

A COMMON THREAD UNDERLYING BELIEF IN THE PARANORMAL, CREATIVE PERSONALITY, MYSTICAL EXPERIENCE AND PSYCHOPATHOLOGY

BY MICHAEL A. THALBOURNE AND PETER S. DELIN

ABSTRACT: This study began as an investigation of belief in the paranormal: We collated a battery of pencil-and-paper tests, with the intention of measuring degree of belief in, and ostensible experience of, the paranormal, degree of creative personality, mystical experience, and aspects of psychopathology (magical ideation, hypomania, and extent of experience of symptoms resembling mania and depression). This battery of tests was administered to 241 university students, 86 manic-depressives, and 38 schizophrenics. For the overall measure of belief in the paranormal, there were no differences between groups, but among students (and for the most part in the clinical groups as well) it correlated positively to a significant degree with creative personality, mystical experience, and all the psychopathological variables. We therefore subjected the student data to principal components analysis. A single factor emerged, which we tentatively name transliminality because we interpret it as measuring the extent to which the contents of some preconscious (or "unconscious" or "subliminal") region of the mind are able to cross the threshold into consciousness (in its sense of "awareness"). There they may form the basis of paranormal belief, the experiencing of apparent psychic phenomena, some aspects of creativity, mystical experience, and psychotic-like symptoms. A high degree of transliminality would appear to imply a largely involuntary susceptibility to, and awareness of, large volumes of inwardly generated psychological phenomena of an ideational and affective kind. Its correlates include religious experience, an interest in dream interpretation, and proneness to hallucination. Should subsequent research validate the model implied by this labeling, we might come to see belief in, and ostensible experience of, the paranormal as representing one type of consequence among many of a mind possessing high transliminality.

In recent years the term paranormal has been used in an increasingly broad sense—rather too broad, we have argued (Thalbourne & Delin, 1993). For current purposes we take it to refer simply to any of three controversial classes of phenomena that are claimed by some to exist: extrasensory perception (ESP), psychokinesis (PK), and life after death. A good many people believe in such phenomena and even claim to have experienced manifestations of them, whereas others, particularly social scientists, reject any notions of this kind as error or wishful thinking. Though the present questionnaire-based study was set up to explore a

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large number of research possibilities, the initial aim was to contribute further to the growing literature on what psychological characteristics distinguish those who believe in or claim experience of the paranormal from those who do not. To anticipate our results, we believe that we have serendipitously made something of a breakthrough in our understanding of the findings in this area by discovering significant linkages between the topic of paranormal belief and other psychological phenomena, including mystical experience, creative personality, and a number of variables of psychiatric interest. But first we shall review the studies that have been conducted relating paranormal belief to each of these variables considered individually.

Mystical experience is generally described as an experience of ecstatic oneness with creation (or with God) and as being characterized by a profound sense of peace and an apparent illumination about the meaning of existence (Thalbourne, 1991). Significant positive correlations have been reported between paranormal belief or experience and (a) single-item measures of mystical experience (Palmer, 1979; Thalbourne, *in press*), (b) various specially developed measures of mystical experience (Kohr, 1980), (c) Hood's 1975 Mysticism Scale (Shafer, 1982), and (d) the positive mystical experience scale of the Assessment Schedule for Altered States of Consciousness (van Quekelberghe, Altstotter-Gleich, & Hertweck, 1991). We therefore predicted that in the present study paranormal believers would report a greater degree of mystical experience than those who did not report them.

Creativity could be characterized as a process in which two or more preexisting elements—whether they be colors or forms, musical notes or words, or ideas in general have been put into a relationship that is arrestingly unexpected, a relationship that may variously be regarded as aesthetically appealing, mind-expanding, interesting, and even useful, depending on the context. Creative personality consists of various personality characteristics which, to quote Davis, Peterson, and Farley (1974, p. 33), “regularly haunt the literature describing the creative person.” Three studies have examined the relationship between paranormal belief and creative personality, and all found that persons with stronger belief in the paranormal tend to have more of the characteristics of a creative person: Joesting and Joesting (1969) found this to be true in their studies using the Torrance Creative Motivation Inventory (Torrance, 1963); Davis et al. (1974) consistently found this in their data, using Torrance's (1971) “What Kind of Person Are You?” questionnaire and his Personal-Social Motivation Inventory, as well as ratings of actual creativity; and Moon (1975) found that visual arts students showed

significantly higher belief in ESP than did students in other disciplines. We therefore predicted that a corresponding relationship of this kind would also be observed in the present study.

Richards claims that “there are proportionately fewer psychics in insane asylums than there are of anti-psychic people” (1991, p. 51). In contrast—and though mediums of course are not necessarily psychic—Marvin (1874) recommended that “spiritualistic mediums be hospitalized and given strong purges to cure them of their ‘mediomania’ ” (cited by Mackenzie & Mackenzie, 1980, p. 129). Be that as it may, if we substitute *believer in the paranormal* for *psychic*, then at least some of the accumulating evidence (e.g., Irwin, 1991) might require Richards to reconsider his opinion. For example, Greyson (1977) observed that some psychic claims seemed to be more prevalent among schizophrenics than among nonschizophrenic, nonorganic psychiatric admissions, and expressed his opinion that the incidence in the latter resembled that in the normal population, though no inferential statistics were reported. On the other hand, evidence presented by Williams and Irwin (1991) suggested that schizophrenics and controls score about the same on the Revised Scale measuring paranormal belief (Tobacyk, 1988). Again, the Schizophrenia scale of the Minnesota Multiphasic Personality Inventory (MMPI) has twice been administered to student samples: Windholz and Diamant (1974) found believers in “extraordinary” phenomena to score significantly higher on this scale, but Thalbourne (1994) could confirm this only in his male subjects. In the current study, we set out to examine the level of paranormal belief among schizophrenics relative to a putatively normal group and a psychiatric group of nonschizophrenics.

Irrespective of the present ambiguity of the evidence in regard to schizophrenia, there are two other variables that are related to (and possibly predictive of) that particular psychosis (or, as some would have it, that group of psychoses), and their relationship with paranormal belief has also received some attention. The first is magical ideation, or the tendency to believe in scientifically unorthodox and often bizarre forms of interaction between thought and the physical world. Such ideation may be an indicator of schizotypal personality. A scale to measure magical ideation was devised by Eckblad and Chapman (1983). The second variable of this kind is perceptual aberration, for which a scale was developed by Chapman, Chapman, and Raulin (1988); this scale measures the extent to which people perceive their bodies, as well as the physical world in general, in the distorted ways characteristic of many schizophrenics (or people who may be prone to schizophrenia). Thalbourne (1994) has reviewed all the studies to date in which these measures have

been intercorrelated with paranormal belief and has found a perfect replication record: believers in the paranormal invariably score higher on magical ideation and on perceptual aberration than nonbelievers. Because of a small degree of content overlap between the measure of paranormal belief and the Magical Ideation Scale, the latter requires abridgment, but the correlation remains significant even when this adjustment is made. Magical ideation was to be measured in the present study, and it was thus predicted that paranormal believers would score higher than disbelievers on this measure both before and after the adjustment for content overlap.

Do believers score higher on measures of affective disorder also? This question has been explored to a lesser extent than in the case of schizophrenia and schizotypy-related variables. There is recent evidence that persons reporting more "positive affect" as measured by the Bradburn Affect Scale (Bradburn, 1969) also report more ostensibly psychic experiences (Haraldsson & Houtkooper, 1991), but, so far as we are aware, high scores on this scale do not necessarily imply psychopathology. Of greater relevance is the study by Windholz and Diamant (1974)—previously mentioned in regard to schizophrenia—where it was found that paranormal believers scored significantly higher on the MMPI's Hypomania scale. This particular finding has hitherto remained unreplicated, and an attempt to confirm it was therefore to be made in the present study.

