

## TELEPATHY IN MENTAL ILLNESS: DELUGE OR DELUSION?

BRUCE GREYSON, M.D.<sup>1</sup>

The belief that one can read others' minds has long been considered a symptom of psychosis, despite reports in the parapsychological literature of veridical telepathy. All patients admitted to an inpatient psychiatric unit were screened for paranormal beliefs, and those claiming telepathic abilities were tested in a free-response ESP task. Eighteen per cent of the inpatient population claimed telepathic abilities; of the nine patients who completed the task, none performed above chance expectations. Higher frequencies of paranormal experiences than those reported previously in the psychiatric literature were attributed to the context of the study. Schneider's first rank symptoms and a belief in telepathy discriminated schizophrenics more reliably than other paranormal experiences. Possible psychodynamics of delusions of telepathy were discussed in view of the predominance of women and younger men reporting them, as were the possible effects of such research on patients' delusions.

The idea that one can read minds is commonly assumed by psychiatrists to be based on wishful thinking and poor reality testing. The fact that these ideas are seen in psychotic states is well established, yet there exists a body of scientific material supporting the validity of telepathic phenomena. The question then arises: to what extent are psychotic patients' claims of extrasensory influences a manifestation of their distorted recognition of reality, and to what extent might they be veridical?

Kraepelin (30), in defining the disease he called dementia praecox, described as one of the more characteristic features of this condition the feeling that the patient knows the thoughts of other people. Bleu-

ler (2), in revising the concept of dementia praecox and renaming it schizophrenia, considered the feelings of thoughts being heard and transmitted to be almost pathognomonic.

Schneider (45), in his widely used system for the diagnosis of schizophrenia based on the identification of "first rank symptoms," did consider such beliefs to be pathognomonic. Of the 11 first rank symptoms, any one of which in the presence of a clear sensorium was thought to justify a diagnosis of schizophrenia, seven involved ego boundary disturbances which could be described as experiences of extrasensory communication: thought insertion, in which the patient experiences thoughts imposed upon his passive mind by some external agency; thought broadcasting, in which the patient experiences his own thoughts as escaping into the external world where they may be experienced by others; thought withdrawal, in which the patient describes his thoughts as being withdrawn by some external force; somatic passivity, in which the patient experiences bodily sensations imposed on him by some external agency; "made" feelings, in which the patient experiences feelings which are imposed on him by some external force; "made" impulses, in which the patient is overcome by impulses imposed on him by some external agency; and "made" voli-

<sup>1</sup> Assistant Professor and Director of Acute and Emergency Psychiatric Services, Department of Psychiatry, University of Virginia Hospital, Charlottesville, Virginia 22901.

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tional acts, in which the patient experiences his actions as being completely under the control of an external influence.

In recent years some psychiatrists (*e.g.*, 16) have questioned why it is that so many persons labeled with terms such as "paranoid" complain of symptoms of paranormal influence, implying that there may be some truth behind these claims which are generally considered delusional. Others (*e.g.*, 33, 51) have maintained that psychiatrists who consider conviction in extrasensory powers to be a symptom of illness do their patients a disservice if they disregard the evidence for the reality of the phenomena.

Freud (19) suggested that psychic regression may lead not only to the belief in extrasensory perception, but to the actual experience of it. He hypothesized that telepathy may have been a primitive means of communication replaced by sensory signals in the course of evolution, but still available to persons regressed to preverbal states.

Ehrenwald (11-14) elaborated this concept of ESP being a phenomenon of regression. He explained the traces of primary process mentality and the spatial and temporal anomalies in paranormal processes by postulating that telepathy is developed and normally operative during the symbiotic period of life, and hence will always carry the imprint of that stage of development. This theory accounts not only for the regressive and irrational qualities of extrasensory phenomena, but also for our tendency to deny the reality of telepathy, in that it holds the threat of what Freud called the "return of the repressed."

Ehrenwald suggested that the merger of the egos of the symbiotic child and his mother bridges the psychological gap which normally exists between individuals, allowing for direct telepathic communication. However, as the child progresses toward the stage of separation-individuation, his ego boundaries become sharply delineated and he erects barriers to defend his mental processes from those of his mother. Just as the child's acquisition of language supplants the necessity for extrasensory perception, his progressive def-

inition of the confines of his own ego supplants the possibility of telepathic communication. Those individuals who fail to establish independent egos, Ehrenwald proposed, might remain vulnerable to continued telepathic intrusions. Such failure of the ego to differentiate also leaves one vulnerable to being called schizophrenic.

Ullman (54) proposed a teleological explanation for telepathic abilities in schizophrenics. He speculated that to protect himself from unpredictable threats to his isolation, the schizophrenic might learn to acquire data paranormally in conjunction with his excessive vigilance operations. Additionally, a number of psychiatrists have reported that incidents of spontaneous ESP in therapeutic situations often involve schizoid or schizophrenic patients (33, 54).

An assumption underlying many hypotheses about ESP in schizophrenia is that many schizophrenic symptoms are caused by the inability of the schizophrenic ego to control the deluge of extrasensory perceptions which are assumed to influence everyone. However, in healthier individuals some unspecified repressive mechanism prevents these telepathic influences from reaching consciousness. Presumably, schizophrenia involves a breakdown or deficiency of ego mechanisms which fail to screen out this deluge of extrasensory material, which the schizophrenic must then handle by the development of secondary symptoms such as catatonic stupor or elaborate paranoid delusions. Thus we have two conflicting views of the role of ESP in mental illness: is it a deluge which induces illness, or is it a delusion, a result of illness?

One approach to this question has been to investigate the possibility of veridical ESP in the mentally ill. However, attempts to study psi abilities in hospitalized mental patients have met with varying degrees of success, and have yielded contradictory data.

In the first such published study, Shulman (47) tested 250 male patients (although only 141 were able to complete the testing) with ESP cards. The results for his entire sample were nonsignificant, as were

those for each individual patient. However, data from his 12 manic-depressive, depressed patients were statistically above chance performance. Shulman reported a pilot study by van Wiemokly in which epileptic psychotics scored lower than paranoid schizophrenics, yet higher than involuntal melancholics. Although all of these results were nonsignificant, the rank order of diagnostic categories and degree of success were very close to those obtained by Shulman himself.

