidence such as drug response, course of illness, family history, and biological markers need equal emphasis if these two categories or any psychiatric categories ultimately are accepted. Research into the borderline concepts is just beginning, but for now, the diagnostic relationship between schizophrenia and the borderline diagnoses must be regarded as unresolved.

Relationship to Organic Problems. While the difficulty of differential diagnosis between schizophrenia and other psychiatric categories is being considered, mention must be made regarding the organic aspects of diagnosis. The proportion of schizophrenics with some brain damage may be quite high (Weinberger et al. 1979), although no specific or unique damage is associated with schizophrenia per se. Sometimes organic problems are misdiagnosed as schizophrenia (Adebimpe 1977) with a resulting ineffective treatment history. Discriminating between schizophrenic symptoms caused by brain damage and “nonorganic” schizophrenia is problematic. A review of 94 studies (Heaton, Baade, and Johnson 1978) concluded that psychiatric patients excluding chronic and process schizophrenia can be discriminated from brain-damaged patients. The authors suggest that schizophrenics may look organic on neurological tests because many such patients in fact have brain...
approach is the nonspecificity of "schizophrenic" symptoms (Carpenter et al. 1976; Pope and Lipinska 1977). Carpenter et al. (1976), reporting on the International Pilot Study of Schizophrenia, showed that hebephrenic, catatonic, simple, acute, paranoid, and schizoaffective subtypes do not differ very much across 27 dimensions of psychopathology. Other investigators have found catatonia (Abrams and Taylor 1977), anhedonia (Harrow et al., 1977), and thought disorder (Harrow and Quinlan 1977), three symptoms often used clinically for subtyping, not specific to schizophrenia. In fact, catatonic features were found more frequently in patients with affective disorders.

A variant of the descriptive approach, empirical cluster analysis, has been applied to the subtype problem in schizophrenia (see Carpenter et al. 1976), but the resulting groupings need validation. Another approach is to define subgroups on the basis of homogeneity of biological, genetic, neurophysiological, and other "nonsymptom" variables (see Buchsbaum and Haier 1978). Asarnow, Cromwell, and Rennick (1978), for example, compared schizophrenics with and without a family history of schizophrenia. This subtyping yielded interesting differences in electrophysiology and cognitive functioning. Evoked potential differences were used as a basis for subgrouping schizophrenics by Kadobayashi et al. (1978), and differences in symptom patterns in the resulting groups paralleled the classic types of paranoid, atypical hebephrenic, typical hebephrenic, and simple schizophrenia. Goldstein and Halperin (1977) found that neuropsychological tests could discriminate a long-term/short-term classification of schizophrenics better than either a paranoid/nonparanoid or a neurologically normal/abnormal classification. The approach of defining psychopathological groups on the basis of nonsymptom variables will be discussed further in another section.

**Approaches to Diagnosis**

**DSM-III.** Current interest in psychiatric diagnosis is focused on
the proposed third edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-III). At this writing, the criteria for schizophrenia are close to finalization, but the whole idea of the DSM-III revisions has been controversial from the early deliberations (Zubin 1977; Schacht and Nathan 1977; Goleman 1978). DSM-III speaks directly to two major problems of diagnosis: Not everyone uses the same criteria in making a diagnosis, and many criteria are unreliable. DSM-III provides standard criteria for each category which are operationally defined and tested for reliability. This is a major development in descriptive psychiatry. Critics, however, point out that the choice of many criteria (e.g., a 2-week duration of a symptom) is arbitrary and nonempirical and that the method of choosing reliable items may adversely affect the validity of diagnostic categories (Carey and Gottesman 1978).

The DSM-III criteria for schizophrenia published most recently (Spitzer, Andreasen, and Endicott 1978) are likely to be very similar to those in the final version. With respect to the question of the range of schizophrenia, DSM-III takes a relatively narrow view, excluding the spectrum concept (Kety et al. 1968; Reich 1975, 1976) generally, and latent, simple, and borderline schizophrenia categories specifically. A category of schizotypal personality will replace these. Schizoaffective disorder is listed as a separate category rather than as a subtype of schizophrenia, and acute schizophrenia has been dropped as a separate category. A 6-month course is required for the schizophrenia diagnosis, and a new category of schizophreniform is used for individuals meeting the other schizophrenia criteria, but having a duration of less than 6 months. A deteriorating course is not required for a diagnosis of schizophrenia, and none of the symptom criteria are regarded as pathognomonic. Age of onset before age 45 and impairment of functioning also are considered diagnostic features.