However, whether the Hypomania scale actually measures the extent to which a person is currently hypomanic, or whether it is to be thought of more as a measure of a stable personality characteristic, as Goodwin and Jamison (1990, p. 321) maintain, is unclear. A recent paper (Thalbourne, Delin, & Bassett, 1994) has emphasized the distinction between currently experiencing affective illness and *having ever had* symptoms resembling such illness—a distinction, that is, between present state and past experience. This distinction may be important because there may not necessarily be significant correlations between the variable of interest and both the present state of a person and his or her past experience. An instructive example is mystical experience: According to most definitions, having an experience of this kind is incompatible with being sorrowful at the same time; yet it is well known that mystical experience is frequently followed by the "dark night of the soul," a profound form of deprivation-caused depression (Goodwin & Jamison, 1990, chap. 14; Grof & Grof, 1990, chap. 2; Underhill, 1911/1974, chap. 9). Thus, there is no necessary reason to think that a measure of mystical experience will correlate with present-state depression but every reason to suppose that

it may do so with *past experience* of depression. Ideally, then, researchers should specify precisely to which temporal domain their affective measures are intended to be relevant. In the current paper, apart from the Hypomania scale, we decided to use measures of past experience only.

We know of no studies that have examined paranormal belief in relation to mania either present state or past experience thereof. However, partly on the basis of the above-mentioned Haraldsson/Houtkooper finding in relation to positive affect and the Windholz/Diamant finding involving the Hypomania scale, we conjectured that believers in the paranormal might tend to show signs suggestive of mania.¹

In contrast to this relative dearth of research involving mania, there have been four studies that have looked at the relation between paranormal belief and measures of depression. The first was by Windholz and Diamant (1974). They used the Depression scale of the MMPI—a measure of present state—and the results were nonsignificant. Shafer (1982) used the Depression subscale of the Northridge Developmental Scale (Gowan, 1974) and likewise obtained nonsignificant correlations in two samples. However, validation studies of this scale appear not to have been published (Ferguson & Gowan, 1976). In contrast, Haraldsson and Houtkooper (1991), using large representative samples in the United States and in 13 European countries, found that persons reporting more “negative affect”—considered over the preceding few weeks, and as measured by the Bradburn Affect Scale—also report more ostensibly psychic experiences. Finally, the study by van Quekelberghe et al. (1991) may be relevant, because their M7 scale appears to tap “intense negative experiences” and correlates positively with reported parapsychological experiences. The evidence for an association is thus somewhat mixed, but nevertheless the hypothesis was entertained that paranormal believers might show more evidence of depressive symptomatology.

The final psychopathological aspect to be examined in this study was manic-depression. To our knowledge, no research that looks at paranormal belief in regard to manic-depression has been reported, with the possible and questionable exception of that on the Hypomania scale, discussed earlier. The most relevant finding is one reported by Haraldsson and Houtkooper (1991) to the effect that the *sum* of positive

¹ A paper that may merit citing in this context is that by Nelson (1989). He chose to look at what he called *spontaneous praternatural experiences*, a term which he applied to mystical, visionary, and remote perception experiences considered collectively. Using Tellegen’s (1982) Differential Personality Questionnaire he found that, among other results, people who had many praternatural experiences scored higher on the scales measuring Positive Affectivity and (in one analysis) Negative Affectivity.

and negative affect on the Bradburn Affect Scale was significantly associated with reporting psychic experiences and, indeed, was one of its best predictors. If it could be established that this measure is continuous with measures of manic-depression, then the pertinence of the finding would be clear. In the meantime, we have encountered a number of interesting anecdotes reported by manic-depressives about their apparent psychic experiences: Custance (1951), who kept a detailed record of his own manic episode, recounts a dream of his, the contents of which were cognized, apparently telepathically, by another patient (another manic-depressive); also, Smith (1990, p. 15), herself a psychologist, makes the comment that “feeling very psychic is another [sign I am getting ill] When I start taking out the tarot cards and start telling people I can read their tarot cards.” Whether such anecdotes are more prevalent among manic-depressives than among other people has not previously been addressed, and this study was able to examine the possibility more closely and in a number of ways, one of which was to provide a study group composed of manic-depressives. In all, therefore, the study was to have a total of three different groups: normals, schizophrenics, and manic-depressives.

In addition to the question of the correlates of paranormal belief, the study had a second major aim, and that was to compare the three groups of subjects in regard to (1) extent of reported mystical experience and (2) degree of creative personality.

Thalbourne (1991) examined at length the psychological aspects of mystical experience. One of his conclusions was that in order to further our understanding of the nature of such experience it would be valuable to assess the degree to which it is reported by normal persons, by manic-depressives, and by schizophrenics. Because mystical experience is usually considered a benign and even valuable phenomenon, it was of great theoretical interest to see whether in a statistical study—as opposed to case study (e.g., Anderson, 1938; Sedman & Hopkinson, 1966a, 1966b)—there would be any association with mental illness, especially mania, which involves a type of elation that seems to have much in common with religious ecstasy. Psychiatric researchers Goodwin and Jamison (1990, p. 362) opine that the famous mystics St. Theresa of Ávila and St. John of the Cross may have suffered from manic-depressive illness. Again, Greenberg, Witztum, and Buchbinder (1992) describe patients among whom studying Jewish mysticism may have precipitated psychosis.

We also attempted to look at the question of differences between our study groups (normals, schizophrenics, and manic-depressives) on the

variable of creative personality. Though an exhaustive review of the relevant literature is beyond the scope of this paper, and though some still consider the association debatable, an increasing amount of evidence appears to be accumulating to suggest that “madness” and creativity may be linked in some way (see, for example, Andreasen, 1987; Andreasen & Powers, 1975; Claridge, Pryor, & Watkins, 1990; Goodwin & Jamison, chap. 14; Mohan & Tiwana, 1987). We therefore entertained the expectation that our measure of creative personality might yield higher scores among the psychiatric groups than among the normals.

Finally, and in addition to the between-groups comparisons just described, the choice of variables to be examined meant that there was a further way of looking at the data, namely, to intercorrelate all the chosen dimensions for each sample separately. Thus, for example, the inclusion of a Manic-Depressiveness scale in the battery meant that the relation between manic-depression and creative personality could be tested, not only by comparing normals with manic-depressives, but also by examining the correlations between the scales measuring each variable. Moreover, we could also explore the little-studied relationship between other characteristics, such as mystical experience and creative personality. It is for this reason that we stated earlier that looking at paranormal belief was the *initial* aim of the study. From that starting place, we spread out in a number of logical, and we believe, informative directions.

METHOD

Psychological Instruments

A multipurpose questionnaire was collated containing, in addition to questions on demographic variables, a total of 167 items grouped into eight scales and one miscellaneous category. The scales are numbered in order of presentation in the following list:

1. The 18-item visual analogue scale version (Hayes & Patterson, 1921) of the Australian Sheep-Goat Scale (Thalbourne & Delin, 1993), which is a measure of belief in and alleged experience of the paranormal (ESP, psychokinesis, and life after death).

2. The 30-item true-false Magical Ideation Scale devised by Eckblad and Chapman (1983), as well as a 22-item version of the scale (called here Magical Ideation Scale Reduced), which omitted eight items obviously overlapping in content with the paranormal (namely, numbers 1, 4, 16, 18, 24, 27, 28, and 30).²

² A copy of the complete questionnaire may be obtained from the first author upon request.

3. A scale containing 15 (later reduced to 9) specially constructed true-false items to measure extent of experience resembling mania (Thalbourne, Delin, & Bassett, 1994).

4. A specially constructed scale to measure creative personality, consisting of nine true-false items, five of which came from the Torrance Creative Motivation Inventory (Torrance, 1971, pp. 95-96) and four of which were constructed specifically for this study. The resulting scale had an internal reliability coefficient (Cronbach α) of .62 ($N = 233$; see Cronbach, 1951). As yet, it lacks validity data and should therefore be regarded as an exploratory device.

5. The 46 true-false items that constitute the MMPI Hypomania scale (Dahlstrom, Welsh, & Dahlstrom, 1972).

6. A scale consisting of nine specially devised yes-no items intended to measure extent of experience resembling clinical depression (Thalbourne et al., 1994).

7. For reasons described in Thalbourne et al. (1994), scores on the Manic-Experience and Depressive-Experience scales were added to give a score on a Manic-Depressiveness scale.

8. Twenty-five items, again specially devised for this project, that were intended to form a scale to measure extent of mystical experience. Thalbourne (1991) provides various details about the psychometric properties of this scale. In addition, data supporting the concurrent validity of the scale were obtained in a study to be reported in a subsequent paper: The Mystical Experience Scale correlates with Hood's Mysticism scale at $+0.72$ ($N = 116$; $p < .001$). A second measurement method was also devised, using the approach of Hood (1970) and Rosegrant (1976): It required that the subjects read six passages selected from mystical literature and rate them for similarity to their own experiences. Despite the different format of this test, it correlated $+0.69$ ($p < .001$) with Hood's scale, and $+0.61$ with the Mystical Experience Scale.