Price (1), using ESP cards, tested 50 patients and obtained positive results, although her data were not published in detail for 13 years. She found significant effects when patients were asked to get as many hits as possible ( $p = 10^{-28}$ ) and when patients were asked to get as few hits as possible ( $p = 10^{-4}$ ). She reported that cooperative patients scored higher than apathetic patients, who in turn did better than irritable ones. There were no significant differences in overall score among diagnostic categories, although her manic-depressive, depressed patients scored highest on the high aim test, whereas her manic-depressive, manic patients scored best on the low aim test. The only group of patients who failed to score in the requested directions were the 10 diagnosed as having paranoid dementia praecox.

Urban (55) tested 216 patients using ESP cards both before and after treatment by electroshock, insulin shock, narcoanalysis, or leukotomy. Although he cautioned that his experimental precautions were not strict, he reported positive results with a chance probability of less than one in a billion. His patients performed better after treatment than before, and scored highest after electroshock therapy.

West (57) first tested 25 unselected psychotics using ESP cards. The total deviation from chance results was not significant; however, two paranoid patients who had incorporated the experimenter into their persecutory delusions both produced scores significantly below chance expectations. West then selected 22 paranoid psychotics and subjected them to a similar testing procedure, in an attempt to replicate this finding. The results were nonsig-

nificant but slightly above, rather than below, chance expectations. He then tested six paranoid patients after conspicuously observing their group psychotherapy in order to maximize their persecutory feelings toward him, but again he obtained a nonsignificant positive deviation.

Humphrey (27), after studying Urban's procedures, tested 28 inpatients with ESP cards before and after electroshock therapy. Although her depressed and neurotic patients performed at chance levels, her schizophrenic patients consistently scored high. Contrary to Urban's findings, Humphrey's schizophrenics did better before shock ( $p < .001$ ) than after ( $p = .017$ ).

Zorab (59) tested 16 patients with ESP cards. His data were not significant either for the entire group or for any individual diagnostic category.

Summarizing the published studies, only those of Price and Urban obtained extrachance performance from the entire sample of mental patients, and neither reported significant differences among different diagnostic categories. Of these two studies, Urban warned that his experimental precautions were lax, and Price's failure to meet stringent experimental requirements precluded publication of her data until, 13 years later, her work was judged to be of sufficient interest to report despite its weaknesses (1).

Of the remaining four studies, Shulman reported success only with manic-depressive, depressed patients; Humphrey reported success only with schizophrenics; and West and Zorab each found no consistently higher scoring group. Price reported that patients with paranoid dementia praecox consistently scored in the undesired direction; West's first series also yielded below chance performance from paranoid patients, but two follow-up series to test this specific point failed to provide confirmation. Urban found treatment, especially electroshock therapy, to enhance ESP scores; Humphrey obtained higher scores before shock treatment than after.

Thus the studies published to date provide no replicable evidence for the effect of treatment or the influence of diagnosis on ESP, or even for the presence of paranor-

mal abilities in hospitalized mental patients. However, there were reasons to suspect that different procedures for selecting and testing patients might yield a more productive means for evaluating psychotic patients' claims of extrasensory phenomena.

Although patients have been classified in the published studies as to diagnosis, therapy, and attitude, no attempt had ever been made to single out those patients who claimed to have paranormal experiences. West (57) referred to this common belief of psychotics in his report, but neither he nor any other investigator had used such a conviction as a criterion for inclusion as an experimental subject. In her study of shock therapy and ESP, Humphrey also tested 11 patients who did not receive electroshock, some of whom were "patients whom the attendants asked us to test because of some particular feature of interest in their case histories" (27, p. 263). However, Humphrey did not indicate whether this implied belief in ESP, nor did she report the performance of these specially selected patients separately. She also mentioned that two of her four schizophrenics suffered delusions of persecution by telepathy, but, although she presented the data of the four schizophrenics individually, she did not specify which two complained of spontaneous telepathic intrusions. Since one reason for investigating paranormal abilities in psychotics was their frequent claim of telepathic influence, it seemed fruitful to select for study those patients who made such claims, a procedure which had never before been reported.

Another difficulty in the studies published to date was the ubiquitous use of "ESP cards," a deck of 25 cards, five each of five simple designs: a cross, a square, a circle, a star, and wavy lines. Although various techniques had been used, in all cases patients were asked to guess the sequential order of the cards in a concealed deck. "Restricted-response" targets such as ESP cards have the advantage that *a priori* probabilities of correct responses can be calculated (*e.g.*, with ESP cards, 1/5), thereby facilitating statistical analysis; they also have the disadvantage that they

cannot indefinitely sustain the interest of even the most attentive subject. West (57) reported that psychotics commonly deal with such restricted-response targets by systematized guessing, *e.g.*, "five circles, then five waves, then five stars, then five crosses, and then five squares," or more commonly, a set sequence, *e.g.*, "cross, square, star, wave, circle," repeated over and over in the same order. Nevertheless, because of the ease of analysis, every study so far has utilized ESP cards with psychotics.

The alternative situation, in which no restrictions are imposed on the subject's responses, has been found better suited to sustain the subject's interest (39). Although such "free-response" targets cannot be assigned *a priori* probabilities, and therefore necessitate more involved statistical evaluation, they are less likely to induce rigid calling patterns which would compete with responses on the basis of ESP. Furthermore, Stuart *et al.* (50) found that subjects who scored high in free-response situations tended to score low in restricted-response situations and *vice versa*. The theoretical and empirical reasons for suspecting paranormal abilities in psychotics both suggest that, if free-response and restricted-response situations indeed measure different abilities, then psychotic patients should be more successful with free-response targets.

