schizophrenia and sensitivity to the family environment*

Julian P. Leff

For some years now, vigorous attempts have been made to link both the origin and the course of schizophrenia with features of the patient's social environment. The techniques used range from large-scale epidemiological surveys to intensive clinical studies of a handful of cases. Both kinds of approach have their serious limitations and are probably better viewed as complementary than as mutually exclusive. Indeed the recent studies on which this review is focused employ a combination of epidemiological methods and techniques derived from indepth interviewing. As we shall see, this alliance has proved both practical and productive.

The earliest epidemiological approach to schizophrenia was the classical study of Faris and Dunham (1939). Their finding that new cases of schizophrenia were clustered in the "zone in transition" around the center of the city of Chicago has been repeated in a number of other cities. In particular, Hare (1956) found the same distribution of schizophrenia in the British town of Bristol and showed that it was associated neither with overcrowding nor with the ratable value of the land, but with a high proportion of single-person households. These findings could be explained in at least two ways: Either the social conditions in the center of the city predispose to schizophrenia, or segregation takes place, and emotionally isolated people move into the lodging house areas. The social drift hypothesis received some support from Goldberg and Morrison (1963), who demonstrated a drift down the socioeconomic scale in young male schizophrenics that must have occurred before the onset of their illness. This finding has little bearing on geographical mobility, but Dunham (1965) rejoined the fray and showed convincingly in a study of the city of Detroit that the concentration of schizophrenics in the central roominghouse areas was entirely due to people who had moved there in the preceding 5 years. He built up a picture of the mobile preschizophrenic who leaves his family of origin in a small town or rural area and migrates to the city where he lives on his own in roominghouses and within a few years suffers a first attack of schizophrenia. This much has been established laboriously with epidemiological techniques but leaves unanswered the question of what it is that prompts the preschizophrenic to leave his family and seek the solitude of the twilight zones of the city. The question remains without a satisfactory answer, but the recent work that will be presented below at least provides some clues.

This work has been carried out in the Medical Research Council's Social Psychiatry Unit at the Institute of Psychiatry over the past 15 years by mixed teams of psychiatrists, psychologists, and sociologists. A concern with the reliability of diagnosis has been central to the work of the Unit and led to the development of a semistructured psychiatric interview, the Present State Examination (Wing, Cooper, and Sartorius 1974). A computer program, Catego, is used to process data from the Present State Examination and provide a standardized diagnosis. By these means a diagnosis of schizophrenia can be made with high reliability, even if its validity remains to be established.

Studies of schizophrenia by members of the Unit have followed two main lines. One line of research has been concerned with processes of institutionalism, social treatment and rehabilitation, initially in psychiatric hospitals but subsequently in the other component

*Reprint requests should be addressed to the author, at MRC Social Psychiatry Unit, Institute of Psychiatry, De Crespigny Park, London SE5 8AF, England.
The ratings were made from interviews with relatives of the patient's behavior and symptoms and the quality of interpersonal relationships. The interviews were conducted shortly after the patient's hospital admission with a first attack or relapse of schizophrenia. A high interrater reliability was achieved on the above measures both in live interviews and from tape recordings. Critical comments are rated on the basis of content and tone of voice. For example, a statement made in a matter-of-fact way that the patient lay in bed all day would not be sufficient to rate as a critical comment. Only if it was uttered in a critical tone of voice would it be rated as such. The total number of critical comments made during the interview is recorded. Hostility involves not just a critical remark about behavior but either a generalization of criticism or a rejection of the patient as a person. For example, "he lies in bed all day and is the laziest person in the world." Hostility is rated on a four-point scale. Warmth is judged mainly from tone of voice and is rated on a six-point scale. Emotional overinvolvement refers to unusually marked concern about the patient and is rated on the basis of feelings expressed in the interview itself and of behavior reported outside it. It includes obvious and constant anxiety about minor matters such as the patient's diet and the time he comes home in the evening as well as markedly protective attitudes. It is rated on a six-point scale.

