the prognosis of schizophrenia: rationale for a multidimensional concept*

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What is the prognosis of schizophrenia? This question might best be answered by reviewing the way in which the concept of schizophrenia has evolved. Originally, as indicated by its earlier name "dementia praecox," schizophrenia was considered to have an extremely poor prognosis. In fact, this characteristic was used as a major criterion for considering it to be a disease.

Kraepelin's combining of prognosis and presenting picture to define dementia praecox marked a major shift from the earlier 19th century trend in psychiatry to conceptualize many types of psychosis as separate diseases based on their cross-sectional symptom pictures alone. It appeared to Kraepelin and several others that such cross-sectional diagnostic criteria were not adequate to differentiate basic disease processes. As Sydenham had proposed two centuries before, diseases as usually conceived have a natural history. Particular symptoms, individually or as syndromes, can reflect many different disease processes, or conversely a single disease may present with various symptom pictures.

But even from the first description of the dementia praecox concept, two questions arose. First, it rapidly became clear that the prognostic picture was in fact more complex than the name implied. Kraepelin noted that some patients considered as schizophrenic by his complex set of criteria (including such characteristics as catatonic symptoms, indifference, and lack of insight) did not deteriorate. Second, he recognized that many clinicians believed the diverse syndromes he had grouped together under the category "dementia praecox" did not in fact represent a single disorder.

Later, in changing the name of dementia praecox to "schizophrenia" or "the group of schizophrenias," Bleuler (1950) expanded the concept and described what he believed to be the underlying pathological processes. The expectation of poor outcome, however, was maintained. Thus, the two basic questions already posed about this disorder were still not resolved: how many illnesses are found under the rubric "schizophrenia," and how can the concept of schizophrenia remain viable when some patients so designated do not have poor outcomes?

This review of the more recent studies on outcome and its prediction in schizophrenia will not provide definitive answers to these questions, since important data are still not available. Such a review can, however, clarify the key issues as they have been developed and modified by the findings of many investigations. It can also suggest a way in which these findings might best be synthesized.

Three Major Views About the Prognosis of Schizophrenia

Since the time of Kraepelin, opinions about prognosis in schizophrenia have taken three different directions: (1) those related to the prognostic implications of the composite Kraepelinian concept of schizophrenia involving specific symptoms viewed cross-sectionally plus course of the disorder; (2) those related to concepts of schizophrenia based on cross-sectional symptom pic-

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ture alone; and (3) those related primarily to the longitudinal aspects of symptoms and social functioning. It is these three orientations to prognosis, not the often—but mistakenly—supposed prognostic differences between broad and narrow diagnostic concepts of schizophrenia that we believe are crucial for clarifying prognostic factors in this disorder.

The Composite Concept of Schizophrenia, Characteristic Symptoms Plus Course

Both Kraepelin and Bleuler observed deteriorating course in the vast majority of schizophrenic patients, and both used this observation to validate the nosologic concept. The same orientation has since been followed by many others, including Langfeldt (1937), Kleist (1960), and Leonhard (1966), in their refinements of Kraepelin's views.

Once diagnosis and poor prognosis are seen as inextricably entwined, a question arises whenever diagnosed schizophrenic patients recover. Kleist (1960) and Leonhard (1966) accounted for this phenomenon by asserting that patients who recovered had been misdiagnosed. Extending this view and attempting to demonstrate it empirically, Langfeldt (1937 and 1969) carried out a series of studies to show that particular diagnostic criteria could be used prospectively to separate the poor-outcome from good-outcome patients. The diagnostic criteria specified by Langfeldt (1937) included certain "characteristic" hallucinations and delusions; for example, the delusion of being controlled by an outside force. In some of his writings, Langfeldt also noted that changes in personality may be diagnostically important, although he pointed out that in most patients a careful consideration of the "characteristic" symptoms was decisive for the prognosis (Langfeldt 1969). The good-outcome patients who at first glance might be considered schizophrenic would not have these symptoms, he believed, and should be more correctly labeled as having schizophreniform psychoses.