The present study was designed to investigate whether psychotic patients who claimed to have paranormal abilities could produce extrachance results on a controlled ESP test. This study differed from previous investigations of this topic in two respects: it was the only study to use free-response material as targets, in order to minimize interference from systematized response patterns typical of psychotic behavior; and it was the only study to look for ESP specifically in that subgroup of patients who claimed extrasensory capacities. The study was not restricted to schizophrenic patients because of suggestions that other psychotic patients also may exhibit telepathic abilities (47, 54) and the difficulty often experienced in clinically differentiating schizophrenia from other

psychotic states and because a patient's belief in his extrasensory experiences was felt to be a more cogent criterion than his diagnosis. Since patients' degrees of conviction in ESP varied along a continuum, it was felt that using a patient's expectation of positive results on the described experimental task as an operational definition of telepathic belief would maximize the yield of the study.

#### METHODS

*Subjects.* All patients entering the psychiatric service of the University of Virginia Hospital during a 3-month period were given an open-ended interview deal-

ing with their paranormal experiences, comprised of a systematic inquiry into 25 specific items (Table 1) including: eight questions from a mail survey designed to assess the extent of psychic experiences in the general population (37); eight questions designed to elicit Schneider's first rank symptoms of schizophrenia relevant to paranormal experiences (3); eight questions taken from the MMPI F Scale (Validity Scale), which consists of items that even very sick people rarely admit to; and one question inquiring into the patient's claims of telepathic abilities. All patients who claimed the ability to read minds under the stated experimental conditions

TABLE 1  
*Initial Interview Items*

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1. Do you ever dream about something, and later learn that what you dreamt really happened? (Mail survey question: veridical dreams)
  2. Do you ever have a dream about someone, and later learn that that person had the same dream as you did, at the same time? (Mail survey question: dreams "shared" with others)
  3. Do you ever have the feeling that you have been some place before, when actually it is the first time? (Mail survey question: *déjà vu*)
  4. Do you ever have the feeling that something you couldn't know about has just happened or is about to happen, and later learn that you were right? (Mail survey question: clairvoyance, precognition)
  5. Can you read other people's minds? (Screening question for study)
  6. Is someone trying to influence your mind? (MMPI F Scale item)
  7. Are thoughts put into your mind which you know are not your own, but come from elsewhere? (First rank symptom: thought insertion)
  8. Does someone have control over your mind? (MMPI F Scale item)
  9. Do you ever feel that you are made to want things that you would not want yourself? (First rank symptom: "made" affect or impulse)
  10. Does some force other than you yourself make you do or say things that you do not intend, as though you were a robot without a will of your own? (First rank symptom: "made" volitional acts [a])
  11. Is someone else making your movements and actions for you without your intention? (First rank symptom: "made" volitional acts [b])
  12. Does it feel at times that someone is making you do things by hypnotizing you? (MMPI F Scale item)
  13. Is it impossible at times for you to keep from stealing or shoplifting something? (MMPI F Scale item)
  14. Do you sometimes feel as if you must injure either yourself or someone else? (MMPI F Scale item)
  15. Are you ever possessed by a spirit or do you ever communicate with the dead? (Mail survey question: spirit possession, contact)
  16. Do evil spirits possess you at times? (MMPI F Scale item)
  17. Do you ever have a clear impression of seeing, hearing, or being touched by someone who is not present? (Mail survey question: apparitions)
  18. Do you ever feel that someone or something is touching you, but when you look there is nobody there? (First rank symptom: somatic passivity)
  19. Do you ever have the distinct feeling that your mind is traveling outside of your physical body? (Mail survey question: out-of-body experience)
  20. Does your soul sometimes leave your body? (MMPI F Scale item)
  21. Are there persons who are trying to steal your thoughts and ideas? (MMPI F Scale item)
  22. Do you ever seem to hear your thoughts spoken aloud, almost as if someone nearby could hear them? (First rank symptom: audible thoughts)
  23. Do you ever feel as if your thoughts were being taken away, so that your mind is a complete blank? (First rank symptom: thought withdrawal)
  24. Do you ever feel your thoughts being broadcast or transmitted, so that everyone knows what you are thinking? (First rank symptom: thought broadcasting)
  25. Have you ever been the subject of someone else's psychic experience or psychic dream? (Mail survey item: subject of others' psi)
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were studied, unless they were unable or unwilling to cooperate, or unless their therapists considered participation in the study contraindicated. Subjects were tested as soon after admission as they displayed adequate concentration.

*Materials.* Targets were 50 black and white copies of magazine pictures, arranged in 10 sets of five pictures each, selected for maximal differences within each set. The 50 pictures were selected for their emotional content, and various sets contained pictures with sexual, aggressive, tranquil, frightening, or humorous themes.

*Procedure.* The purpose, procedure, and possible effects of participation in the study were explained to each subject, and written consent from the patient and oral consent from the patient's therapist were obtained.

Subjects were tested one at a time. Each subject participated in five daily sessions, each lasting about 10 minutes. Two experimenters with opposite expectations of the experimental results alternated acting as "sender," the same experimenter serving as "sender" for all five sessions with an individual subject. Each session started with a review of the procedure and relaxation of the subject in the experimenter's office. The designated experimenter for that subject then entered an adjoining office, leaving the subject alone, and by a previously determined random process, selected one of the 10 picture sets and one of the five pictures in that set to be the target for that trial. The experimenter then concentrated on the target picture for 5 minutes, attempting to "send" the target to the subject by ESP, while the subject tape recorded any images or impressions he had during that 5-minute period, attempting to describe the target picture.

At the end of the 5 minutes, the experimenter placed all five pictures in the set used in an envelope in a previously determined sequence and gave the envelope to the subject. The subject was then left alone while he rated each of the five pictures on a 101-point scale as to how closely it matched his impressions. He was not told which picture was the target, was told to

try to make each of his ratings independent of the others, and was permitted to replay but not alter his tape recording. When he had completed his ratings, the session concluded with feedback as to the correct target and an opportunity for the subject to discuss any aspect of the session or to ask further questions.

After each session, the tape recording was given to another experimenter who was not familiar with the target pool to transcribe for use in the ratings by the blind judges.