There are 10 symptoms "characteristic" of schizophrenia, and any one must be present clearly before a diagnosis of schizophrenia can be made. These 10 include different aspects of delusions, disordered thinking, and hallucinations. Similarly, at least two of eight "prodromal or residual" symptoms must be present. These include various aspects of social withdrawal, poor functioning, inappropriate affect, odd ideas, and unusual perceptual experiences. Given this range of possible manifestations, it is interesting to note that a group of patients meeting the DSM-III criteria for schizophrenia may be very heterogeneous with respect to symptom patterns. Nonetheless, such a group might be duplicated more easily by other researchers or clinicians because the criteria are clear.

DSM-III also contains criteria for five subtypes of schizophrenia: disorganized (hebephrenic), catatonic, paranoid, undifferentiated, and residual. These categories are based on cross-sectional observation and, on the whole, depend on a single major defining feature. The nonspecificity and the longitudinal aspects of schizophrenia symptoms are not emphasized in the subtype criteria. These types and their criteria, even more than the criteria for schizophrenia, must be regarded as hypotheses to be tested further.

The RDC and Other Descriptive Systems. The Research Diagnostic Criteria or RDC (Spitzer et al. 1978) are the immediate forerunners of DSM-III and are very similar. For schizophrenia, the RDC require the presence of two of eight specific symptoms (for definite) and a minimum 2-week duration of either a current or previous episode. The RDC have been available for several years (although, like DSM-III, revisions have been continual), so many studies have used versions of the RDC to select patient samples. Several studies compare the RDC for schizophrenia with other sets of diagnostic criteria. No published studies of the RDC investigating schizophrenia subtypes are known to the author.

Endicott, Forman, and Spitzer (1979) compared the RDC for schizophrenia to the New Haven Schizophrenia Index (Astrachan et al. 1972), the Carpenter and Strauss Flexible Criteria (Carpenter, Strauss, and Bartko 1973), the St. Louis Criteria (Feighner et al. 1972), and the Taylor and Abrams Criteria (Taylor and Abrams 1975). When these sets of criteria are applied to the same patients, the agreement among the sets about who is schizophrenic is quite variable and, on the average, moderate to low. Interrer agreement, however, in the different systems is generally high. The relative validity of these diagnostic criteria sets is largely undetermined. The respective advantages of each set depend on the purpose for which they are used. Endicott, Forman, and Spitzer (1979) suggest that researchers use the relatively strict set of criteria in initial studies and then use other criteria in additional studies to determine the limits of generalizability. This is a reasonable strategy, but it assumes that "strict" criteria yield homogeneous groups. This may not be the case, particularly with a "Chinese menu" list of criteria.
Strauss and Gift (1977) also compared the RDC for schizophrenia to other diagnostic systems. They suggest that investigators use several systems simultaneously and compare results within a given study across the different diagnostic sets. With this strategy, a heterogeneous group of patients would be included at the outset. This strategy for choosing diagnostic criteria is more empirical and possibly more informative in a shorter time than the strategy suggested by Endicott, Forman, and Spitzer (1979).

Strauss and Gift (1977) base this strategy recommendation on their findings that the RDC classified far fewer patients as schizophrenics compared to the New Haven Index, the Flexible System, DSM-II hospital diagnoses, and Schneider First Rank Symptoms. Most cases classified schizophrenic by these other systems were diagnosed as schizoaffective by the RDC. This comparison strictly excluded all cases with an “important affective component to their symptomatology” from an RDC diagnosis of schizophrenia. The Flexible System and the New Haven Index were most inclusive of cases diagnosed schizophrenic by the other systems. Looking at the range in frequency of schizophrenia according to all these different diagnostic systems reiterates the observation that schizophrenia is easier to diagnose than to define (Varga and Kroll 1977).

The frequency of schizophrenia over time was studied retrospectively with the RDC (Kuriansky et al. 1977). The authors conclude that the frequency of schizophrenia in two decades (1932–1941 and 1947–1956) is the same when the diagnosis is based on the RDC (38 percent and 30 percent, respectively), although patients in the second decade showed fewer “hard-core” symptoms of schizophrenia. An earlier analysis based on hospital diagnoses had indicated more than a doubling of schizophrenia admissions during the second decade (from 29 to 79 percent).