9. As miscellaneous single-item variables, 15 affirmative/negative items of various types were thought to be potentially useful in the study. These items asked about willingness to participate in "further experimentation"; attitude to dream-interpretation (MMPI Item 11); the having of "vivid, picture-like visions" of the future and of deceased persons; claims of long-distance telepathy and the power to heal; receiving a "communication from the Divinity"; changes in perception, such as auditory and other sorts of hallucination, as well as intensified sense of smell (hyperosmia); paranoid ideation; ever having consulted a psychiatrist; ever having been hospitalized for a psychiatric condition; holding the view that life is a play or like a dream in the mind of God; and a single item of relevance to so-called "spiritual emergency"—a psychotic-like crisis with alleged potential for psychological growth, discussed by transpersonal psychologists (Grof & Grof, 1990; Perry, 1974)—in this case concerning the experience of symbolic martyrdom, death, and spiritual

rebirth, said to be a result of “activation of the Central (or Messianic Hero) archetype” (Bragdon, 1987, p. 140).

Finally, space was left for comment at the end of the questionnaire should the respondent feel so inclined.²

Subjects and Procedural Details

Ethical concerns pertaining to this experiment were examined by two relevant committees and were found to have been adequately addressed. All subjects read, signed, and kept a copy of a sheet indicating their informed consent to participate.

As already mentioned, there were three different samples. The first sample consisted of 241 persons, mostly students studying psychology at a range of levels at the University of Adelaide. There were 75 male and 166 female subjects in this sample. The mean age was 23.12 ($SD = 8.95$), and there were many more subjects younger than the mean than older than it.

The second sample consisted of manic-depressives (most currently well), the majority of them diagnosed by a psychiatrist or trained counselor and recruited with the help of a local self-help organization. Questionnaires were sent to a total of 255 addresses, and usable responses were obtained from approximately one third of this number. There were thus 86 persons in the sample, 40 male and 46 female. Mean age was 40.64, $SD = 11.54$, and the distribution was reasonably normal. Of this second group, 37 persons, haphazardly chosen, were interviewed by telephone, and data were obtained regarding mood at the time of filling in the questionnaire, number of manic-depression-relevant medications currently being taken, number of psychiatric hospitalizations, and length of time since last illness episode.

The third and final sample consisted of schizophrenics (most of them also well at the time), the majority of them again recruited from a local self-help group. In addition to personal invitations to participate—extended to clients at a local drop-in center—some 75 questionnaires were sent out to schizophrenic persons on the organization’s mailing list. The response rate was in general rather low, perhaps owing to the cognitive complexity of some of the questions and the considerable length of the questionnaire. A total of 38 persons responded, 25 male and 13 female. The average age was 36.71 years ($SD = 11.39$); deciding the shape of

² A copy of the complete questionnaire may be obtained from the first author upon request.

distribution is problematic with a sample this size, but it was at least peaked around the central values. Resources did not extend to a formal interview survey with any of the schizophrenics.

Several comments about the possible shortcomings of these samples are in order at this point. First of all, there are clearly large differences between the groups on potentially important variables, such as age ($F = 113.73$, $df = 2362$, $p < .0001$, eta-squared³ = .39) and educational level, which could conceivably interact with other effects. Second, the criterion of inclusion in the clinical groups was membership of a relevant self-help group rather than independent evaluation by a psychiatrist associated with the study, and use of the latter criterion might have eliminated borderline and schizoaffective cases; moreover, the sort of person who makes contact with a self-help group may differ in important ways from persons who do not. Third, the clinical subjects were almost all of them well at the time they filled in the questionnaire, rendering them more like normal subjects; different results might be found with people who were currently experiencing an illness episode (assuming, of course, that they were capable of doing a questionnaire). Finally, virtually all clinical subjects were taking medication of some kind, which might conceivably act to affect psychological differences between them and the normal group. With these caveats, then, we proceed to the results.

RESULTS

Mean Differences Between the Three Samples on Psychopathological Variables

Given that the study used six psychopathology-relevant scales, the first question that might be raised is whether the means of the three groups of subjects on these scales did indeed differ significantly and in the expected direction. If they did, this would enhance confidence in the scales' validity both in general and for further analyses. Thus, one would predict that manic-depressives would score higher than the other two groups on the Manic-Experience, Depressive-Experience, Manic-Depressiveness scale, and the Hypomania scale, whereas schizophrenics ought to obtain the highest mean score on the Magical Ideation scales (both Full and Reduced). Table 1 gives descriptive statistics and results of

³ Eta-squared—the so-called correlation ratio—is a statistic which measures the total amount of variance (linear plus nonlinear) that is explained by the independent variable. in this case, group classification (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975, p. 261).

one-way analyses of variance. For the F statistic, the between-groups df is always 2, whereas the within-groups varies from between 348 and 359 owing to missing data.

As can be seen in Table 1, significant differences were obtained between the means on all six scales. These were generally in the predicted direction. Thus, for example, on both versions of the Magical Ideation scale, schizophrenics scored highest (cf., George & Neufeld, 1987) and on Manic-Experience and Manic-Depressiveness the manic-depressives scored highest. On Depressive-Experience the mean for schizophrenics is slightly higher than that for manic-depressives, but the two are not significantly different by Scheffé test, while both are significantly different from the much lower mean of the students. (The common association of depression with schizophrenia has been noted in the literature; e.g., American Psychiatric Association, 1987, p. 192; Dahlstrom, Welsh, & Dahlstrom, 1972, p. 215; Ndetei & Singh, 1982.) On the other hand, the results for the Hypomania scale are completely anomalous, the manic-depressives scoring lowest instead of highest, and the students highest of all three groups. Further results using this scale ought probably to be interpreted with caution. Nevertheless, and despite the outcome with Hypomania, it appears that, on the whole, our psychopathology-relevant measures do actually discriminate between the three samples in the ways predicted. These findings recapitulate and extend those reported in Thalbourne et al. (1994).

TABLE 1
MEAN SCORES ON SIX PSYCHOPATHOLOGY-RELEVANT MEASURES

Scale	Students	Manic-depressives	Schizophrenics	F	p	eta^2
Manic Experience	5.4 (1.6)	6.8 (1.6)	5.9 (1.8)	22.09	<.0001	.11
Depressive Experience	3.5 (2.0)	5.8 (2.2)	6.2 (2.0)	56.09	<.0001	.24
Manic-Depressiveness	8.9 (3.0)	12.6 (2.8)	12.1 (3.4)	56.21	<.0001	.24
Hypomania	21.5 (5.2)	19.4 (5.7)	20.9 (6.1)	4.80	.0087	.03
Magical ideation (Full)	10.1 (6.2)	8.6 (6.5)	11.5 (6.2)	3.32	.0374	.02
Magical ideation (Reduced)	6.5 (4.1)	5.8 (4.7)	8.3 (4.6)	4.11	.0171	.02

Note. The SD s are shown in parentheses.

Mean Differences Between the Three Samples on the Hypothesized Variables

The three subject groups were also compared on paranormal belief, mystical experience, and creative personality. The results of this comparison are shown in Table 2.

TABLE 2
MEAN SCORES ON PARANORMAL BELIEF, MYSTICAL EXPERIENCE,
AND CREATIVE PERSONALITY

Scale	Students	Manic-depressives	Schizophrenics	<i>F</i>	<i>p</i>	<i>eta</i> ²
Paranormal Belief	16.9 (7.1)	16.5 (8.0)	16.8 (9.3)	.09	ns	.00
Mystical Experience	10.2 (5.4)	12.6 (6.0)	14.1 (5.9)	11.11	<.0001	.06
Creative Personality	6.0 (2.0)	5.1 (2.1)	5.0 (2.2)	7.99	.0004	.04

Note. *SDs* are shown in parentheses.