*Judging.* In addition to the ratings by each subject, the tape transcripts were also rated by two independent judges. These judges were blind as to the identity and diagnosis of the participating patients. After each trial, each judge was given a transcript of the taped productions for that trial and the set of five pictures that was used for that trial. The judge was not told which of the five pictures was the target, but was asked to rate the correspondence of each of the five pictures to the transcript on a 101-point scale; he was told to try to make each of his ratings independent of the others. The same procedure was followed through all five trials for each subject. Each judge worked independently, and was not told the ratings of the other judge or of the patient.

*Analysis.* Results of the ESP testing were analyzed by two methods. A *Z*-score for each trial was computed by subtracting the mean of the five ratings for that trial from the rating given the target picture, and dividing by the standard deviation of the five ratings. Under null conditions, these scores should have a mean of 0. Assuming that these *Z*-scores were approximately normally distributed, the significance of their deviation from 0 was assessed by a *t*-test.

The five ratings for each trial were also converted to ranks, and it was then determined by a binomial test whether the number of "direct hits" (*i.e.*, ranking of 1) differed significantly from the number expected by chance.

Two methods were used because the binomial analysis was considered to be more sensitive to ESP performance which was

outstanding on some trials but very poor on others, whereas the *t*-test of *Z*-scores would be more sensitive to ESP performance which was more uniformly successful but less spectacular.

#### RESULTS

*Initial interview.* During the 3 months in which the study was conducted, a total of 92 patients were admitted to the psychiatric service of the University of Virginia Hospital, all of whom cooperated with the initial interview. The 92 patients subscribed to an average of 5.6 of the 25 items dealing with paranormal experiences in the initial interview; this included a mean of 1.9 out of the eight items designed to elicit Schneider's first ranked symptoms of schizophrenia, a mean of 2.4 of the eight items taken from the mail survey of psychic experiences, and a mean of 1.1 of the eight items from the MMPI F Scale. As seen in Table 2, schizophrenic patients subscribed to an average of 8.4 of the 25 items, organic psychotic patients to an average of 5.3 items, other psychotic patients to an average of 5.8 items, and nonpsychotic patients a mean of 4.4 items.

Table 3 shows the sensitivity of the 25 interview items in detecting schizophrenic patients. The percentage of schizophrenics subscribing to each item is compared to the percentage of nonschizophrenic, nonorganic patients subscribing to the same item. For each of Schneider's first rank symptoms, the percentage of schizophrenics acknowledging that symptom was greater than the percentage of nonschizophrenics.

Schizophrenic patients also subscribed more frequently to each of the items from the mail survey of psychic phenomena,

with the exception of visual, auditory, or tactile apparitions, a phenomenon more frequently reported by nonschizophrenics. Schizophrenic patients further subscribed to each of the MMPI F Scale items more frequently than did nonschizophrenics, with the exceptions of two questions regarding compulsive behavior.

Forty per cent of the schizophrenic sample admitted to having telepathic abilities, as contrasted to 13 per cent of the nonschizophrenic, nonorganic patients.

The correlation coefficient for the entire sample of 92 patients between items eliciting first rank symptoms and mail survey items was .69; between items eliciting first rank symptoms and MMPI F Scale items, .76; and between mail survey items and MMPI F Scale items, .64. These three correlation coefficients were each significant at  $p < .001$ .

*Subjects.* Of the 92 patients interviewed for this study, 17 (18 per cent) claimed the ability to read minds under the experimental conditions. From the identifying data presented in Table 4, it can be seen that the 17 patients included nine females and eight males; 14 of the subjects were white, three black. Neither the sex nor the race ratio among subjects differed significantly from that among the entire inpatient population. Nine of the 17 patients received clinical diagnoses of schizophrenia upon discharge from the hospital; by contrast, only 23 per cent of the entire sample of 92 patients received this clinical diagnosis.

The male subjects comprised the eight youngest of the 17 subjects, with a mean age of 21.3 years; the nine eldest subjects were all female, with a mean age of 35.2 years. The age difference between the two

TABLE 2  
*Mean No. of Interview Items Subscribed to by Patients*

Patient Group	First Rank Symptoms ( <i>N</i> = 8)	Mail Survey Items ( <i>N</i> = 8)	MMPI F Scale Items ( <i>N</i> = 8)	Telepathy Item ( <i>N</i> = 1)	Total ( <i>N</i> = 25)
Schizophrenics ( <i>N</i> = 20)	3.3	3.0	1.7	0.4	8.4
Organic psychotics ( <i>N</i> = 4)	2.5	1.8	1.0	0.0	5.3
Other psychotics ( <i>N</i> = 15)	1.9	2.7	0.9	0.3	5.8
Nonpsychotics ( <i>N</i> = 53)	1.3	2.1	0.9	0.1	4.4
All patients ( <i>N</i> = 92)	1.9	2.4	1.1	0.2	5.6

TABLE 3  
Per Cent of Patients Subscribing to Interview Items

	Schizo- phrenics (N = 20)	Nonschizo- phrenic, Nonorgan- ics (N = 68)
First rank symptoms:		
Thought insertion	65	22
Thought withdrawal	55	16
"Made" volitional acts [a]	50	25
Thought broadcasting	40	10
Audible thoughts	40	9
"Made" volitional acts [b]	30	16
Somatic passivity	25	24
"Made" affect or impulses	25	21
Mail survey items:		
<i>Déjà vu</i>	65	51
Clairvoyance, precognition	60	46
Veridical dreams	55	28
Apparitions	30	34
Subject of others' psi	30	21
Out-of-body experience	25	19
Spirit possession, contact	20	15
Dreams "shared" with others	15	12
MMPI F Scale items:		
Mind influenced by others	45	16
Mind controlled by others	30	15
Evil spirit possession	30	15
Soul leaves body at times	25	4
Compulsion to injure self or others	15	25
Thoughts stolen by others	15	4
Hypnotized to do things	10	7
Compulsion to steal or shoplift	0	7
Telepathy item:		
Read minds under study conditions	40	13

sexes within the subject population was significant ( $\chi^2 = 13.26$ ;  $df = 1$ ;  $p < .001$ ). The age difference between the two sexes among the entire inpatient population was not significant. The mean age of 21.3 years (S.D. = 8) among the male subjects was significantly lower than the mean age of 36.9 years (S.D. = 16.25) among the inpatient males who did not claim telepathic abilities ( $t = 2.67$ ;  $df = 40$ ;  $p < .01$ ). The mean ages of females who claimed telepathic abilities (35.2 years, S.D. = 9) and females who made no such claims (44.4 years, S.D. = 18.5) were not significantly different.