Although undeniably valuable, Langfeldt's important studies had some significant methodological shortcomings that raised questions about their conclusions. Diagnoses were based on case record reviews and hence could easily have been contaminated by prognostically relevant information other than the stated diagnostic criteria. For example, even the size of a case record provides clues to how long the patient has been hospitalized or rehospitalized, and hence presumably to the duration of severe incapacitation. Another problem was that although the diagnostic criteria were defined with considerable clarity for their time, a definitive demonstration of their reliability and prognostic value would have required them to be operationalized still further.

As part of the work in the Washington Center of the International Pilot Study of Schizophrenia (IPSS) (World Health Organization 1973), we were partially able to test Langfeldt's (1969) hypothesis using operationalized and reliable symptom criteria (Strauss and Carpenter 1974a and Hawk, Carpenter, and Strauss 1975). A prospective design minimized any unwitting contamination from nondiagnostic factors associated with chronicity. The prognostic significance of "true" schizophrenia compared to schizophreniform psychosis was tested by dividing schizophrenic patients1 according to whether or not Langfeldt's "characteristic" symptoms were rated as present in the Present State Examination (Wing, Cooper, and Sartorius 1974) interview given on admission to the study. The characteristic symptom criteria used in the investigation are described in the original articles, but it is worth noting that the most important were delusions of thoughts or actions being controlled by an outside force and severe depersonalization or derealization.

Items considered to reflect Langfeldt's criteria were selected by us from the interview. The selection procedure was modified following helpful communication with Professor Langfeldt and others who had used his system. Two years and again 5 years after the initial assessment, the patients were evaluated with standardized interviews for assessing outcome. The results were

1 Patients were diagnosed using relatively broad, cross-sectional DSM II (American Psychiatric Association 1968) definitions.
surprising in that outcome in the group of “true” schizophrenic patients with “characteristic” symptoms was similar to the outcome of schizophrenic patients without such symptoms. Since it was difficult to judge whether the degree of depersonalization/derealization met Langfeldt’s criteria, we reanalyzed the data without using these symptoms and obtained the same results.

Other criteria besides characteristic delusions and hallucinations, such as personality change, had also been mentioned by Langfeldt (1937) as helpful in diagnosing schizophrenia, but these characteristics have been difficult to operationalize and could not be empirically evaluated in our study. The results of our investigation did, however, challenge the assumption of an inextricable bond between “characteristic” symptoms and poor outcome in schizophrenia and suggested that a major part of the prognostic value of such composite diagnostic systems may have come from patient characteristics other than the specific symptoms considered as diagnostic.

Concepts of Schizophrenia Based on Cross-sectional Symptomatology

An approach for diagnosing schizophrenia that relies on symptom criteria described cross-sectionally was developed by Kurt Schneider (1959). In his writings, Schneider focused on the diagnostic importance of first-rank symptoms—delusions and hallucinations he considered pathognomonic of schizophrenia in the absence of an organic syndrome. In focusing on these specific symptoms, Schneider deemphasized the diagnostic role of affect, personality, interpersonal relations, and other behavioral characteristics. The result was a clearly defined, reliable, highly operational system for diagnosing schizophrenia (Carpenter, Strauss, and Muleh 1973).

In a sense, Schneider and his followers can be viewed as having pursued to an extreme Langfeldt’s emphasis on characteristic symptoms of schizophrenia by deemphasizing the chronicity and personality characteristics in the concept of schizophrenia described by Kraepelin and Langfeldt. This approach to diagnosing schizophrenia improved the reliability of the diagnostic process, but the question remained: did deteriorating course and poor outcome still validate the concept of schizophrenia so defined? While Schneider did not deal with this issue at any length in his writings, it was often supposed that the greater diagnostic clarity made possible by his system would enhance the association between diagnosis and prognosis.

Using a procedure similar to that employed for evaluating Langfeldt’s criteria, we failed to support the hypothesis that schizophrenia defined by Schneider’s symptom criteria could be validated by course and outcome. In an analysis of symptom data from the sample described earlier, patients considered schizophrenic by Schneider’s criteria were compared with other diagnosed schizophrenic patients not having first-rank symptoms. There was no significant difference between Schneider-positive and Schneider-negative schizophrenic patients at either 2 years (Strauss and Carpenter 1974a) or 5 years (Hawk, Carpenter, and Strauss 1975).