Contrary to hypothesis, the differences between the groups for the scale measuring paranormal belief were entirely nonsignificant. (Even entering age as a covariate failed to produce a significant difference between groups.) However, post hoc examination of the 18 individual items comprising the scale revealed four significant differences: Compared with both clinical groups, students reported more hunches ($p = .016$) and greater belief in the possibility of receptive telepathy ($p = .0004$), whereas compared with students and manic-depressives, schizophrenics claimed to have more psychokinetic ability ($p = .004$) and to have experienced more PK of the recurrent variety ($p = .005$). Furthermore, on the four additional paranormal questions, there was a tendency for the schizophrenics to respond in the affirmative. Though, as in the previous analyses-by-item, group differences were not significant in claims to have experienced precognition or contemporaneous ESP, 37% of schizophrenics reported seeing the dead, as opposed to about 19% of students and manic-depressives ($\chi^2 = 6.72$, $df = 2$, $p < .05$). In addition, 32% of schizophrenics (as well as 31% of manic-depressives) claimed healing powers, compared with just 16% of students ($\chi^2 = 11.35$, $df = 2$, $p < .01$). Thus, despite the results with the overall scale measuring paranormal belief, there is a mild suggestion in the item analyses that mental illness, especially schizophrenia, might be associated with an

increased incidence of at least certain sorts of paranormal belief or experience.

On the Mystical Experience Scale, however, the group differences clearly significant, the clinical samples showing means that, although not significantly different from each other, were higher than the mean of the students. This result therefore supports the hypothesis of an association of some kind between mystical experience and mental illness. Whether this association should be seen as pathological or is in fact an addition to the list of genuinely positive experiences, such as social ease, sexual intensity, productivity, and so on, often reported by bipolar patients (Jamison, Garner, Hammen, & Padesky, 1980), remains to be investigated. Here we might add one post hoc analysis which might be considered relevant to paranormal belief also: It was predicted and found that members of the clinical groups tended to say "no" to the Mystical Experience Scale item "I have never had an experience which completely convinced me (at least at the time) that I and everyone else am immortal." Of the schizophrenics, 43% claimed to have had this experience, with manic-depressives being close behind at 39%, whereas only 24% of the students had ever felt so convinced ($\chi^2 = 10.50$, $df = 2$, $p < .01$). A possible example of this phenomenon is given by actress Patty Duke, herself a manic-depressive, who claims to have had a dramatic experience that converted her from disbelief to belief in immortality (Duke & Turan, 1988, pp. 260-263).

Finally, we come to the results using the Creative Personality Scale. It may be, perhaps, of anecdotal interest that of all the 365 subjects in this experiment, just two of them responded to the Comments section at the end of the questionnaire by writing a poem, and that both of them were manic-depressives with Creative Personality scores at or above their group mean. Anecdotes aside, however, it must be said that the three group means differed in directions opposite to those predicted, with the two clinical groups scoring lower than the student group. Given the exploratory nature of this measuring device, and the questionable appropriateness of students as a control group, perhaps only a small amount of weight should be placed on this finding.

We should mention a set of subsidiary analyses that were performed on the data. These pertain to the small interview study of 37 manic-depressives. This, it will be recalled, concerned four aspects of their past and present psychiatric history, considered in relation to the six psychopathological and three other scales, producing a total of 36 correlations. Thalbourne et al. (1994) have reported the two significant correlations between the manic-depression-relevant scales and number of different

medications being taken. Here we report that number of medications (mean 2.32, $SD = 1.68$) was also correlated with the Hypomania scale ($r = +.38, p = .022$). Eight other correlations were also significant ($p < .05$, two-tailed hypothesis). Total number of psychiatric hospitalizations correlated significantly with the degree of mystical experience ($r = +.43$), and both Full and Reduced versions of the Magical Ideation Scale ($r = +.36, +.39$, respectively). Length of time since last hospitalization (mean 27.8 months, $SD = 42.88$) correlated moderately and negatively with five variables: Those who had been out of the hospital longer—again an indirect and inverse measure of severity of illness—were more likely to score lower on Magical Ideation ($r = -.53$ for Reduced, $-.50$ for the Full scale), to be more disbelieving as regards the paranormal ($r = -.49$), to be less hypomaniac ($r = -.45$), and to have less creative personalities ($r = -.38$). The final aspect about which respondents were asked—mood at the time of filling in the questionnaire—did not correlate at all with any of the nine variables.

Other Correlational Analyses

To extend the analysis in a different direction, the nine major variables were then intercorrelated, and, to control for type of subject, a correlation matrix was constructed for each of the three groups separately. Table 3 displays the results for the student sample. Because this was much the largest group, the most weight was attached to these findings.

The first thing to note about these correlations is that they are all significant and all positive. Examining the first column of the table, we see that the higher a person scored on the scale measuring paranormal belief, the more likely he or she was to report mystical experience, display characteristics of the creative personality, to be hypomaniac, to have experienced depressive affect, and to engage in magical ideation—all of which confirm results that have been reported by other researchers and were reviewed in our introductory remarks, thus requiring little additional comment. Probably unique to this study, however, is the finding that paranormal believers, even in a supposedly normal sample, report more manic and more manic-depressive experience.

Subjects scoring higher on the Mystical Experience Scale scored higher on all the psychopathological scales, which is consistent with the findings from the between-groups analyses. Unfortunately, correlations not only fail to demonstrate the existence of causation but also give no hint of temporal relation. For example, for the correlation between mystical experience and depressive experience, these data do not tell us

which phenomenon comes first: Underhill (1911/1974) discusses situations where it is the loss of mystical experience that leads to despondency and yearning, whereas Aberbach (1987) argues that grief, particularly owing to childhood loss of a parent, can lead to mystical phenomena as a form of consolation prize. Probably both scenarios occur, but that a depression-mysticism association tends to occur seems to be reasonably well established.

TABLE 3
PEARSON CORRELATIONS BETWEEN PARANORMAL BELIEF (PB),
MYSTICAL EXPERIENCE (ME), CREATIVE PERSONALITY (CP),
MANIC EXPERIENCE (MA), DEPRESSIVE EXPERIENCE (DE),
MANIC-DEPRESSIVENESS (MD), HYPOMANIA (HY), AND MAGICAL
IDEATION (FULL: MI; AND REDUCED), FOR THE STUDENT SAMPLE
(MAXIMUM $N = 241$)

Variable	PB	ME	CP	MA	DE	MD	HY	MI
Paranormal Belief								
Mystical Experience	.51							
Creative Personality	.43	.48						
Manic Experience	.34	.50	.45					
Depressive Experience	.29	.40	.29	.39				
Manic-Depressiveness	.37	.53	.43	.79 ^a	.87 ^a			
Hypomania	.30	.37	.45	.50	.31	.47		
Magical Ideation (Full)	.68	.50	.48	.52	.38	.53	.56	
Magical Ideation (Reduced)	.60	.45	.43	.50	.34	.49	.56	.97 ^a

Note. For all correlations, $p < .001$, two-tailed.

^a Part-whole correlation.

Subjects scoring higher on the Mystical Experience Scale also scored higher on the Creative Personality Scale—a possibly novel statistical finding that supports the viewpoints of Aberbach (1987, p. 524) that mysticism is a form of creativity, and of Underhill (1911/1974, chap. 5) that the voices and visions of mystics are often an artistic expression of a creative mind. One also thinks of such persons as William Blake, in whom there were combined the talents of poet, painter, and mystic, and closer to our time, the poet Anne Sexton, whose final opus was deeply mystical (Shurr, 1985).

Creative Personality is likewise positively correlated with all psychopathological scales, suggesting yet again that there is a correlation between

certain aspects of psychosis and creativity. Although our Creative Personality scale still awaits formal validation, it does appear to possess reasonable face validity, and it is interesting to note that it relates to the other measures, by and large, as predicted.

Finally, all the psychiatric scales are positively correlated with each other. Because one of these variables pertains to schizotypal personality and others to affective disorder, these findings may be of interest to those examining the similarities between the two major types of psychosis (see, for example, Brockington, Kendell, Wainwright, Hillier, & Walker, 1979; Claridge et al., 1990; Pope & Lipinski, 1978). The data also bear on the relationship between positive and negative affect. Some researchers, such as Watson, Clark, and Tellegen (1988), argue that these dimensions are orthogonal. Our findings, however, support the view of workers such as Diener, Sandvik, and Pavot (1991) that extremes of positive emotion tend to be found in the same people who experience extremes of negative emotion.⁴

Turning to the two clinical groups: To what extent are the student findings duplicated, bearing in mind that the clinical samples are considerably smaller? Table 4 displays these results for the two groups simultaneously.