These measures were included in a followup study of 101 schizophrenic patients (Brown, Birley, and Wing 1972). The progress of these patients, all of whom lived with relatives, was followed for 9 months after their hospital discharge to determine the proportion relapsing with a recurrence of schizophrenic symptoms. Relapse defined in this way is not necessarily coincident with readmission. Relapse was found to be significantly associated with three of the measures of expressed emotion: critical comments, hostility, and emotional overinvolvement. There was no direct relationship with warmth. In fact hostility rarely occurred in the absence of critical comments, and so it added little to the predictive value of the measures of expressed emotion. On the basis of the scores on critical comments (seven or more), marked overinvolvement, and hostility, families were assigned to high or low expressed emotion (EE) groups. The relapse rate of patients from high EE homes was 58 percent compared to 16 percent from low EE homes ($p < .001$).

This association can be explained in two ways. It is possible that the emotional atmosphere prevailing in high EE homes affects the schizophrenic patient adversely. Alternatively it could be that the more disturbed...
the patient's behavior, the more likely are the relatives to respond with criticism, hostility, and overinvolvement and the more likely the patient is to relapse. In this interpretation there is no direct causal link between expressed emotion and relapse. Brown, Birley, and Wing distinguished between these alternative hypotheses by controlling for previous work impairment and behavioral disturbance. Work impairment was defined as unemployment or, for housewives, marked handicap in carrying out domestic duties for at least 3 months out of the preceding 2 years. A behavioral disturbance score was calculated from the ratings made on the various symptom scales at the relatives' interview, with only behavior rated as occurring in the 3-month period preceding admission being included. When these two factors were controlled for, the statistical association between expressed emotion and relapse was not much reduced. On the other hand, when expressed emotion was controlled for, the association between impairment/disturbance and relapse almost disappeared. These findings support a direct link between relatives' expressed emotion and recurrence of schizophrenia in the patient. There was no difference in respect to these results between patients living with parents and those living with spouses.

Two-thirds of the patients took one of the major tranquilizing drugs for most of the followup period. For patients living in low EE homes there was very little difference in relapse rates whether they took drugs or not. Patients living in high EE homes derived some benefit from drugs, but the difference in relapse rates did not quite reach statistical significance.

Another variable examined in this study was the amount of social contact patients made with their relatives. It is reasonable to suppose that reducing social contact in a high EE home might diminish the harmful effects. At the time of the followup interview a time budget of a typical week was constructed. A distinction was made between patients who spent more than 35 hours per week in face-to-face contact with their relatives and those who spent less than that time with their relatives. It was found that the amount of contact made no difference for patients living with low EE families but a very significant one for those in high EE homes.

These findings seemed of such theoretical and practical importance for the study of schizophrenia that it was considered essential to attempt to replicate them. This has now been done (Vaughn and Leff 1976a) in a project that not only repeated the earlier study but extended it to include a comparison group of patients suffering from depressive neurosis. These patients were included to determine whether the susceptibility to the emotional environment demonstrated in schizophrenic patients is peculiar to this diagnostic group or is shared by other psychiatric patients. The techniques of the earlier study were mastered and adopted wholesale with one exception, the family interview. This was rather a cumbersome instrument that could take as long as 4 or 5 hours to administer and usually required two visits to the relative's home. Since critical comments contributed most to the index of expressed emotion, we wondered whether their distribution throughout the interview would allow us to shorten it. We studied the distribution of critical comments in a representative sample of interviews from the study of Brown, Birley, and Wing (1972) and discovered that they were largely concentrated in the first hour of the interview (Vaughn and Leff 1976b). The three sections of the interview that deal with psychiatric history, irritability and quarreling, and clinical symptoms in the 3 months before admission accounted for two-thirds of all critical remarks. It was difficult to tell whether topic or primacy of questioning was responsible for this finding, since these same three sections were also the first three areas covered in almost every interview. No relationship was found between total number of critical comments and length of interview ($r = .08$).

These results indicated the possibility of using a shortened interview in which the areas most likely to produce any criticism were given priority in the sequence of questioning. The present abbreviated version takes from 1 to 2 hours to administer. Findings from our recent study (Vaughn and Leff 1976a) support the use of the abbreviated interview, since once again critical remarks bore only a negligible relationship to the interview's length ($r = .24$) and tended to occur during the first hour of the interview. Furthermore, the mean number of critical comments made by the relatives in the recent study (8.2) did not differ significantly from the figure for the earlier study (7.9), despite the great difference in average length of interview between the two studies.