Mellor’s (1970) study of Schneider’s diagnostic concepts is compatible with these conclusions in that he found schizophrenic patients with first-rank symptoms slightly more acute than schizophrenic patients without first-rank symptoms. Taylor’s (1972) apparently opposite finding that first-rank symptoms were associated with poor outcome is open to question since he did not classify patients based on cross-sectional, first-rank symptoms alone. Rather, he compared patients who had both poor premorbid functioning (longitudinally characterized) and first-rank symptoms (cross-sectionally evaluated) with patients who had both good premorbid function and absence of first-rank symptoms.

If the narrower symptom diagnostic criteria of Schneider and Langfeldt define groups as schizophrenic that have outcomes similar to patients considered schizophrenic by the broad DSM II (American Psychiatric Association 1968) guidelines, the breadth or stringency of symptom diagnostic criteria may not be so crucial for prognosis as some have maintained. Many clinicians and investigators, especially in the United States, have used broad diagnostic criteria of schizo-
phrenia including characteristics such as mode of relating, and have even diagnosed as schizophrenic those patients without delusions, hallucinations, severe thought disorder, or bizarre behavior. It is by no means certain that such broad concepts of schizophrenia are invalid; indeed, they appear to be no less valid prognostically than the diagnostic criteria of Langfeldt or Schneider. Nonetheless, it has been so difficult to ensure reliability of the broadly based diagnostic criteria that more specific study of their prognostic implications has not been possible.

We also used the data described above to evaluate the prognostic value of one other cross-sectional diagnostic system. In so doing, we hoped to maximize the opportunity of determining whether a narrow cross-sectional symptom diagnosis of schizophrenia is associated with worse outcome than a broadly defined cross-sectional symptom diagnosis. Using the 12-point system derived from the IPSS by Carpenter, Strauss, and Bartko (1973), we compared “most certain” schizophrenics (8 or more points) with “least certain” schizophrenics (4 or fewer points), omitting from the study patients with intermediate scores. Once again, we failed to find a significant difference in outcome (Hawk, Carpenter, and Strauss 1975).

None of the cross-sectional symptom diagnoses described above defined a group of schizophrenics with homogeneously poor outcome, and no system was prognostically superior to the others. Nevertheless, all the diagnostic systems used identified a group of patients with somewhat poorer outcomes than nonschizophrenics in the sample, although there was much overlap in outcome scores between the nonschizophrenic and the schizophrenic groups.

Although the power of any cross-sectional symptom-based diagnosis to identify a group of patients with poor outcome is limited, symptoms do have another, perhaps even more interesting, prognostic value. The symptom picture tends to predict itself. Followup data from all centers in the International Pilot Study of Schizophrenia (Sartorius, in press) show that if patients relapse, they are highly likely to have symptoms similar to those occurring in earlier episodes of the disorder.

How then are we to understand the prognostic role of symptoms considered cross-sectionally? Generally speaking, it appears that patients diagnosed schizophrenic by any of a wide variety of cross-sectional symptom criteria will have a somewhat less favorable course and outcome than patients diagnosed as having other functional psychiatric disorders. But the difference is less marked than once thought, and it does not appear to relate to which cross-sectional criteria—broad or narrow—are used. Symptoms do seem to be especially useful prognostically, not so much for predicting likelihood of future psychopathology, but for predicting what symptoms a person will have if any do recur.

Prognostic Importance of Longitudinal Characteristics: History of Social Function and Symptom Course

Our work has suggested that cross-sectional symptom criteria alone have far more limited prognostic importance than many had believed. What about the possible longitudinal components of a diagnostic system, variables such as prior social function and symptom course? These characteristics have often been confounded with type of symptoms so that any special prognostic role they might have may have been overlooked.

One diagnostic system, for example (Feighner et al. 1972), includes, in addition to cross-sectional symptom criteria, the requirement that symptoms be continuously present for 6 months or more before reaching a diagnosis of schizophrenia. This system, which has made the important contribution of operationalizing complex diagnostic criteria, has been used effectively by a large group of investigators, including McCabe et al. (1971), Winokur and Tsuang (1975), Tsuang, Dempsey, and Rauscher (1976), and Robins et al. (1977). If Langfeldt’s and Schneider’s work is seen as having shifted emphasis to an increasing degree toward the cross-sectional symptom aspect of Kraepelin’s dementia praecox,
Robins et al. (1977) can be seen as exploring another orientation in their introduction of operationally defined longitudinal criteria related to the patient's functioning before the time of diagnosis.