Considering first the manic-depressives (below the diagonal), all of their 34 correlations were positive, 29 of them significantly so. (The exceptions related mainly to Depressive Experience, which had yielded the two lowest correlations in the student sample also. One reason for the lack of significance here might be that the range of Depressive Experience scores may be restricted in the clinical samples.) Of particular interest is the correlation of .26 between the Manic-Depressiveness scale and paranormal belief, which suggests that it is not manic-depressives themselves, but those whose illness is relatively severe, who tend to believe in and report experience of the paranormal. This may explain why the between-groups analysis showed that an unselected group of manic-depressives scored no higher on paranormal belief than did students.

Turning to the schizophrenics (above the diagonal): All but one of the correlations were positive, 21 of them significantly so. Again, Depressive Experience accounted for a number of the nonsignificant correlations. The high correlations between the Magical Ideation scale and paranormal belief (.61 and .48) are suggestive of the possibility that it is

⁴ The divergence may be due in part to different meanings attached to *negative affect*. Diener et al. mean "unhappiness," while Clarke et al. appear to mean "unpleasant, but not necessarily in a depressive way."

those schizophrenics who are strongly characterized by magical ideation tend to believe in and report experience of the paranormal. Thus, an unselected group of schizophrenics may score no higher on paranormal belief than do students in a between-groups analysis. We therefore suggest that high levels of paranormal belief may be more likely to be found in more severe (or, possibly, untreated) cases of schizophrenia and manic-depression, which has implications for the simple-minded view that believers in the paranormal are simply expressing incipient psychosis!

TABLE 4
PEARSON CORRELATIONS BETWEEN PARANORMAL BELIEF (PB),
MYSTICAL EXPERIENCE (ME), CREATIVE PERSONALITY (CP),
MANIC EXPERIENCE (MA), DEPRESSIVE EXPERIENCE (DE),
AND MANIC-DEPRESSIVENESS (MD), HYPOMANIA (HY), AND MAGICAL
IDEATION (FULL: MI; AND REDUCED: MI') FOR MANIC-DEPRESSIVES
(MAXIMUM $N = 86$: BELOW DIAGONAL) AND SCHIZOPHRENICS

Variable	PB	ME	CP	MA	DE	MD	HY	MI	MI'
Paranormal Belief		.52	(.32)	.52	(-.02)	(.28)	.41	.61	.48
Mystical Experience	.55		.44	.58	(.13)	.40	.34	.61	.61
Creative Personality	.41	.27		(.21)	(.01)	.12	.60	.39	.44
Manic Experience	.27	.50	(.19)		.52	.86 ^a	.38	.35	(.30)
Depressive Experience	(.20)	(.22)	(.21)	(.13)		.88 ^a	(.04)	(.04)	(.05)
Manic-Depressiveness	.26	.43	.28	.65 ^a	.84 ^a		(.23)	(.23)	(.21)
Hypomania	.52	.31	.52	.28	.30	.39		.50	.51
Magical Ideation (Full)	.68	.57	.50	.31	.47	.52	.68		.95 ^a
Magical Ideation (Reduced)	.60	.54	.50	.30	.47	.52	.67	.98 ^a	

Note. Parentheses indicate nonsignificant correlations ($\alpha = .05$, two-tailed).

^aPart-whole correlation.

For the most part, virtually all the significant relationships observed in the student sample were replicated in the two clinical samples. The stability of these findings thus strengthens our particular conclusions about the student sample. We further conclude that in all three samples there is at least moderately good evidence that the variables are positively correlated with each other, except that the strength of the relation with depression is somewhat variable.

A Principal Components Analysis of Six Nonoverlapping Variables

Inspection of the correlational data—especially those for the students in Table 3—does seem to suggest that the variables examined have some variance in common. We therefore decided to subject the student data to a principal components analysis of six variables as measured by: the scale measuring paranormal belief, the Mystical Experience Scale, the Creative Personality Scale, the Manic-Experience Scale, the Depressive-Experience Scale, and the Reduced Magical Ideation Scale. (We omitted the Hypomania scale on the grounds that it was too similar in theme to Manic-Experience, the Manic-Depressiveness Scale, which is a composite of Manic- and Depressive-Experience, and the Full Magical Ideation Scale which, as we have mentioned previously, has some overlap with the scale that measures paranormal belief.) Thus, we made a great effort to ensure that the six variables had a minimum of thematic overlap with each other.

By the Kaiser criterion (Eigenvalue ≥ 1), there emerged just a single factor. This factor (Eigenvalue = 3.17) accounted for 52.8% of the variance. The factor loadings are shown in Table 5 in order of magnitude.

Magical Ideation (Reduced) showed the highest communality, whereas, as might be expected from the correlation analyses, the Depressive-Experience Scale showed the smallest communality. Factor analysis—both maximum likelihood and principal axis factoring—gave similar single-factor outcomes. The logical question then becomes: What might it be that all these variables—apparently so different from each other—have in common? What do belief in the paranormal and creative personality have in common, for example? Or, for that matter, what do those two variables jointly have in common with mystical experience? What is the common thread mentioned in our title? We attempt to address this issue in the following discussion.

DISCUSSION AND FURTHER ANALYSIS

Since the time of W. B. Carpenter (1874), F. W. H. Myers (1892), and other thinkers in the 19th century, it has often been thought useful to postulate that there exists, in addition to the conscious part of our minds, another level or region whose contents are *not* immediately present to consciousness but which under certain conditions can be causally involved in producing conscious states or motor activity. This region has been variously named the *unconscious*, the *preconscious*, even

the *precognitive mind*, or, in the case of Myers, the *subliminal consciousness*, from the Latin *sub*, meaning *below*, and *limen*, meaning *threshold*. We acknowledge that the debate over the suitability of any of these terms is vast, but we would like, nevertheless, to appropriate the word *subliminal* to refer to those states that are not currently in consciousness but have the potential to appear there. Subliminal states thus conceived of are sometimes responsible for the more-or-less modified contents of a memory-archive, and sometimes comprise the process that appears to actively constellate and present material to consciousness in an intelligent and sometimes novel fashion. In the case of dreaming, the latter function has sometimes been called the *Dream Architect*. More generally, we suggest that it might be referred to as the *choregos function*, *choregos* being Greek for the person who conducts a choir, choreographs a dance, or arranges for the production of a theatrical performance such as a drama.

TABLE 5
FACTOR LOADINGS AND COMMUNALITIES FOR THE SIX
NONOVERLAPPING VARIABLES ENTERED INTO PRINCIPAL
COMPONENTS ANALYSIS ($N = 228$)

Variable	Factor loading	b^2
Magical Ideation Scale (Reduced)	.783	.612
Mystical Experience Scale	.771	.595
Paranormal Belief Scale	.745	.555
Manic Experience Scale	.745	.555
Creative Personality Scale	.710	.504
Depressive Experience Scale	.587	.345

Two terminological implications follow from our adopting the word *subliminal*: first, it implies that those events that *are* in consciousness can be referred to as *supraliminal*; second it implies that there is some sort of “threshold” between subliminal and supraliminal—a poorly understood transitional phase or turning point where events with no conscious representation at one time then cause or achieve one at a later time. (That the process may occur in the reverse direction or even originate in the external environment, is discussed later.)

Quite obviously, not everything contained subliminally is presented all at once at the supraliminal level. There does seem to exist some mechanism that is supposed to act as a barrier or filter (Bergson, 1913),

or as a permeable membrane (to use a neurological metaphor) to prevent the resurrection of material from being too overwhelming. It seems that we sometimes think of this mechanism as a kind of dam, or as being like the levee on the bank of a river, holding back the vast waters represented by subliminal contents, or even as being like a lifejacket. The water metaphor is alluded to when we say things such as “All at once my mind was flooded with memories from the past,” or “Tears welled up from inside.” A biographer of Isaac Newton wrote, “The rest of his creative life was spent in working out in the calculus and in his mathematical thought what had gushed forth during those years with little or no preparation” (Manuel, 1980, p. 81). Elsewhere (p. 156) he says, “The initial insights came easily; they poured out like a flood.” Of depression, Nicholas Fatio de Duiller in the 17th century said, “The sources of melancholy surround me on all sides. The rivulets ... flow over me day and night. They follow me everywhere. . .” (Manuel, 1980, p. 193). Schou (1926, p. 40) wrote, “Just as a storm may fling the waters of the ocean into turmoil and bring to the surface things otherwise hidden in depths, so also the manic-depressive psychosis may create a turmoil in the human mind and bring forth what lay hidden there.” And, as one final example, Joseph Campbell once said, “The schizophrenic is drowning in the same waters in which the mystic is swimming with delight” (Lee, 1985, p. 40).