In our study, relatives of 37 schizophrenic patients and 30 depressed patients were interviewed, and all the patients were followed up for 9 months after being
discharged from the hospital. The patients represented consecutive admissions to the Maudsley and Bethlem Royal Hospitals from southeast London who satisfied certain diagnostic criteria. The diagnoses were checked by processing data from the Present State Examination through the Catego program (Wing, Cooper, and Sartorius 1974). In brief, the schizophrenic patients either had first-rank Schneiderian symptoms or else delusions and hallucinations in the absence of affective symptoms. The depressed patients exhibited affective symptoms in the absence of delusions and hallucinations. Some demographic and clinical data are given in table 1. All but 2 of these 67 patients were personally revisited by the psychiatrist at the end of 9 months or at the time of relapse. As in the original study, the husband or wife of a married patient was always interviewed in a home visit shortly after the patient's key admission. In cases where an unmarried patient lived with both parents, mother and father were interviewed on separate occasions. Ratings of expressed emotion were made from the abbreviated interview in exactly the same way that Brown and his colleagues had made them using the original interview.

Among the schizophrenic group the mean number of critical remarks did not differ significantly between parents (7.0) and spouses (11.9). In no case was hostility found in the absence of high criticism, so it was not used in assigning relatives to the high EE group. Emotional overinvolvement was found in several parents but in no spouse. In the 1972 study, a threshold of seven critical comments was used to divide the families into high and low EE groups of roughly equal size. Using this same cutoff point, and including relatives who showed marked emotional overinvolvement in the high EE group, we obtained a significant difference in relapse rates. A close inspection of the data revealed, however, that a cutoff point of six critical remarks gave a better separation in terms of relapse rates. In view of the arbitrary nature of the original cutoff point, we felt justified in making an adjustment of this kind.

Using the lower criticism threshold, we assigned 21 families to the high EE group and 16 to the low EE group. Ten patients from high EE homes relapsed (48 percent) compared with one from a low EE home (6 percent). As in the 1972 study, there was a significant association between high expressed emotion and relapse (Fisher's exact test, p = .007). We were also concerned with the issue raised by Brown and his colleagues of whether the patients' disturbed behavior mediated the link between relatives' expressed emotion and relapse of schizophrenia. We investigated it in a different way by constructing a correlation matrix of all the factors possibly linked to relapse, and then carrying out a stepwise regression analysis. The matrix showed that relatives' expressed emotion was more closely related to relapse \( r = .45 \) than any other factor considered, including lack of preventive drug treatment \( r = .39 \). Behavioral disturbance (based on total score) was correlated negatively and at a nonsignificant level with relapse \( r = -.20 \) and positively and nonsignificantly with expressed emotion \( r = .24 \). When behavioral disturbance was partialled out, the correlation between expressed emotion and relapse was actually raised \( r = .52 \). This is conclusive evidence that for schizophrenic patients the relationship between expressed emotion and relapse is independent of behavioral disturbance. There is still the possibility, however, that an intervening variable, as yet unidentified, may account for the relationship between expressed emotion and relapse. This objection cannot be satisfactorily dealt with by further statistical analyses because the vital factor may not have been measured. The problem can only be resolved by experimentally manipulating relatives' expressed emotion and demonstrating an alteration in relapse rates in the predicted direction, an approach that will be discussed below.

### Table 1. Demographic and clinical characteristics of the sample

<table>
<thead>
<tr>
<th></th>
<th>Schizophrenic patients</th>
<th>Depressed patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td><strong>Mean age, males</strong></td>
<td>28.1</td>
<td>44.8</td>
</tr>
<tr>
<td><strong>Mean age, females</strong></td>
<td>36.6</td>
<td>35.5</td>
</tr>
<tr>
<td><strong>Time since first onset of condition:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>1-5 years</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>&gt; 5 years</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td><strong>First admission (percent)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Marital</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Other relative</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>
We also examined the possibility that features of the patients' clinical state might be predictive of relapse. A comparison was made between those schizophrenic patients who relapsed and those who remained well in terms of the clinical items rated from the Present State Examination at key admission. Only one item was related to outcome at the 5 percent level of significance: Grandiose delusions were more common in the patients who relapsed. As only 38 comparisons were being made, however, this could well be a chance finding, and furthermore it has no obvious clinical significance. Neither any other clinical variable measured nor any feature of the psychiatric history added to the value of the index of expressed emotion for predicting relapse. This is in accord with findings in the 1972 study.