The Feighner et al. (1972) criteria have resulted in important prognostic and other distinctions between schizophrenics and nonschizophrenics. At first, this system's ability to distinguish a poor-prognosis type of schizophrenia was attributed to its use of narrower criteria than have commonly been employed for diagnosing schizophrenia in the United States. It appeared that the narrowly defined schizophrenic group would not be diluted with patients who might be considered as having better prognosis, such as those diagnosed as affective disorders or reactive psychosis.

However, the criterion of 6 months' duration of symptoms may have largely accounted for the prognostic validity of the system of Feighner et al. (1972). There is overwhelming evidence, for example, that established chronicity is by itself an important prognostic indicator (Brown et al. 1966, Strauss and Carpenter 1974b and Vaillant 1964). It is possible, therefore, that criteria combining symptom type and prior chronicity do not carry a unique degree of prognostic validity beyond the predictive value of each characteristic when it occurs alone. That is, the prognoses associated with symptom type and prior chronicity, respectively, may merely be additive factors not necessarily reflecting a specific disease with poor outcome. The independent prognostic contributions of the various diagnostic criteria of Feighner et al. have not been studied, and thus no one knows how much of this system's prognostic validity is due to symptom criteria, how much to chronicity criteria (which could apply to any symptoms), or whether there is a unique prognostic value to combining these characteristics.

The system of Feighner et al. represents a step toward incorporating longitudinal criteria as diagnostic requirements for schizophrenia. Other investigators have more extensively explored the prognostic implications of pre-illness functioning. Phillips (1966) developed a scale to test the importance of premorbid social adjustment in distinguishing prognostic groups in schizophrenia and other disorders. The validity of the good/poor premorbid dichotomy as measured by this scale has been repeatedly demonstrated in relation to outcome and several treatment and biological characteristics (Garmezy 1968, Higgins 1969, Klorman, Strauss, and Kokes 1977, Kokes, Strauss, and Klorman 1977, and Strauss et al. 1977). Although the predictive value of the Phillips Scale may be somewhat less than was first believed (Serban and Gidynski 1975 and Strauss and Carpenter 1974b), the prognostic importance of premorbid functioning appears to be established. Moreover, newer scales are now available that may have a broader range of applicability than the original instrument devised by Phillips (Gittelman-Klein and Klein 1969, Goldstein, and Kokes and Strauss, in preparation).

Several investigators have attempted to determine whether characteristics other than those described by Phillips (1966) or some optimal group of several characteristics might be still more valuable in differentiating schizophrenics with poor outcome from those who improve. The work of Stephens and Astrup (1963) and Vaillant (1964) has been among the most successful in pursuing this goal. In a series of carefully performed studies, these investigators have described a variety of characteristics, such as onset of symptoms more than 6 months before evaluation and poor early social relationships, that help to distinguish good- and poor-outcome schizophrenics. Their studies are described elsewhere in this issue and will not be presented in detail here. Two facts are important to note, however: (1) These investigators have emphasized the overriding prognostic importance of characteristics other than specific symptoms; in fact, the independence of the prognostic characteristics from specific symptomatic variations within schizophrenia has been noted by Vaillant (1964). (2) No studies have been carried out by these investigators to evaluate whether similar characteristics are important prognostically for patients

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1 Personal communication.
with other psychiatric disorders than schizophrenia.

These facts raise the possibility that there are not two diseases—good- and poor-prognosis schizophrenia—but that there is one disorder with heterogeneous prognosis. Moreover, certain characteristics may exist, such as poor social function, that are prognostically important not only for schizophrenia but for other disorders. Patients who have poor-prognostic traits plus schizophrenic symptoms do not necessarily have a different disease than good-premorbid function patients with the same symptoms—any more than a debilitated, elderly person with pneumococcal pneumonia has a different form of the disease than a younger, more vigorous individual. Available evidence about this question has been reviewed in more detail elsewhere (Strauss et al., in press), but it can be noted here that evidence does suggest the general—not specific—importance of the nonsymptom prognostic indicators for many disorders. A study currently being carried out, the First Admission Study (Strauss et al. 1976), is collecting more definitive data on this issue.