*ESP performance.* Of the 17 patients who claimed to be able to read minds under the described experimental conditions, five were unwilling or unable to participate in the study, three attempted but

could not complete the five testing sessions, and nine completed the entire study. Table 5 presents the mean *Z*-score over five trials and the total number of direct hits for five trials for each subject, as rated by the subject and by the two independent judges. None of the mean *Z*-scores was significantly different from 0, and none of the direct hit totals was significantly different from 1, the total expected by chance in five trials.

#### DISCUSSION

*Initial interview.* Schizophrenic patients acknowledged more items from first rank symptoms, from mail survey questions, and from MMPI F Scale items in the initial interview than did any other category of patients; nonpsychotic patients acknowledged the smallest number of items. Schizophrenics and organic psychotic patients admitted to more items from those designed to elicit first rank symptoms than from any other source; other psychotics and nonpsychotics subscribed to more items from the mail survey of psychic experiences than from any other source. In general, however, items from various sources—first rank symptoms, mail survey questions, and MMPI F Scale items—were not selectively subscribed to by different diagnostic groups within the inpatient population; the high correlation coefficients suggest that patients' responses tended to be positive or negative to all items, regardless of the source.

The percentages of schizophrenics acknowledging Schneider's first rank symptoms in the present study were generally higher than those previously reported (*e.g.*, 3, 35); comparable data for nonschizophrenics have not been published. In a pre-Schneiderian study of "commonly accepted schizophrenic symptoms," Page *et al.* (36) found no significant difference between the frequencies of such symptoms among schizophrenics and normal subjects. Schizophrenics in that study admitted to symptoms analogous to Schneider's first rank symptoms approximately as often as in the present study; nonschizophrenics, however, acknowledged such symptoms generally more often than did



TABLE 4  
*Patients Claiming Telepathic Abilities*

Patient	Age	Race	Sex	DSM-II Diagnosis (5)	RDC Diagnosis (48)
A	14	Black	Male	Adjustment reaction of adolescence	Other psychiatric disorder
B	19	White	Male	Schizophrenia, latent; depressive neurosis	Schizo-affective disorder, depressed
C	20	White	Male	Schizophrenia, paranoid	Schizophrenia, paranoid
D	21	White	Male	Schizophrenia, paranoid	Schizophrenia, paranoid
E	21	White	Male	Schizophrenia, paranoid	Schizophrenia, paranoid
F	23	White	Male	Schizophrenia, latent; depressive neurosis	Minor depressive disorder with borderline features
G	25	Black	Male	Schizophrenia, paranoid	Schizophrenia, paranoid
H	27	White	Male	Anxiety neurosis	Generalized anxiety disorder with borderline features
I	28	White	Female	Reactive psychosis, unspecified; hysterical personality	Unspecified psychosis with borderline features
J	30	Black	Female	Manic-depressive illness, manic	Manic disorder
K	31	White	Female	Schizophrenia, chronic undifferentiated	Schizophrenia, confusional turmoil
L	34	White	Female	Manic-depressive illness, depressed	Major depressive disorder
M	34	White	Female	Schizophrenia, schizo-affective, depressed	Schizo-affective disorder, depressed
N	37	White	Female	Depressive neurosis	Minor depressive disorder with borderline features
O	38	White	Female	Depressive neurosis	Minor depressive disorder with borderline features
P	42	White	Female	Schizophrenia, paranoid	Schizophrenia, paranoid
Q	43	White	Female	Manic-depressive illness, manic	Manic disorder

TABLE 5  
*Results of ESP Tests<sup>a</sup>*

Subject	Mean Z-Score (Expected = 0)		Direct Hit Total (Expected = 1)	
	Subject-rated	Judge-rated (mean)	Subject-rated	Judge-rated (mean)
B	-0.07	-0.58	2.0	0.0
D	-0.45	-0.29	0.0	0.5
E	+0.04	+0.43	1.0	1.8
F	-0.02	-0.01	1.0	1.0
H	-0.26	+0.07	0.0	1.6
I	-0.56	-0.28	0.3	1.0
L	+0.34	+0.07	1.7	0.5
N	+0.04	+0.68	0.8	2.0
P	-0.21	+0.24	1.0	0.9

<sup>a</sup> No values significant at  $p = .05$ .

schizophrenics, and much more frequently than in the present study.

The percentage of nonschizophrenic, nonorganic patients subscribing to items from the mail survey of psychic experiences was similar to that reported in the general and college student populations.<sup>2</sup> The percentages of both schizophrenic and

nonschizophrenic patients admitting to MMPI F Scale items were generally higher than the published norms (6).

The discrepancies between symptom frequencies reported in the present study and those reported elsewhere probably derive from the detail and context in which symptoms are sought. Studies based on subject-rated questionnaires (*e.g.*, 36, 37) have generally yielded higher symptom frequencies, while those based on interviewers' ratings of symptom presence (*e.g.*, 3, 35) have tended to produce lower frequencies. The higher frequencies derived from subject-rated sources reflect the documented finding that self-scored check lists circumvent the guardedness which patients often exhibit in psychiatric interviews, and often yield less defensive responses, particularly in regard to bizarre experiences (4, 24, 49). However, high self-rated frequencies may also reflect the subject's lack of awareness that a subtle feature missing from his "symptom" may be essential to its definition; first rank symptoms are often falsely rated as present even by psychiatrists not alert to such subtleties (48).

<sup>2</sup> Palmer, J., and Dennis, M. A community mail survey of psychic experiences. Unpublished manuscript, 1974. Some of these data have been published (37).