Two other factors found to be of prognostic importance in the 1972 study were examined—maintenance therapy with phenothiazines and amount of face-to-face contact with relatives. We applied a rather more stringent criterion to drug taking than did Brown, Birley, and Wing (1972). We only counted a patient as being on regular maintenance therapy if he or she had taken drugs continuously for at least 8 of the 9-month follow-up period. By this criterion, 21 of the 37 schizophrenic patients (57 percent) were taking regular maintenance therapy. Four patients were maintained on chlorpromazine, two taking 150 mg daily and two 300 mg daily. One patient on the lower dosage and one on the higher dosage were taking an additional 4.5 mg of haloperidol daily. Ten patients were maintained on trifluoperazine at dosages ranging from 10 mg to 30 mg daily. Seven patients were receiving injections of 25 mg fluphenazine, four at fortnightly intervals and the remainder monthly. Perhaps because of our stricter criterion, we found a significantly lower relapse rate for patients on drugs, both in the total group of schizophrenics and in those from high EE homes; a similar trend had failed to reach significance in the 1972 study. No protective effect of drugs could be demonstrated in the low EE group.

Face-to-face contact was estimated from a time budget and as low as that of patients from low EE homes (subgroups 1 and 2). It is remarkable and reassuring that there should be such a close correspondence in results of two studies carried out 10 years apart by different groups of investigators. Because of the similarity in design, methodology, and findings we felt justified in pooling the data from the two studies. This produced a total group of 128 schizophrenic patients, allowing a more detailed analysis of the outcome of subgroups. In particular we were interested in the ways in which the variables with prognostic significance—relatives' expressed emotion, maintenance therapy, and face-to-face contact—might be additive. This analysis is presented in figure 1.

It is evident from the relapse rates that patients in high EE homes who spend much time with their relatives and are not protected by maintenance therapy (subgroup 6) have a very poor outcome. The relapse rates drop considerably if one of the two protective factors is operating (subgroups 4 and 5). The prognosis is best of all, however, for patients living in high EE homes but protected both by reduced contact and by maintenance therapy. For this group of patients (subgroup 3), the relapse rate drops to 15 percent, a rate significantly lower than that for patients with neither of the protective mechanisms operating ($p < .001$), and as low as that of patients from low EE homes (subgroups 1 and 2).

The relapse rates in the 6 subgroups in figure 1 provide valuable information about the preventive role of maintenance therapy. It is clear from the relapse rates in subgroups 1 and 2 that drugs make no difference for patients living in low EE homes. They are effective, however, in reducing the relapse rate in patients from high EE homes, especially in those who spend less than 35 hours per week with their relatives. Maintenance therapy and reduced face-to-face contact evidently exert an additive effect in protecting patients in high EE homes against relapse. This finding has important implications both for the practical management of schizophrenia and for a theoretical understanding of the condition. The practical considerations will be discussed first.

It is important to emphasize that these results apply only to schizophrenic patients living with their relatives. We cannot say anything about the determinants of relapse for patients living on their own. In a study of acute schizophrenia (Leff and Wing 1971) a series of 116 patients admitted consecutively to a group of hospitals was examined. Two thirds of these patients were living with relatives, and about one half of these families would fall into a high EE group, which gives us an idea of the size of the problem. If the problem of recurrent relapse is to be tackled, the first step is to identify the
high EE families, where the patients are particularly at risk. The family interview originally developed by Brown and Rutter (1966) is too lengthy to be used as a clinical tool, but in its shortened version (Vaughn and Leff 1976 b) it could be administered routinely by a member of the clinical team as part of the assessment of schizophrenic patients. Work is currently being undertaken to develop a course of training in the use of this interview.

Once the patient at high risk of relapse has been identified, the question arises of what preventive measures should be adopted. Clearly every effort should be made to ensure that the patient receives regular phenothiazine medication. This will certainly reduce the relapse rate but will not completely neutralize the effect of the emotional environment (see figure 1).