Another recurring question relevant to the issue of good and poor premorbid schizophrenia as two distinct diseases is whether measuring the various prognostic variables results in a bimodal distribution. Although one study (Rosen et al. 1969) reported such a bimodal distribution, this finding may have been an artifact of using case record data not collected in a structured manner (Strauss and Carpenter 1974b). The prognostic data reported by Vaillant (1964) were originally analyzed as good and poor prognostic dichotomies, suggesting perhaps two discrete processes. Reviewing these data suggests, however, that there is not a bimodal distribution of prognostic scores or prognostic outcome correlations, but a continuous relationship between prognostic ratings and outcome. Tabulating the data presented in that study demonstrates that three patient groups can be defined, ranging from worst through intermediate to best outcome, and that the prognostic scores for each group demonstrate a corresponding stepwise increment. Our findings (Strauss et al., in press) also suggest that the relations between predictors and outcomes are roughly linear and not bimodal or skewed. The concept of schizophrenia as a specific poor-outcome disease is thus further challenged.

Another important part of Vaillant's (1964) and Stephens and Astrup's (1963) work was to identify more operationally than had been done previously a number of prognostically important variables. Vaillant described seven such variables: acute onset, confusion, depressive heredity, nonschizoid personality, depression, precipitating factors, and concern with death. Stephens, Astrup, and Mangrum (1967) noted nine variables of prognostic value, five overlapping with the prognostic variables identified by Vaillant, and four additional variables: ever married, low IQ, good premorbid work record, and no emotional blunting.

We also evaluated a number of potential prognostic variables other than presenting signs and symptoms in our studies including variables suggested by the work of Vaillant and Stephens, Astrup, and Mangrum. Our results showed that the following three characteristics were consistently important prognostically: previous duration of psychiatric hospitalization, poor pre-admission social relations functioning, and poor pre-admission work functioning.

These and other studies are impressively consistent in demonstrating the prognostic importance of certain variables. Previous duration of disorder and social relations functioning are the two variables most consistently found to be of prognostic value, with occupational functioning also frequently noted as prognostically important. The prognostic significance of these characteristics has been noted in several cultures, including the United States, Europe (Brown et al. 1966, and Stephens, Astrup, and Mangrum 1967), and Africa (Murphy and Raman 1971). Their value has also been shown recently in an oriental culture as well (Strauss and Chen 1977).

It seems to us that several of the other variables considered of prognostic importance by some investigators may have only limited value in this regard or may be largely overlapping with the three listed above. For example, the variable of precipitating events, often considered progno-
tically valuable, was in our experience extremely difficult to rate reliably or validly (Strauss, Carpenter, and Nasrallah, in press). That our experience is not unique is suggested by the difficulties demonstrated in life events research where elaborate interview and rating procedures have been required to obtain reliable data. It seems possible that at least some of the prognostic value associated with precipitating events is an artifact of data collection in which such events are sought from, and reported more readily by, patients without a history of chronicity or poor social relationships.

Several other characteristics, such as blunted affect, absence of confusion, and absence of depression, may have derived much of their prognostic value from a relationship to established chronicity. For example, in a recent study of first admissions (Strauss et al. 1976) there were very few patients (8 percent) first entering inpatient status who did not show major affective symptoms and signs. Those few without such signs tended to have psychiatric symptoms of long duration even though hospitalization had not previously been required.

This finding is consistent with results from the Washington Center of the IPSS. There we used an analysis of variance technique to determine which signs and symptoms were associated with good or poor outcome in patients who, when first evaluated, had disorders of relatively recent onset. Of all the symptoms assessed, only restricted affect (flattened or partly flattened affect) was significantly associated with outcome. The more restricted the patient’s affective expression was on admission to the study, the worse was his 5-year outcome. Other symptoms and signs, such as anxiety and depression, were not predictive of outcome (Carpenter et al. 1976).

Considered together, the findings described above lead to the following conclusions: (a) the Kraepelinian definition of schizophrenia, which combines course and symptoms, requires that key variables be further differentiated to determine the sources of prognostic validity; (b) cross-sectional, symptom-based diagnosis has only modest prognostic power; and (c) longitudinal measures of function and symptom course have significant prognostic value when considered alone or when incorporated in diagnostic criteria. But more information is now available that helps in further understanding the prognosis of schizophrenia. This information has been derived from studies of the outcome state itself.