For research purposes, it is generally preferable to risk false negatives, as with interviewer ratings, than false positives, as with subject ratings (48). In the present study, although false positives caused by misunderstanding were minimized by using interviewer's ratings of each item after open-ended inquiry, symptom frequencies were comparable to those reported previously only from self-rated questionnaires. Patients may have been less defensive in the present study because the interviews from which these data were derived were clearly not part of their psychiatric evaluation. The patients interviewed were usually aware that the interviewer's role on the ward was solely as investigator of paranormal claims and not as psychotherapist or as psychiatric diagnostician.

The interview items eliciting first rank symptoms dealing with possible paranormal experiences were highly sensitive to schizophrenia, with between 25 and 65 per cent of schizophrenic patients subscribing to individual symptoms. The diagnostic usefulness of an item, however, is dependent upon specificity as well as sensitivity. Page *et al.* (36), while confirming that "commonly accepted schizophrenic symptoms" were in fact frequent in schizophrenia, reported such symptoms to be equally as common in a normal group: Carpenter *et al.* (3) reported one or more first rank symptoms, presumably pathognomonic for schizophrenia, in 23 per cent of manic-depressive patients and in 9 per cent of nonpsychotics. In the present study, between 9 and 25 per cent of nonorganic, nonschizophrenic patients acknowledged individual first rank symptoms referring to possible paranormal events.

The usefulness of an item in discriminating schizophrenia, or the frequency of a diagnosis of schizophrenia given the presence of a certain symptom, is dependent in part on the frequency of schizophrenia in the population as a whole. In the present study, 23 per cent of the inpatient population was diagnosed as schizophrenic. The frequency of schizophrenia among those patients admitting to first rank symptoms ranged from 24 per cent for somatic passivity to 57 per cent for audible thoughts.

Clearly, even though the presence of first rank symptoms was positively correlated with schizophrenia, it was not pathognomonic.

Questions from the mail survey of psychic experiences were also highly sensitive to schizophrenia, with between 15 and 65 per cent of schizophrenics subscribing to individual items. However, the specificity of mail survey questions was much lower than for first rank symptoms; the frequency of schizophrenia among patients subscribing to these items ranged from 21 per cent of those admitting to seeing, hearing, or feeling apparitions (less than the frequency of schizophrenia in the inpatient population) to 37 per cent of those acknowledging veridical dreams.

Possible paranormal items taken from the MMPI F Scale, a scale consisting of items only rarely admitted to, were least sensitive to schizophrenia, with between 0 and 45 per cent of schizophrenics subscribing to individual items. The frequency of schizophrenia among patients acknowledging F Scale experiences ranged from 0 per cent of those admitting to compulsions to steal or shoplift to 63 per cent of those who felt that their souls sometimes leave their bodies.

In summary, the initial interviews yielded frequencies of paranormal experiences higher than those previously found in interviewer-based reports, probably due to the subjects' perception of the interviewer as parapsychological investigator rather than as psychiatrist. Although equally sensitive to schizophrenia, first rank symptoms proved to be more specific to schizophrenia than did questions from the mail survey of psychic experiences, because of the higher percentage of nonschizophrenics subscribing to the latter.

*Subjects.* Seventeen patients (18 per cent of the inpatient sample interviewed) claimed the ability to read minds under the stated experimental conditions. These subjects included 40 per cent of the schizophrenics in the inpatient sample and 13 per cent of the nonorganic, nonschizophrenic patients. On the basis of self-rated questionnaires, Page *et al.* (36) reported that 33 per cent of schizophrenics and 38

per cent of normals claimed telepathic abilities.

Nine of the 17 patients claiming ESP (53 per cent) received *DSM-II* diagnoses (5) of schizophrenia upon discharge from the hospital; one of these nine failed to meet research diagnostic criteria (48) for schizophrenia or schizo-affective disorder. Even with this exclusion, the prevalence of schizophrenia among patients claiming telepathic abilities was approximately twice that among the inpatient population. Belief that the patient could read others' minds thus proved to be one of the most discriminative items in the initial interview for schizophrenia. Specific details of patients' beliefs that they could read minds did not differentiate qualitatively the telepathic claims of schizophrenics from those of nonschizophrenics; however, this may prove to be a fruitful area of research with a larger sample.

The marked difference between the ages of male and female subjects was unexpected, and apparently due to the unusual youth of the male subjects. Female patients who claimed ESP abilities did not differ in age from those who denied such claims, while male patients who believed they could read minds were significantly younger than those who had no such belief.

The age-sex interaction may be explained if one assumes that the belief that one can receive telepathic messages is predicated upon acceptance of body boundary intrusions. Fisher (18) reported that women, in concert with their socially determined orientation toward being penetrated, are relatively receptive to and not anxious about stimuli from an external source which bypass conscious perception. Men, by contrast, are threatened by such messages which inexplicably evade their usual perceptual processes, and react to them with anxiety and resistance to the intrusion. It might be predicted on that basis that belief in one's telepathic experiences might be largely restricted to women; such was the case in the present study for patients over 27 years of age. The seemingly anomalous finding of eight males between 14 and 27 who claimed to

have ESP might be related to hallucinogenic drug use in young male patients, a factor which is known to alter the perceived body boundary (18). In the present study, three of the eight male subjects admitted to major hallucinogen use and the remaining five acknowledged at least occasional marijuana use; by contrast, of the nine female subjects, only one admitted to major hallucinogen use and one to marijuana use, the remaining seven denying any psychogenic drug use other than alcohol. The age-sex interaction among patients claiming telepathic abilities is thus consistent with the hypothesis that acceptance of extrasensory intrusions must follow a relaxation of defenses of the body boundary, such as by socialization into the feminine gender role or hallucinogenic drug use. Such a hypothesis appears to be testable and merits further investigation.

*ESP performance.* None of the nine subjects who completed the ESP testing performed significantly above chance expectations, as measured either by mean *Z*-scores over their five trials or by number of direct hits over five trials. Although this sample is smaller than those used in previous studies, the consistent lack of extrachance performance with all nine subjects is sufficient to justify the conclusion that the present experimental procedure did not elicit evidence of telepathy in patients who believed that it would. The data provide no reason to suspect that a larger sample might produce different results.