We suggest that there are individual differences between people in the selectiveness with which the barrier or gating mechanism between subliminal and supraliminal is operating (either at the present time or as an enduring trait), with consequent effects upon the extent to which material from the subliminal level appears in—can even engulf—the supraliminal consciousness. Thus, in one person, only certain types or small quantities of ideation or affect are allowed to “cross the threshold” into consciousness whereas, in another, the threshold is, relatively speaking, much more permeable, allowing through into the supraliminal region more, and perhaps in some sense “deeper,” material. To describe this concept we suggest the word *transliminality*, from the Latin *trans*, meaning *across*, and *limen*, meaning *threshold*, to refer to the degree to which the threshold can be crossed.⁵ Persons high in transliminality will,

⁵ Sometime after the first author coined the word *transliminality* and its cognates in 1991, it was brought to our attention by Dr. R. Petersen that, nearly 30 years earlier, the educationist Harold Rugg had used the adjective *transliminal*, if not the noun *transliminality*. Rugg used *transliminal* much more narrowly, to describe a state or borderline state of mind he believed to be conducive to creative insight: the transliminal state in his view “is actively magnetic, attracting materials out of the non-conscious into the vestibule of the conscious mind. Such across-the-threshold power suggests the name which I have given it: the transliminal mind” (Rugg, 1963, p. 40). We duly acknowledge this earlier coinage.

relatively speaking, experience a much larger number of different types of input from subliminal regions, whereas others, lower in transliminality may hear from that region on considerably fewer occasions; that is, V. e postulate the existence of individual differences in the degree to which people exhibit or experience transliminality.

Further, we suggest that the general factor uncovered by the principal components analysis reported in this paper is in fact an estimate of the degree of transliminality. The common thread that appears to unite all the component variables is, we speculate, that they can be thought of as being different situations under which subliminally processed ideation, often with associated positive or negative affect, crosses the threshold from subliminal to supraliminal. The most obvious is perhaps creative personality, and indeed our notions of creativity underlie much of our theorizing here: Creative people exhibit a high degree of transliminality in that their consciousness is characteristically and from time to time presented with thoughts—novel ideas or solutions to problems; connections between elements—that appear not to be the result of direct reasoning, though the pieces of the puzzle may have been allowed to lie dormant to incubate; the threshold of such persons does not impede thoughts of an alien origin.

Again, mania, with its flight of ideas, its uprushes of overly optimistic elation, and its often pleasant but unpremeditated delusions, such as delusions of grandeur, could be said to be a result of excessive transliminality allowing subliminal material—especially positive affect but also ideation—into the conscious, sometimes worked into a story by the choregos function. Depression, on the other hand, is surely the situation where, owing to a different kind of excess transliminality and a more malevolent choregos function, highly unpleasant memories and morbid delusions rise up again and again to prey, vulture-like, upon the mind of the hapless person. And it is possible to see in a similar light some of the frequent aspects of schizotypal personality and of schizophrenia, such as hallucinations taken by the experient to be veridical, or magical or paranoid delusions, which are, after all, cognitive connections between the person and their outside world that are “creative” but (from the point of view of most other people) invalid. Thus may extreme transliminality have negative as well as positive outcomes. Drugs such as lithium, modicate, and the antidepressants might all be described most generally as antitransliminals, and their principal intended action (as well as the goal of psychotherapy)

would be to put a lid on the excesses of subliminal activity, reducing the activity of certain processes to a more optimal level.⁶

Following this line of thinking, paranormal belief might be accommodated by supposing it to be a form of associative creativity. Believers think that there are causal connections between mind and all manner of things in the universe, whereas disbelievers see the operation of mind as far more circumscribed—indeed, as confined to the nervous system—and therefore view such postulated connections as illicit. More difficult to grapple with is ostensible *experience* of the paranormal, and, as well, mystical experience. If we assumed that they are both essentially illusory and have no epistemological validity, then they might be conceptualized as being irruptions into consciousness of conclusions or scenarios or behaviors created by the person's choregos function operating in wish-fulfillment mode. Thus, mystical experience is sometimes explained as a regression to our memory of a more delightful and omnipotent time as infants safe at our mothers' breasts. Highly transliminal persons would perhaps have more access to such memories. Again, psychic experiences are said by skeptics to be due either to downright cognitive error, or to an overdeveloped fantasy-life involving belief in the efficacy of magic coupled with a need to gain at least the illusion of control over uncontrollable events. Highly transliminal persons might perhaps have access to much more material—hunches and dreams and unreasoned miscellaneous impulses—that would potentially and fortuitously correspond to external events, producing coincidences that would be due to chance.

But if one were to postulate that mystical and/or psychic experience actually involves acquiring knowledge in ways that transcend reason and the senses, then one might be tempted to say that a highly transliminal person is in some sense and at least sometimes more open to veridical information not accessible by normal means at that time and place. Though parapsychology hints at such processes, acceptance of them would have far-reaching ramifications, and researchers may well, for the time being, choose simply to suspend judgment on their existence.

Metaphysics aside, it is important to emphasize that the notion of transliminality basically implies that, up to a point, high levels of one of its component variables will be found to be associated with high levels of

⁶ We might predict that any agency that reduced the level of transliminality would lower the scores on the component variables as well. It is therefore interesting that lithium may reduce, not only mania (and possibly depression), but also associational productivity and idiosyncrasy thought to be important for creativity (Shaw, Mann, Stokes, & Manevitz, 1986). Perhaps lithium reduces belief in the paranormal as well!

all other component variables, and the same for low levels, *mutatis mutandis*.

We go beyond that statistical finding to theorize about the reason for this interlinkage. We have proposed—and will now adduce empirical evidence in support of the position—that the common link underlying the variables under discussion is this: *A high degree of transliminality appears to imply a largely involuntary susceptibility to, and awareness of, large volumes of inwardly generated psychological phenomena of an ideational and affective kind.* We consequently formulated three general propositions about transliminality, which could be tested in this first experiment by examining the relationships between transliminality and the 15 individual items referred to in section 9 in the Method section:

1. *Attention to inner processes.* We expected that persons with a high degree of transliminality would, because of the inescapable fecundity of their conscious life, engage in more behavior that indicates attention to the contents of their mental world.

2. *Attribution of meaningfulness to inner processes.* We expected that highly transliminal persons would, partly because of the sheer forcefulness and impressiveness of their subliminal outpourings, attach more meaning—either importance or information-value—to at least some of the products of their mental world.

3. *The character of further psychological correlates of transliminality.* We expected that certain other psychological variables would correlate with the measure of transliminality but that they would all be interpretable as measures of (or related to measures of) *a largely involuntary susceptibility to large volumes of inwardly generated psychological phenomena of an ideational and affective kind.*

To test these propositions, we generated a transliminality score for each subject by using the factor score coefficients (not to be confused with the factor loadings) produced by the principal components analysis. For each subject, the z scores for each constituent variable are multiplied by the corresponding factor coefficient, and these products are summed over all variables. The resulting scores are so constructed that they are normally distributed with a mean score of 0.00 and an *SD* of 1.00. It should be mentioned that, as regards the possibility of gender and age differences, in none of the three samples was gender related to transliminality. Nor was there any association with age in the student and schizophrenic samples. However, younger manic-depressives had significantly higher transliminality scores than did older manic-depressives ($r = -.36, p < .001$). Though other explanations are possible finding may reflect the clinical observations that the onset of bipolar illness tends to be in the 20s and 30s and that episode, tend to remit in a person's later years.