Taylor and Abrams (1978) studied 465 patients admitted to an acute psychiatric inpatient unit using a “strict” set of criteria for schizophrenia. A relatively low percentage of these patients, 6 percent, met the criteria. Citing other research using the St. Louis Criteria and the RDC, the authors argue that the low rate is consistent when a “narrow” view of schizophrenia is applied. Studies using a “broader” view typically show prevalence rates in psychiatric populations around 30 percent. Obviously, the “true” prevalence of schizophrenia and the prevalence of “true” schizophrenia vary according to the criteria used, but validating data to compare different criteria are accumulating.

An example of this is the prediction of prognosis compared across six different diagnostic conceptualizations of schizophrenia (Kendell, Brockington, and Leff 1979). The criteria included: Langfeldt’s (1960), Schneiderian First Rank Symptoms, the New Haven Index, Carpenter’s Flexible Criteria, the RDC, and the computer Catego system (Wing, Cooper, and Sartorius 1974) based on the Present State Examination (PSE). Concordance rates among the different criteria generally tended to be moderate, with the New Haven Criteria showing most inclusiveness and the Carpenter Criteria showing the least inclusiveness. Based on the followup of 118 patients after 6 years, the RDC, Carpenter’s Criteria, and Langfeldt’s Criteria were better overall predictors of symptomatic and social progress than Catego, Schneider, and New Haven Criteria. It is noteworthy that Carpenter’s Criteria appear to be the least confounded with prognosis. Two other recent studies also question the usefulness of Schneider’s system (Koehler and Seminario 1978; Silverstein and Harrow 1978).

In a different kind of study, Haier et al. (1979) screened college students with the MMPI and found a high percentage with markedly elevated scores. Most of these students met the RDC for one of the affective disorders, and a modest correspondence between MMPI code type and RDC was noted.

Another study comparing different diagnostic criteria, including an empirically derived set of discriminant functions (but not the RDC), used hospital diagnoses as a validating standard (Newmark et al. 1976). Although hospital diagnoses, even based on careful consensus, are no longer regarded as an adequate validating basis by many researchers, it is interesting that the discriminant function criteria were more concordant than the criteria of Bleuler (1950), Schneider (1959), or Yusin, Nihira, and Mortashed (1974).

Cross-National Approaches. The International Pilot Study of Schizophrenia (IPSS), sponsored by the World Health Organization (WHO), has generated enough data to justify its own separate review (WHO 1973, 1975). The continuing development of the Present State Examination (PSE) to collect symptom data through interview and the accompanying Catego computer program to implement classification rules (Wing et al. 1977) have aided the reporting of results during the last several years. Over 1,200 patients in nine countries have participated as subjects. Among the major findings reported is that schizophrenia is...
present and identifiable with the same criteria in all countries studied (WHO 1973, 1975). Although there are systematic variations in diagnosis among countries (Leff 1977), a "nuclear syndrome" based on auditory hallucinations, thought disorder, or loss of will characterizes over 95 percent of patients diagnosed schizophrenic or paranoid psychosis (Wing and Nixon 1975). In addition, a 2-year followup of the original cohort revealed "very marked" variation of course and outcome; schizophrenics in the developing countries had better course and outcome (Sartorius, Jablensky, and Shapiro 1977, 1978).

The Catego program weights Schneiderian First Rank Symptoms and, as noted in the previous section summarizing the work of Kendell, Brockington, and Leff (1979), neither the Catego program nor Schneiderian First Rank Symptoms may be the best classification systems to study outcome. Nonetheless, overall, the IPSS contributions highlight the convergence of nosology developments in schizophrenia worldwide. This convergence, of course, is far from complete. For example, the WHO-sponsored Ninth Revision of the International Classification of Diseases (ICD), Mental Disorders Glossary (WHO 1978), still lists schizoaffective and acute categories under schizophrenia, but this difference with DSM-III is bound to be reconciled as more data become available.