The most parsimonious interpretation of these data is that the subjects' claims of telepathic abilities were delusional. However, the parapsychological literature contains both theoretical and empirical considerations which suggest alternative explanations of the lack of extrachance results in the present study.

Ehrenwald (14) did not consider experimental failure to demonstrate ESP to be critical to his hypothesis that schizophrenics suffer from telepathic intrusions. He argued that the schizophrenic's potential sensitivity to ESP might be canceled out in such a test by his reaction formations and other ego defenses against recognizing paranormal influences. An extension of

this argument might lead one to assume that those schizophrenics most plagued by telepathic influences might demonstrate the strongest resistance to recognizing them, and thus might be the least likely to make claims of extrasensory abilities. If this were true, then using telepathic claims as a criterion for inclusion in the present study, a refinement intended to optimize the yield of extrachance performance, may have in fact selected for study those patients least likely to have had extrasensory experiences. That is, it may be that nontelepathic schizophrenics may develop grandiose delusions of ESP, whereas those schizophrenics with true telepathic powers might develop instead the reassuring delusion that they do *not* have ESP. This hypothesis would suggest that future investigations into the relationship between telepathy and mental illness might use belief in ESP as a criterion for *exclusion* from the study.

Ullman (53) distinguished spontaneous telepathy from the controlled telepathy of the experimental setting, suggesting that the two may be inversely related in psychiatric patients. In clinical situations, he proposed, a patient's characterological handicaps set limits on his sensory communication, and he must resort to telepathic exchanges, whereas in the laboratory, the limits are imposed by experimenters rather than by the patient's personality, and his mental illness might handicap his ability to adapt to the situation. This distinction echoes a common theme throughout the parapsychological literature, that motivation may be critical to ESP performance. No attempt was made in the present study to quantify subjects' motivation to succeed, but it can be assumed that the experimental procedure lacked the urgency and self-preservation impetus which is generally hypothesized to underlie telepathic functioning in mental illness. It is possible that patients making veridical claims of ESP on the basis of crisis-activated telepathic abilities could not succeed in the present study because of the lack of an activating crisis. If telepathy in mental illness does indeed occur only in severe crises, then it may be a phenome-

non which cannot be elicited in a controlled experimental setting.

Similarly, if ESP in mental illness is related, as has been suggested above, to severe regression, then it is conceivable that patients who experience telepathic intrusions in the more disorganized and regressive stages of psychoses may not show extrasensory abilities in the structured paradigm of the present study. Although an attempt was made to test each patient as soon as possible after admission, some patients with telepathic claims were too distractible or too agitated upon admission to cooperate with the testing procedure. It may be argued that by the time such patients showed sufficient concentration to be tested, their telepathic sensitivities had dissipated. A briefer, nonverbal free-response task would facilitate the study of subjects in a more regressed state than the present protocol; it may be worthwhile to study psychotic patients longitudinally throughout their illness with a task requiring less concentration and goal directness.

In contrast to the hypothesis that subjects in the present study may not have been sufficiently threatened or disorganized to manifest ESP, there is substantial evidence that telepathy in experimental settings may be enhanced by relaxation (39). While an attempt was made to induce a "psi-conducive" relaxed state in subjects by a period of acclimatization and rest prior to each testing session, subjects' degree of relaxation was not measured, and in fact some expressed considerable anxiety about their performance throughout the procedure. It might be argued that this anxiety interfered with the patients' ESP in the present study.

Failure to demonstrate paranormal effects has at times been attributed to "psi-missing," an extensively documented phenomenon in which the designated target is missed more frequently than would be expected on the basis of chance (39). Psi-missing, which implies accurate ESP used to avoid the target, has been associated with frustration, ambivalence, and conflictual situations, and was suspected in the below chance performance of paranoid pa-

tients studied by Price (1) and West (57). However, none of the patients in the present study produced the significant below chance performance that would result from consistent psi-missing. Intermittent psi-hitting and psi-missing could explain the chance results of the present study, but this becomes an untestable hypothesis unless one can specify before testing some expected pattern of hits and misses. Although there are infinite permutations in this possibility, the present data provide no obvious evidence of such a pattern.

The failure of patients claiming telepathic abilities to demonstrate such talents in the present study must also be viewed in the light of reports that experimental subjects are not solely responsible for their performance, but that experimenters' expectations can influence the outcome of a study (52). In the present case, two experimenters with diametrically opposing expectations as to whether or not psychiatric patients might demonstrate ESP alternated in serving as "sender" for different subjects. Since none of the patients scored above chance, clearly the experimenter with positive expectations did not induce significant ESP in more subjects than did the experimenter with negative expectations. Neither was the mean Z-score of all patients tested by one experimenter different from that of all patients tested by the other.

Although differential attitudes of the two experimenters did not seem to influence the ESP test results, there has been a recent accumulation of evidence that experimental outcomes may also be dependent upon the expectations of other participants (29, 58)—in the present study, for example, the tape transcriber and the two judges. The increasingly utilized interpretation of paranormal events as holistic phenomena rather than as individual experiences would attribute the chance results of the present study not to the patients who claimed ESP abilities, but to the interactional system which included the patients, the experimenters, the psychiatric ward in which the study was conducted, and the readers of this report.

In summary, the failure to produce ex-

trachance performance in the present study may be attributable in part to a variety of factors: selection of patients claiming ESP and therefore possibly less vulnerable to it; absence of a crisis situation which may be necessary to activate telepathy in mental illness; inability to test patients in the most regressed phases of their illness; lack of a psi-conducive relaxed state in the subjects; intermittent psi-missing; and negative paranormal influence of the experimenters or others. Having considered these paranormal interpretations of the present data, there remains the alternative conclusion that the subjects failed to perform above chance because their telepathic claims were not veridical.

*Psychodynamics of telepathic claims.* Although 18 per cent of the inpatient population claimed they could produce extra-chance results in the described experimental situation, none of those tested demonstrated a realistic basis for such a belief. The question then arises: what psychological factors may have contributed to their erroneous claims? It may be noted that, while most psychiatrists who have addressed this question considered such claims to be delusional, their psychodynamic formulations may apply as well to nondelusional claims of ESP. That is, whether a patient holds a delusional belief in his telepathic powers or merely claims to have ESP in expectation of some secondary gain, the same intrapsychic factors may be relevant in the genesis of his claim. In fact, even if patients' telepathic claims proved to be veridical, one might still ask what psychological factors contribute to their conviction in phenomena not generally considered real.