Some evidence in support of the first proposition—attention to inner processes—was obtained in the following way. Respondents had been asked on the front of their questionnaire, “Would you be willing to participate in further experimentation here at the University?” Most would have made their decision about this question before actually completing the questionnaire. Considering just the student sample, those 62 persons who said “no” were significantly lower on transliminality (mean = $-.31$) than the 166 who said “yes” (mean = $.11$, $t(226) = 2.87$, $p = .004$, two-tailed, omega-squared⁷ $.03$). (This was mainly due to the volunteers having higher levels of magical ideation, creative personality, belief in the paranormal, and depressive experience. Certain of these findings resemble the elevated degree of psychopathology found in unpaid volunteers by Halbreich, Bakhai, Bacon, Goldstein, Asnis, Endicott, & Lesser, 1989.) Among the manic-depressives and schizophrenics, volunteers likewise had a mean level of transliminality higher than the nonvolunteers, but the differences were insignificant (there were few nonvolunteers, and significance would have been difficult to attain). Considered overall, results such as these are consistent with the supposition that the refusers experience fewer outpourings from the subliminal level and are therefore less interested in pursuing a psychological investigation of them.

A second piece of evidence might be thought of as being as relevant to Proposition 1 as it is to Proposition 2, the attribution of meaningfulness hypothesis. It comes from examination of the level of transliminality in relation to the statement from the MMPI Hypomania scale: “A person should try to understand his or her dreams and be guided by or take warnings from them.” Consider first the students: Of those 125 who said “true,” the mean transliminality score was $+.33$; for those 99 who said “false,” the mean was $-.43$. This difference is highly significant ($t[222] = 6.07$, $p < .001$, two-tailed, omega-squared = $.14$). (Those who favored paying attention to dreams also scored significantly higher on belief in the paranormal, magical ideation, creative personality, manic and depressive experience, and mystical experience. We submit that not all these differences are self-evident.) This effect was confirmed both among the manic-depressives and among the schizophrenics and therefore appears to be robust. Highly transliminal types attach more meaning to at least one inner process, namely, dreaming.

There was a wealth of data relevant to Proposition 3, according to which additional psychological correlates of transliminality would be

⁷ Omega-squared is a statistic that measures the amount of variance that is explained by the independent variable, in this case the dichotomous variable, volunteer status (Hays, 1963. Thalbourne, 1981, p. 110).

transliminality-like in nature. First on the list are the four additional paranormal-type items: For the student sample, it was the case that significantly higher mean transliminality scores were obtained by people had precognitively “seen” a future event, “seen” contemporary events at a great distance by ESP, had visions of the deceased, and claimed unusual healing powers. The data of the manic-depressives and schizophrenics confirmed the direction of the differences in all eight cases, significantly so in five. These associations are perhaps not surprising, given that we know on other grounds (Thalbourne & Delin, 1993) that these items correlate with the measure of paranormal belief, which is a component of transliminality. This being so, it is not hard to conceptualize all four items, even the one on healing, as probably implying the claim of the presence of interior veridical information (not available to all persons) and a greater sensitivity to that information.

Given the presence of the Mystical Experience scale in transliminality, perhaps the same lack of surprise should be expressed with another item, this time a religious one. The question read, “Have you ever felt that you had received a communication from the Divinity?” In all three subject-groups, those who said “yes” had mean transliminality scores significantly higher than those who said “no.” Whether the experiences in such cases have interior or exterior causes might be debated, and we shall leave this question open for a later study. In the meantime, we are certainly left with the impression that at least some aspects of religiosity appear to be associated with transliminality.

We now consider experiences that shade into the psychiatric domain. The first of these is “hearing a voice that was talking to you in a meaningful way and which was not simply your own internal voice.” The wording of this item was deliberately general in order to avoid the negative connotations of “mere” hallucination. There have been a number of interesting cases of this phenomenon in presumably sane persons, such as Socrates⁸ and Joan of Arc⁹, where paranormal elements are claimed.

⁸ Xenophon tells us that one of the indictments against Socrates was that he introduced “strange deities”: “Indeed it had become notorious that Socrates claimed to be guided by ‘the deity’ . . . : it was out of this claim, I think, that the charge of bringing in strange deities arose. He was no more bringing in anything strange than are other believers in divination, who rely on augury, oracles, coincidences and sacrifices. For these men’s belief is not that the birds or the folk met by accident know what profits the inquirer, but that they are the instruments by which the gods make this known; and that was Socrates’ belief too. Only whereas most men say that the birds or the folk they meet dissuade or encourage them, Socrates said what he meant: for he said that the deity gave him a sign. Many of his companions were counselled by him to do this or not to do that in accordance with the warnings of the deity: and those who followed his advice prospered, and those who rejected

Consistently in all three subject groups, those who answered this question in the affirmative had significantly higher transliminality scores than those replying in the negative. The picture was almost as clear for the blunter question “Have you ever experienced hallucinations while in the waking state?” where, however, and perhaps surprisingly, the data of the schizophrenics failed to reach significance. Again, given some of the constituent variables within transliminality, it could be argued that these two correlates are not very surprising, but they are at least consistent with the third proposition: Few would deny that both these auditory and visual phenomena—although their contents are projected out into the objective world—are inwardly generated, regardless of what useful and even paranormal information they may contain. Less predictable is the finding that subjects who have ever felt that people were trying to kill them—an item perhaps relevant to paranoid ideation—produced significantly higher mean transliminality scores in both students and manic-depressives (and almost significantly higher scores among the schizophrenics). Further investigation is needed to ascertain whether high transliminals are indeed more prone to nonreality-based paranoia.

Thus far we have avoided directly equating transliminality with psychoticism or with psychiatric disturbance. However, if one conceives of psychiatric disturbance as in some sense and at the very least *involving* an excess of transliminality, then we might expect people with such a condition to score higher on the measure of transliminality. This did in fact turn out to be the case: Whereas the mean for the students was 0.00 and the *SD*, 1.00 (because they were the standardization sample), the mean for the manic-depressive sample was +.40 (*SD* = 1.03), and the mean for the schizophrenics was even higher at +.47 (*SD* = 1.12). The overall differences were significant [$F(2,333) = 6.34, p = .002, \eta^2 = .04$], the two clinical groups scoring at a level similar to each other but significantly higher than that of the students. (As we know already from earlier analyses, these differences are principally due to higher levels of the

it had cause for regret.” (*Memorabilia*, I, I. 1 - 4, from the translation by Marchant, 1923). Note that the voice “was always a voice of restraint; its silence implied approval” Myers, 1889, p. 539). On the other hand, Lélut (cited by Myers, 1889, p. 538) goes so far as to suggest that Socrates was, from his fortieth year, insane, because of his trances and the voice.

⁹ According to Lang (1895, p. 212), “It would be impossible for Jeanne, as it was for Socrates, to regard these experiences as other than objective and caused by external influences. Thus I should have no hesitation about considering her experiences mere constitutional externalizations of her ideas. But the evidence showing that the contents of the messages received by her were such as she could not have learned in any normal way is so strong that I am compelled to believe in some abnormal extension of faculty, corresponding to her native and unparalleled genius. To a certain extent, she was admitted within the arcana and sanctuary of the universe.”

mystical experience and psychopathological variables in the clinical groups.) Further interesting findings come from the interview study of the 37 manic-depressives: the transliminality scores of these subjects correlated .38 with number of manic-depression-relevant medications currently being taken ($p = .026$, two-tailed), .40 with the number of hospitalizations ($p = .02$), and $-.51$ with length of time out of psychiatric hospital ($p = .004$). High transliminality and psychoticism therefore seem to have something in common.

Again, within the student sample, those 30 persons who admitted to having ever consulted a psychiatrist had a mean transliminality level (+.27) marginally higher than the 198 persons who had never sought such a consultation ($-.04$), primarily because of higher scores on depressive experience. (Comparisons for manic-depressives and schizophrenics could not be meaningfully performed because virtually all had consulted a psychiatrist. In a similar way, the question "Have you ever been hospitalized for a psychiatric condition?" produced too few affirmatives in the student group and too few negatives in the clinical groups for comparisons to be meaningful.)

We come now to two psychological correlates that, we believe, would have been less easy to predict, knowing the constituents of transliminality. The first is the experience that "in some *symbolic* sense, you have gone through the process of being martyred, of dying, and of being spiritually reborn." This item was intended to tap the Jungian experience of the "Central" or "Messianic" archetype. In all three subject-groups, persons who claimed this experience had a significantly higher mean transliminality score. (Mystical experience and depressive experience were the major differentiators.) It would be of great interest to delve more deeply into what sort of experiences are being referred to here and whether subjects are interpreting the phenomenon literally (i.e., not simply symbolically), as in the cases described by Perry (1974), or figuratively, as when we speak of the light at the end of the tunnel.