In addition attempts should be made to increase the social distance between patient and relatives. A number of approaches seem possible (see figure 2).

The most drastic and effective measure would be to remove the patient from his home altogether and place him in a hostel, group home, or other accommodation. This action may sometimes prove unacceptable to patient and relatives, and in the case of a husband and wife would perhaps be unjustifiable. If the patient is to remain in the home and is unemployed, a solution would be to find a job or a place in a day center or day hospital. Some schizophrenics are incapable of open employment, however, and may even be unsuitable for sheltered work or at least unwilling to attend daily. Consideration of our material showed that even a patient in full employment could be in high face-to-face contact

---

Figure 1. Nine-month relapse rates of total group of 128 schizophrenic patients

Low EE = 71 patients
High EE = 57 patients

---

Subgroups

1. On drugs 12%
2. Not on drugs 15%
3. On drugs 15%
4. Not on drugs 42%
5. On drugs 53%
6. Not on drugs 92%

---

Adapted, with permission, from Vaughn and Leff (1976 a). Copyright: British Journal of Psychiatry.
(more than 35 hours per week) with relatives. For these reasons it may be necessary to work with patient and relative in order to alter their pattern of social interaction. Here one might anticipate encountering resistance from one and probably both partners. It is no accident that some schizophrenic patients are in intimate social contact with their relatives despite its harmful effects. The tightness of this bond, particularly when the relative is an overinvolved parent, is another feature of its pathological nature, and it may prove very difficult to sunder.

So far, only means of increasing the social distance between the patient and relative have been considered. It could be argued that such an approach is relatively superficial and that one really needs to tackle the relative’s critical or overinvolved attitude directly. This is an even more daunting prospect, since we know very little about the effect of therapeutic intervention on such attitudes. In a further analysis of our material, Vaughn examined the detailed content of relatives’ critical comments. She found that less than a third of all critical remarks concerned behavior that was related to the patient’s symptoms, despite the severe behavioral disturbance and work impairment shown by many patients in the months preceding their admission to the hospital. The majority of critical remarks were about longstanding personality traits of the patient, and reflected a poor relationship between patient and relative before the onset of the episode of illness. The same grievances, usually having to do with lack of communication and the amount of affection, warmth, and interest shown by the patient, came up again and again.

It is reasonable to suppose that poor relationships of long standing are more difficult to alter than adverse reactions to acute symptoms of illness. However, behavioral techniques have recently been applied in these situations and offer some hope of influencing even psychotic behavior (Liberman et al. 1974). Any program set up to prevent relapse in schizophrenia should include the whole range of available techniques, such as family therapy, casework, and behavior modification. These should be employed either separately or in combination in an experimental framework that will enable the most effective approach to be identified. There have been previous attempts to do this (e.g., Goldberget al., in press) but their goal has been a general one, to normalize the patients’ behavior. The aims of a program based on the work presented would be very specific: to reduce critical and overinvolved attitudes in relatives, and to modify the patients’ behavior that stimulates these. Such a program would be arduous and time consuming, but the potential rewards for a large proportion of schizophrenic patients living in the community more than justify it.

From a theoretical point of view the work on relatives’ expressed emotion raises fundamental questions about the nature of social reactivity in schizophrenia. One of the questions our study was designed to answer was whether the sensitivity to the emotional atmosphere of the home is specific to schizophrenic patients. Unfortunately we cannot give a complete answer because it was impossible to match the relatives of the two diagnostic groups by type of household. Whereas there was a preponderance of parental households in the schizophrenic group, only one of the 30 households containing a depressed patient was parental. With one exception the remainder of the depressives’ households were marital. We suspect this is partly because a depressed patient is much more likely than a schizophrenic to leave the parental home and marry; it also may reflect the link between depression and loss of parents. As emotional overinvolvement is virtually confined to parents we could not compare the role of this factor in the two diagnostic groups. But we were able to look at the part played by critical comments, and here there was an evident difference. When we used the same cutoff

Figure 2. Increasing social distance between patient and relative
point of six comments for the depressive group that we used for the schizophrenic group, there was no difference in relapse rates in the high and low EE households. When the cutoff point was lowered to two critical remarks, however, a significant difference in relapse rates emerged—67 percent in the high criticism homes and 22 percent in the low criticism homes. This indicates that the depressed patients in our sample are even more vulnerable to the effects of relatives' criticism than are the schizophrenics. Furthermore, the amount of face-to-face contact between depressed patients and their relatives did not relate to relapse patterns. Hence reactivity to critical relatives is not specific to schizophrenia, but the threshold for relapse appears to be. The protective effect of reduced social contact also seems to be specific to schizophrenia.