Relaxation of body boundary defenses was discussed above as a necessary condition for belief in ESP. Such a loosening of defenses might result from a functional attempt at conflict resolution or from a structural deficit in reality testing.

Defective reality testing was mentioned by Hitschmann (25) as an underlying condition on which psychodynamic factors may be superimposed to produce belief in telepathy. Ehrenwald's theory of "minus

function" (13) assumed some physiological deficiency to be prerequisite to ESP. Melges *et al.* (34) reported distortions of cognitive time sense to be a critical factor in the genesis of delusions of paranormal connectivity. Learoyd (31), on the other hand, attributed telepathic claims not to a psychic deficiency, but to an exceptionally efficient power of imagery, which, directed biologically to anticipate the future and unrecognized because it functions unconsciously, gives the illusion of ESP.

Many authors have seen the blurred body boundaries of infants as a model for the weakened boundary defenses of patients claiming telepathic abilities. Freud (19), Deutsch (7), Eisenbud (15), Hitschmann (25), Levin (32), and Saul (43) all attributed telepathic claims in part to a functional regression to infantile developmental stages characterized by narcissistic craving for omnipotence of thought or symbiotic fusion between the self and external objects. Parapsychologists' elaborate experimental precautions and mathematical terminology were interpreted by Hollos (8) and Servadio (46) as attempts to control incompletely sublimated infantile omnipotence fantasies, as was skeptics' refusal to accept the parapsychological literature. In a similar vein, the incomplete psychological development of primitive cultures, often characterized by belief in paranormal processes (8, 19, 25, 43), has suggested that societies which accept telepathic claims may suffer from regression to primitive states (10).

The psychoanalytic interpretation of telepathic belief as a regression to the symbiotic stage in which the individual's emotional experiences fuse with the external world (7) has more recently been expressed in existential terms as an attempt by the isolated individual to escape the anguish of his solitude by belief in extrasensory communication (9). Gardner (22) proposed that man's existential impotence in the face of calamity may lead to the assumption of delusional guilt as a means of gaining control; by a similar mechanism, the ultimate aloneness of the individual in the face of inadequate sensory communication may lead to the assump-

tion of delusional telepathic powers as a means of gaining contact with others.

The interpretation of telepathic claims as a defense against existential anxiety implies the introjection of others' thoughts in an attempt to share responsibility. The opposite has also been described: belief in telepathy resulting from projection of one's own forbidden thoughts in an attempt to deny responsibility for them. Freud (20), Hitschmann (25), and Saul (43), noting that most alleged telepathic messages related to disasters, attributed belief in ESP in many cases to the projection of suppressed hostile impulses, which may be more acceptable as telepathic intrusions than as one's own unconscious wishes. Freud (20), Gotten and Patten (23), and Peerbolte (38) described patients whose telepathic claims resulted from their projections of repressed incestuous desires.

Freud (19) and Katzenelbogen (28) regarded belief in telepathy as a flight from an unpleasant world of reality into a more exciting or satisfying world of fantasy. Freud (21), Ellson (17), and House (26) interpreted the dramatic increase in psychical research in wartime as a compensatory effort to escape reality. Servadio (46) and Vessey (56) attributed telepathic claims in part to a need to compensate for individual social or personal deficiencies.

Deutsch (7) and Saul (43) attributed belief in telepathy to unconscious perceptions heightened by intensified identification, often with someone overtly expressing traits that the alleged telepath is attempting to deny in himself.

Roheim (42), Kielholz (40), and Vessey (56) ascribed claims of ESP to a yearning to possess secret knowledge, ultimately rooted in the primal scene fixation.

In summary, telepathic beliefs have been attributed to several alternative psychodynamic mechanisms: defective reality testing, exceptional imagery, regression to narcissistic omnipotence or to symbiotic fusion, escape from existential isolation, projection of unacceptable aggressive or sexual impulses, flight from reality and compensation for personal deficiencies, unconscious perceptions accompanied by identification, and a desire to acquire for-

bidden knowledge. These varied hypotheses on possible intrapsychic origins of belief in telepathy are not mutually exclusive; several of the authors cited have described multiple mechanisms contributing to the telepathic claims of patients. Published case studies suggest that belief in telepathy considered as a symptom seems to serve different functions in various patients, and indeed may be overdetermined in many. A profitable area of future research may be the psychometric study of ego defenses and conflicts among patients with telepathic claims as contrasted to matched patients without such claims.

*Effects of the study.* Those who treat the mentally ill have repeatedly drawn attention to the potential hazards of parapsychological research, particularly with psychiatric patients, in terms of reinforcing delusional ideation and escape from reality (e.g., 26, 28). Parapsychologists themselves have stressed the risks of irresponsible experimentation on these phenomena, which may be perceived or experienced as psychotic symptoms (e.g., 41, 44, 56).

In the present study, eight of the 17 patients who believed they could read minds were either unwilling or unable to cooperate with the full testing procedure. Although only two of these patients expressed fear of an exacerbation of their mental illness if they participated in the study (while none of their therapists expressed such concerns), it is possible that awareness of such a risk may have been a factor in all refusals to participate.

Each of the nine patients who did complete the study, and each of their therapists, were interviewed at the time of discharge from the hospital in regard to the effects of the study on the patient's belief in his telepathic abilities, on his presenting symptoms, and on the course of his therapy. One patient credited the study with a therapeutic influence on his ability to test reality; his therapist independently stated that the patient's delusional system began to weaken during his participation in the study. None of the other eight patients or therapists reported any effects, positive or negative, on the patients' telepathic claims, illness, or treatment. There

was thus no evidence that an investigation of their erroneous beliefs in telepathy encouraged their psychiatric symptoms. It is possible, however, that those patients vulnerable to such influences excluded themselves from the study by their refusal to participate.

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