The Nature of Outcome

To take the next step in understanding the prognosis of schizophrenia, one must review information that has recently become available about the nature of the outcome to be predicted. Although outcome has often been considered as a single characteristic, recent studies have shown that view to be inaccurate. An investigation (Strauss and Carpenter 1972) that measured four outcome variables (symptom severity, duration of hospitalization, social relations functioning, and occupational functioning) found a surprisingly low correlation between these characteristics, and similar results have been noted in other studies (Lamb and Goertzel 1971 and Schwartz, Myers, and Astrachan 1976). Clinicians have long been aware of the relative independence of various outcome measures in their patients, as, for example, in patients who work well despite severe symptoms and in virtually asymptomatic patients who deteriorate socially nevertheless. Based on these findings, we suggested that different aspects of outcome may reflect separate psychological processes; each of these aspects may bear some relationship to the others, but may still be largely independent. The question arises: If outcome functions are to a significant extent independent of each other, what does that imply about prognosis?

Relationships of Predictors to Outcome Variables

Evaluating the relationships of the various predictors with each aspect of outcome showed that each of three outcome variables—hospitalization, level of social relations, and level of occupational function—was best predicted by its
corresponding predictor variable. Thus, social relations before admission were the best predictor of social relations at outcome; work function before admission was the best predictor of work function at outcome; and duration of hospitalization before the initial evaluation was the best predictor of duration of hospitalization the year before followup. Other results from the literature lend support to these findings (e.g., Monck 1963). Our results suggest that predictor-outcome relationships actually represent a group of longitudinal processes that might best be conceptualized as open-linked systems.

The specific predictor-outcome relationships described above were originally found in analyzing predictors of data collected at the 2-year followup. The same predictor-outcome relationships were found again in analyzing the predictors of 5-year outcome and also in comparing the 2- and 5-year outcome findings. Although no measure of symptom severity had been made at initial evaluation, the longitudinal continuity of this variable, as with the others, was demonstrated by the correlations between the 2- and 5-year followup results.

These findings indicate the longitudinal, consistent, long-term nature of the several predictor-outcome processes. The specific patterns described above predominated, but there was also some crossover of prognostic relationships. It was possible to construct a composite prognostic variable (previous hospitalization, past social relations, and prior work function) of value in helping to predict all outcome characteristics.

Are these predictor-outcome relationships specific to schizophrenia? If a particular prognosis is important to the definition of schizophrenia, then one might expect the predictor-outcome associations in schizophrenia to be different from those in other diagnostic groups. To evaluate how specific the processes described above were to schizophrenia, we investigated whether prognostic characteristics important for schizophrenia were also found in other functional psychiatric disorders. A review of the relevant literature and preliminary data from a study currently in its concluding phases suggested that, in fact, prognostic variables important for schizophrenia are also significant in other psychiatric disorders (Strauss et al., in press).

Schizophrenia: Do Specific Symptoms Together With Longitudinal Variables Reflect a Unique Prognostic Phenomenon?

To evaluate whether there was a unique effect in combining longitudinal prognostic factors with cross-sectional symptom type in defining poor-prognosis schizophrenia as a disease, we matched a group of schizophrenic patients and a group of patients with other functional psychiatric disorders to equate their longitudinal prognostic characteristics (Strauss et al., in press). Patients seen in the early part of the First Admission Study on whom 2-year followup data were already available and patients from the Washington Center of the IPSS with 2- and 5-year followup information were used for this analysis. Comparing the outcome scores of the schizophrenic and nonschizophrenic groups showed that neither their 2-year outcomes nor their 5-year outcomes were significantly different in terms of social relations, symptoms, or a total outcome score. Nonschizophrenics were slightly better in having less hospitalization in the second followup year (but not in the fifth) and were slightly better at 5 years in employment (but not at 2 years).