A further question arises of whether this protection is a secondary effect, resulting from the patient's being employed or having an active social life outside the home, or whether it is a consequence of active social withdrawal by the patient. A measure of social withdrawal was available from the family interview and its association with reduced face-to-face contact was examined. We found a significant link between these two factors in the total group of schizophrenics, but it was more marked in the patients from high EE homes ($p < 0.05$) than in those from low EE homes ($p = .07$). This suggests the intriguing possibility that schizophrenic patients may monitor their own sensitivity to the emotional atmosphere and employ social withdrawal as an effective means of protecting themselves against too much emotional stimulation. One patient in an earlier placebo-controlled trial of maintenance phenothiazine treatment (Leff and Wing 1971) gave anecdotal support to this suggestion. She was a single woman, age 27, who had experienced three acute episodes of schizophrenia. After she had recovered from the third attack, she entered the trial of maintenance therapy and was assigned to the placebo group. She remained free of symptoms throughout the trial year, so that at the end of this period it was proposed to her that her medication be discontinued. She was unaware that she was receiving a placebo and protested that although she might appear well to the doctor, she did not consider herself to be cured. She said she had noticed that when she entered a social gathering she began to feel tense and that this feeling disappeared when she withdrew. As a result she had cut down her social activities to a negligible amount.

What is the internal gauge schizophrenic patients may be using to monitor their sensitivity to social stimulation? The concept of arousal, measurable in terms of psychophysiological variables provides a possible explanation for this. There is evidence from past studies (Venables and Wing 1962) that arousal levels may be abnormally high in socially withdrawn, chronic schizophrenics. It seems worth pursuing this line of research in more acute patients, and a project is currently in progress involving the schizophrenic patients from our recent study (Vaughn and Leff 1976a). Measures of arousal, such as the galvanic skin response (GSR) and the pulse rate, are being made in the patients' homes in the absence of and then in the presence of the key relative. The level of expressed emotion of the relative is already known to us, although not to the research worker carrying out the measurements, so that he is blind to the quality of relative-patient relationship. This study has not yet been completed but preliminary examination of the GSR tracings shows some marked effects that occur when the relative enters the patient's presence. The interpretation of this finding must wait until all the data are collected and analyzed, but this approach already looks promising.

If it can be established beyond doubt that social withdrawal by schizophrenic patients is an effective protection against excessive social stimulation, this may provide the answer to the motive force that impels the preschizophrenic to leave his family and move to the roominghouse areas of the cities where he can be on his own. It must be recognized, however, that it is unjustifiable to assume that what is true of the patient with established schizophrenia necessarily applies to the preschizophrenic before the first onset of the illness. For the argument to be convincing it would be necessary to show that the families from which the mobile preschizophrenic departs are characterized by a high level of expressed emotion. There has been no study comparing families of mobile and nonmobile schizophrenics, but there is some evidence on this point. Hirsch and Leff (1975) in an extensive search through the literature on abnormalities in the parents of schizophrenics found that a small number of points were fairly well supported by experimental evidence. One of these is that the mothers of schizophrenic patients showed emotional overinvolvement in their attitudes toward the children before they became overtly ill. Here is a link between a component of the relative's expressed emotion after
the development of frank schizophrenia and the emotional attitude of the parent to the preschizophrenic. It does not, however, have a direct bearing on the mobility of the person who will later develop schizophrenia. It will be necessary to study expressed emotion in the families of mobile and nonmobile patients with a first onset of schizophrenia before we can fully account for the pioneering finding of Faris and Dunham (1939)—the first link in a laboriously forged chain of scientific argument.

References


The Author