Second, one question asked, "Have you ever had the experience in which life appeared to be simply a play, or like a dream in the mind of the Creator?" Again, for all three subject-groups, those people saying "yes" scored significantly higher on transliminality than those saying "no." Indeed, for the students, this question accounted for more variance in the transliminality measure than did any of the other items thus far considered ($\omega^2 = .21$); perhaps it reflects the idealistic, mind-based, matter-repudiating metaphysic to its fullest.

Before concluding this section, we will mention one final correlate that had no relation to any of the three listed propositions. Subjects were

asked, “Have you ever gone through a time when smells seemed stronger and more overwhelming than usual?” Students who said “yes” scored significantly higher on transliminality than did those who reported “no.” This difference was significantly confirmed in the manic-depressives and was in the same direction, though not significantly so, in the schizophrenics. The question that arises is, how can this be, if transliminality is a “susceptibility to *inwardly generated* psychological phenomena”? We previously referred parenthetically to the possibility that the “semipermeable membrane” between subliminal and supraliminal levels might allow ready traffic in both directions across it. In addition, the highly transliminal person may be more subject to stimulation from both the inner *and* the outer directions, including the outside world. In the latter case, we could predict that such people are, for example, more prone to *hyperaesthesia*—extreme sensitivity to external stimulation, which, incidentally, is sometimes a symptom of hypomania or mania (Goodwin & Jamison, 1990, pp. 28, 339)—and also to hypnotic induction, which, again, is an extreme sensitivity of a somewhat different kind to hypnotic suggestions introduced from the external environment.

As for hyperaesthesia, we do not yet have data relating transliminality to this sensory phenomenon, but we do have some evidence from retrospective examination of a previous study (Thalbourne, 1994) that belief in the paranormal may be related to it at least in some respects. In that study, the Perceptual Aberration Scale and the MMPI Schizophrenia scale were used, and between the two of them five items were relevant to hyperaesthesia; these were examined individually and added to form an ad hoc Hyperaesthesia scale (Cronbach’s $\alpha = .76$). The five items and the scale were intercorrelated with a 13-item version of the Australian Sheep-Goat Scale. For a sample of 45 students, and using a one-tailed test, believers in the paranormal scored significantly higher on the Hyperaesthesia scale ($r = +.27, p = .034$). They reported that their hearing was sometimes so sensitive that ordinary sounds became uncomfortable ($r = +.33, p = .015$), and that at times they heard so well that it bothered them ($r = +.25, p = .049$), and (to a marginally significant degree) that often indoor lights seemed so bright that they bothered their eyes ($r = +.24, p = .055$). These novel results may turn out to apply to transliminality too, and seem to be well worth pursuing in a future investigation.

Susceptibility to hypnotic induction appears to have been established as a characteristic more likely to be found in believers in the paranormal. In a recent review of the literature, Wickramasekera (1991) listed nine relevant which together show a consistent and almost invariably significant tendency for persons who believe in or claim experience of

paranormal phenomena to score higher on various measures of hypnotic ability. To this list should be added the research by Roney-Dougal (e.g., 1979), who found that paranormal believers scored higher on a modified version of a scale measuring experiences related to hypnotizability (As, O'Hara, & Munger, 1962). The general finding relating hypnotic ability to belief in the paranormal thus appears to be a robust one. Like hyperaesthesia, it could be examined to see whether it is related to transliminality as well. Positive findings would, as we have suggested, necessitate a broadening of the concept of transliminality, possibly to the point where it includes differential sensitivity at other thresholds, in this case the one between consciousness and the external world. But we leave this for a future study.

In summary, then, highly transliminal people tend to a greater extent to be willing to undertake psychological experimentation, to regard dreams as meaningful and containing guidance, to report experiences of ESP (of the present and of the future), visions of the dead, healing powers, and contact from the Divinity. They report hearing voices and seeing more hallucinations; they experience more paranoid ideation, and are probably more likely to have consulted a psychiatrist. They tend to feel that they have experienced symbolic martyrdom, death, and rebirth, and have wondered if life is a play or like a dream in the mind of the Creator. And, last but not least, they report perceiving smells more strongly at times.

We will mention the results of one last analysis. The transliminality score is made up of scores from six different scales which collectively contain a total of 119 individual items, with which the transliminality scores (for the student sample) were correlated. All 119 correlations turned out to be positive, and in only three cases were they not significant. Moreover, the highest coefficient observed was $+.63$; that is to say, the more a person was convinced he or she was psychic, the more transliminal that person was. A recent study by Hearne (1989) has looked at the personality characteristics of 50 self-styled mediums and psychics. Using the Cattell Sixteen Personality Factor Questionnaire, it was found that this group of subjects could be described as self-sufficient, emotionally unstable, undisciplined, apprehensive, imaginative, and suspicious. The highly transliminal person, in addition to claiming to be psychic, is also likely to display emotional instability, imaginativeness, and suspiciousness (at least about being killed). The two studies therefore appear to be in agreement on at least some aspects of the personality profile of self-styled psychics.

CLOSING REMARKS

Principal component analysis revealed the existence of a single factor underlying paranormal belief, creative personality, mystical experience, manic experience, depressive experience, and magical ideation. Though we have opted to call this single factor *transliminality*, it is important to realize that this concept is only one possible interpretation. There are other concepts that have been proposed which are not dissimilar and which should be mentioned. We have already referred to Roney-Dougal's use of a measure of openness to experience. Mention should also be made of Taft's (1969) concept of ego-permissiveness, according to which an ego-permissive mind allows into consciousness more of what Freud called *primary processes*. Indeed, Freud himself proposed a concept called *flexibility of repression*. Relating this concept to the artist, the psychoanalyst Kris (1953) writes:

The capacity of gaining easy access to id material without being overwhelmed by it, of retaining control over the primary process, and, perhaps specifically, the capability of making rapid or at least appropriately rapid shifts in levels of psychic [i.e., mental] function, suggest psychological characteristics of a definite but complex kind. The most general, one might say the only general, hypothesis advanced in this respect came from Freud (1917 [1963]), who speaks of a certain "flexibility of repression" in the artist. This flexibility, or whatever other and more satisfactory characteristics we might establish, is clearly not limited to the artist: These characteristics are related to those conditions in which id impulses intrude upon the ego and this leads to the question of the extent to which pathological dispositions may be part of what constitutes the artist. It is the problem to which Freud referred when he said (1905 [1953]) that "a considerable increase in psychic [i.e., mental] capacity results from a predisposition dangerous in itself." (pp. 25-26)

It is therefore important to realize that there may be precedents for what we have chosen to refer to as *transliminality*. Also, explanations not derived from psychoanalytic thought may well be possible. But the principal finding is the common thread, and that requires some sort of explanation, regardless of what form that might take.

Our research has placed paranormal belief in the context of a web of interrelationships, and our knowledge of the common factor should enrich research on all its constituent variables. Both the psychology of belief in the paranormal, and clinical psychology, as well as the study of creativity, are thus simultaneously benefitted. For example, Torrance (1971) reports that his Creative Motivation Inventory loads heavily on a

scale measuring *reflectiveness*, defined as “an introspective preoccupation with private psychological, spiritual, esthetic, or metaphysical experience” (p. 98). Especially given Propositions 1 and 2, it would therefore seem highly probable that should a researcher administer the transliminality questionnaire and the reflectiveness scale, the reflectiveness scale would correlate with transliminality and with one or more of its constituent variables.

We conclude with a quote from veteran parapsychologist Rhea White, who points out yet another benefit to be obtained from psychological research of the kind presented in this paper:

Such surveys can provide clues as to what types of [psychic] experiences are being reported and what types of people tend to report them. In fact, one could say that the survey technique and the study of the correlates of paranormal experience provide parapsychology with sounder data at this stage than can be obtained by the experimental method with its vagaries and unpredictabilities when applied to psi. (White, 1990, p. 10).

Transliminality seems to reflect strong relationships between a constellation of personality and attitude variables, including belief in, and alleged experience of, paranormal phenomena. Whether it is also related to positive scoring in controlled parapsychological experiments remains to be seen. That question, and others, are currently being explored in our laboratory.

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*Department of Psychology
University of Adelaide
Adelaide, SA 5005
Australia*

(E-mail: psym-tha@chomsky.arts.adelaide.edu.au)