Empirical Clustering Approaches to Diagnosis. In the effort to define homogeneous groups, some diagnostician have turned to empirical methods designed to maximize similarities among individuals. Many different clustering strategies have been used on psychiatric data, but most of the results are published in journals unfamiliar to clinicians and researchers in psychopathology. In part, this is due to the highly technical nature of the computational procedures used and the lack of validating criteria to compare different (and sometimes nontraditional) groupings. Recent work in this area tends to be directed at psychiatric classification in general (see Mezzich 1977; Strauss et al. 1979), and it is difficult to evaluate the implications for schizophrenia. Clusters of patients derived empirically may well differ from traditional classifications, particularly with the use of overlapping clustering techniques (Weiner-Ehrlich and Longabaugh 1979). At this writing, it can be said that these methods are generating increased interest, but like other approaches, their validity has yet to be determined.

Biological Approaches to Diagnosis. Encouraged by the results of recent genetic studies (Gottesman and Shields 1972; Kety et al. 1968; Rosenthal et al. 1971) and the successes of drug therapies in alleviating symptoms, biological researchers have continued the search for biological "markers" of schizophrenia despite repeated failures and false starts. Traditionally, diagnostic groups are operationally defined and compared on the biological variable of interest. Group differences are interpreted as evidence implicating the biological variable as salient to the psychopathology. Platelet monoamine oxidase (MAO), for example, is the subject of many such studies of schizophrenia (see Wyatt, Potkin, and Murphy 1979). Two problems permeate biological research related to diagnosing schizophrenia: patients diagnosed with other categories often show the same biological anomaly or deficit, and not all patients diagnosed schizophrenic show the same anomaly or deficit. This nonspecificity and wide variability continually amplify the desire of researchers for better diagnoses to eliminate the noise. Until recently, most researchers (often assuming schizophrenia was a unitary disease) were trying to eliminate or reduce the noise by deriving standard classification systems like the RDC. Some researchers, however, have chosen to study the variability and the nonspecificity systematically.

This latter approach acknowledges that schizophrenia may be more than one disease, with different etiologies. Different subgroups of schizophrenia may be identified on the basis of a biological homogeneity (e.g., low platelet MAO activity) and then validated against symptom clusters, drug treatment response, or other outcome measures. The use of biological variables as independent variables rather than dependent variables (see Buchsbaum and Haier 1978) is in early stages. The possibilities of defining diagnostic entities like "low MAO" disease, which may cut across traditional categories of affective disorders, schizophrenia, and other problems, remain to be investigated (see, for example, Buchsbaum, Coursey, and Murphy 1976; Haier et al. 1980). Some reviews of the neurotransmitter research in psychiatry also address this issue in detail (Murphy and Buchsbaum 1979; Cowdry and Goodwin 1978).

Comment

Two trends are noteworthy in the area of schizophrenia nosology. First, the broad use of the schizophrenic label is narrowing as a result of a decreased emphasis on "classic" schizophrenia symptoms, an in-
creased reliance on affective symptoms as more diagnostically useful, a shift toward classifying schizoaffective disorder as more similar to affective diagnoses, and an increase in the use of explicitly defined operational criteria derived with an emphasis on reliability. Second, the concept of schizophrenia as a unitary disease is diminishing rapidly. One implication of this is that heterogeneity is becoming the focus of study in subtype investigations rather than being perceived as a source of error variance to be eliminated. In this context, the potential use of biological and other non-symptom variables to define subgroups is particularly interesting for future research. To this end, biological researchers may create their own diagnostic systems based on biological homogeneity rather than using biological variables to predict symptom-based categories.

The problems of nosology in schizophrenia are not different from the problems of psychiatric nosology in general. Similar trends are apparent for other categories, especially affective disorders. If a prediction is permitted, DSM-IV may well include specific biological tests to help diagnose or define different affective conditions—for example, 3-methoxy-4-hydroxy-phenylglycol analysis (Schildkraut et al. 1978a, 1978b); the dexamethasone suppression test (Brown, Johnston, and Mayfield 1979; Carroll, Curtis, and Mendels 1976)—and DSM-V may include similar tests for schizophrenia disorders—for example, methylphenidate challenge (Janowsky and Davis 1976). Ultimately, the goal of psychiatric classification systems is to help increase the understanding of the etiology and the prediction of treatment response. Developments are as plentiful as research projects, but advances are often not apparent until many studies replicate and converge on a solution to a problem. If definition and reliability may be regarded as the problems of the 1970s, subtyping and comparative validity among diagnostic systems may be the focus of nosology research for the 1980s. As long as our increasing sophistication in conceptualizing diagnostic issues is matched by increasing sophistication of empirical investigations, solutions to nosological problems are as possible in psychiatry as in any other discipline.

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