These findings suggest that the longitudinal variables of prognostic value are important in both schizophrenic and nonschizophrenic disorders and do not combine in some specific way with schizophrenic symptoms to suggest a unique disease, poor-outcome schizophrenia. This last conclusion is still only speculative, however, since the nonschizophrenics in the groups compared may not have been representative of nonschizophrenic inpatients with functional psychiatric disorder. This issue will be tested when followup data, now in the final stages of collection, are available from the entire sample in the First Admission Study.

Considering the prognostic and outcome research described above, we believe that conceptualizing poor prognosis as part of a disease schizophrenia—or even of one type of schizo-
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phrenia—although possible, is not the most parsimonious interpretation of current information. Rather, it appears to us that prognostic factors reflect psychobiological systems that are probably important in many functional psychiatric disorders. When poor functioning is predicted by prognostic factors, then a chronic course is more likely—regardless of the type of functional psychiatric disorder. These processes do not seem to be specific to schizophrenia but, rather, reflect a more general group of “prognostic systems” in human functioning, at least in terms of their importance for psychiatric disorder. There is some evidence (Cassel 1964) that in fact suggests these factors may also operate in certain physical illnesses, such as tuberculosis.

But it is important to go one step further. If, as has been claimed, “diagnosis is prognosis”—and this seems to be an important consideration in defining a diagnostic or disease entity—then it is valuable to take these prognostic findings and return to the concept of schizophrenia.

In an earlier paper (Strauss and Carpenter 1974b), we speculated that schizophrenia as defined by Kraepelin was a diagnostic concept bringing together several processes that are actually relatively independent. Three such processes were suggested: (1) “positive symptoms” (Jackson 1887), such as specific hallucinations and delusions; (2) “negative symptoms” (Jackson 1887), such as flat affect, which we have suggested may be indicators of established chronicity; and (3) level of social relations functioning. Perhaps a fourth process, level of work functioning, should also have been included. Whatever one chooses to call schizophrenia—a group of positive symptoms, a group of negative symptoms, poor capacity for social relations, or some combination of these and perhaps other characteristics—it is important not to lose sight of the relatively independent basic processes that appear to be involved. These processes, each possibly with its own etiological, diagnostic, and treatment implications, may need to be dealt with separately in considering patients diagnosed as schizophrenic.

Although such an approach to schizophrenia may appear unduly complex, more and more frequently investigators are turning to multidimensional models of psychopathology. These models are attractive because they surpass any composite set of diagnostic criteria in providing impressive relationships with the growing body of descriptive, etiologic, and treatment information that is becoming available. For example, Bowers (1974) has suggested three dimensions useful for understanding the complex relationships found in phenomenological data describing the schizophrenic experience. Cooper and Sartorius (1977) have used a multidimensional orientation in considering cultural factors and schizophrenia, and Rutter, Shaffer, and Shepherd (1973) have recommended a multidimensional framework for classifying childhood psychiatric disorders.

It is interesting that of all the more traditional diagnostic approaches, Schneider’s (1959) is most readily adaptable to a multisystem model since it limits itself primarily to certain “positive” symptoms of schizophrenia, leaving the other important processes to be covered separately. A multiaxial diagnostic model (Strauss 1975) can be used to provide a framework for integrating such a number of processes into a multidimensional diagnostic system.

What is the prognosis of schizophrenia? Although over half of outcome variance cannot be accounted for by even the best prognostic methods, the best answer to the question of prognosis clearly depends on what one calls schizophrenia. However, whatever choice is made about diagnosis, it seems most accurate to conceptualize prognosis not as a unitary entity but as several semi-independent processes.

Summary

Three main ways of viewing schizophrenia exist that have different prognostic, practical, and conceptual implications. The mixed cross-sectional/longitudinal view of Kraepelin and others states essentially that there is a disease, schizophrenia, that can be identified by considering both characteristic symptoms and course. Prognosis in the disorder so defined is guarded, but because of the composite diagnostic criteria used,
the characteristics most important for relating to outcome remain unknown. The second view defines schizophrenia primarily in terms of the cross-sectional symptom picture alone. It has been shown empirically that defining a disorder in this way has relatively limited prognostic implications. The third approach identifies schizophrenia in terms of several “axes,” such as type of schizophrenic symptoms, their duration, the person’s social relations, and his work function. These axes are viewed as relatively independent processes with somewhat different determinants, implying the need for different specific treatments. The authors believe this last view is the one most supported by currently available data.

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