

## RELIGIOSITY, SCHIZOTYPAL THINKING, AND SCHIZOPHRENIA<sup>1</sup>

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*Summary.*—The relationship between religiosity and the incidence of schizotypal thinking was investigated in a normal sample and in acute and chronic schizophrenic samples. The Rust Inventory of Schizotypal Cognitions was administered to measure schizotypal thinking, and two religiosity measures were developed. Religiosity had a significantly negative relationship with schizotypal thinking in normal subjects, while in schizophrenic patients the relationship was positive and significantly different. It is suggested that the process of existential growth of awareness in the normal development of religious belief, which is thought to be associated with schizotypal thinking, may have proceeded differently in persons suffering from schizophrenia.

Many of the positive symptoms associated with acute schizophrenia and schizotypal personality disorder, such as delusions and hallucinations, are often expressed in religious form (Smith, 1982). Strongly held religious belief has frequently been noted as characteristic of the premorbid schizophrenic (Clark, 1981; Spero, 1983; Dittes, 1971; Margolis & Elifson, 1983). Religiousness is also a characteristic of many groups and sects "at risk" for schizophrenia (MacDonald & Luckett, 1983; Eaton & Weil, 1955; Spencer, 1975). When, however, attempts have been made to relate intensity of religious belief to risk of mental illness, relevant empirical results have been contradictory (Argyle & Beit-Hallahmi, 1975). Some authors argue that research methods have been weak and put this forward as an explanation for the unclear picture (Spilka & Werme, 1971). We have developed and used psychological measures of schizotypal thinking and religiosity which are valid and reliable to explore this relationship.

### *Measurement of Schizotypal Thinking*

It has long been argued that the bizarre idea systems of the schizophrenic, the odd ideas of the schizotypal personality, and normal cognition lie on a continuum (Kraepelin, 1919; Chapman, 1966; Heston, 1970; Spitzer, Endicott, & Gibbon, 1979; Chapman & Jean, 1980). If this is the case, then the position of an individual on this continuum should be psychometrically measurable as with, for example, some subscales of the MMPI

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(Golden & Meehl, 1979). The MMPI, however, emphasizes diagnostic discrimination in the psychiatric patient population at the expense of validity for the normal population.

The DSM-III—R and related category systems (APA, 1987) have now led to the widely held view that the schizophrenic-normal spectrum is not unitary, and it has been postulated (Spitzer, *et al.*, 1979; Crow, 1980; Stone, 1980; Gunderson & Siever, 1985) that different dimensions relate different aspects of schizophrenic symptomology to personality disorder and to the schizotypal personality, respectively. When folk psychological use is considered, personality-disordered individuals or psychopaths have many attributes associated with "bad" people, while schizotypals have attributes associated with "mad" people, and this seems to be an important distinction. Baton (1981, 1985) reports a diagnostic interview specifically designed to diagnose along a spectrum from schizophrenic to normal thought through the schizotypal personality. This instrument is of particular interest as it emphasizes the positive cognitive content of schizotypal ideation rather than the negative aspects of cognitive deficit. It has more affinity with popular ideas of "madness" than do other dimensional approaches to schizophrenia.

A psychometrically constructed, cognitively based, short questionnaire, the Rust Inventory of Schizotypal Cognitions (Rust, 1988b, 1989; Rust & Chiu, 1988; Rust, Moncada, & Le Page, 1988) allows tapping this cognitive schizotypal dimension in the normal population. It differs from previous scales in having been developed and standardized with special attention to normal distribution in the general population, using cognitive theory to generate the relevant test specification (Rust, 1988a; Rust & Golombok, 1989). Although containing no obviously extreme items, its cumulative effect identifies bizarre and eccentric thought patterns, and it can be used to measure the extent of schizotypal ideation in the general population. It takes as its source the idiosyncratic ideas of those who are seen to be schizotypal or eccentric, DSM-III—R category A of schizophrenia and the positive cognitive categories of schizotypal personality disorder (APA, 1987). These schizotypal ideas form the extremes of the cognitive schemata of suspicion, magical ideation, ritual, subjectivity, thought isolation, and self-delusion which are not uncommon in the normal population. The inventory has a test-retest reliability of 0.87 and high validity (Rust, 1988a).

#### *Measurement of Religiosity*

Religiosity is a relatively simple cognitive personality construct closely related to attitude towards religion (Francis, Rust, & Wesley, 1978) and presents no particular difficulties in measurement. In the first study to be reported here religiosity was measured by the sum of two counterbalanced items, and in a second study a 12-item questionnaire was used. The latter had a split-half reliability of 0.76 and also included the two items from the

religiosity measure of the first study. The correlation between the two items and the remaining 10 was 0.62, which sets the lower bound for the reliability of the two-item measure of the first study.

#### METHOD

Two studies were carried out. Study 1 compared a group of acute schizophrenic presenters with a group of normal controls on the correlations between scores on religiosity and schizotypal thinking. In Study 2 this relationship was examined for a group of chronic schizophrenics.

##### *Study 1*

Normal subjects were a sample of 70 men and 70 women from a part-time student, academic and support population at London University. The mean age of the sample was 33.4 yr. Acute schizophrenic subjects were 61 acute presenters meeting the DSM-III—R schizophrenia category A criteria (but often without a formal diagnosis as this is usually only made retrospectively for acute schizophrenia). These patients presented at psychiatric clinics or in acute admission wards in London: the Royal Bethlem and Maudsley Hospitals, St. Mary's Hospital, Dulwich Hospital, and St. George's Hospital. Of these subjects, 19 were then excluded on the basis of DSM-III schizophrenia categories B to F and 11 on the grounds that they were unable to complete the questionnaire properly. Thirteen men and 18 women remained in the acute schizophrenic group: the mean age of this group was 36.4 yr.

The Rust Inventory of Schizotypal Cognitions (Rust, 1988), in the 120-item intermediate construction form (Rust, 1988a), was administered to all subjects. This intermediate form included all 26 inventory items from which scores were calculated. Religiosity was measured by two other items from this construction form of the inventory. The items, "Without my religion I would be lost," and "Religion is not particularly important to me," were both given on four-point response sets from strongly disagree, through disagree and agree to strongly agree. The second item was scored in the reverse direction, giving balance for acquiescence, and the summed religiosity scores ranged between 0 and 6 so that strength of religious belief was measured along a 6-point scale. The estimated reliability of the short measure was 0.62, and the face validity of this item pair was high.

For the normal group the questionnaires were generally administered in groups but sometimes individually. For the patient group all questionnaires were administered individually by a trained psychologist who gave encouragement to patients to complete tasks when necessary.

##### *Study 2*

In the second study the correlation between religiosity and schizotypal thinking was estimated from responses of 25 men and 11 women who were

out-patient and in-patient chronic schizophrenic sufferers at St. Mary's Hospital, London. The mean age of the sample was 39.4 yr. ( $SD = 14.0$  yr.). The mean duration of illness was 12.4 yr. ( $SD = 10.0$  yr.). Schizotypal thinking was measured by the 26-item inventory, religiosity was assessed on an additional 12-item scale. This included a series of agree/disagree items concerning belief in God and was balanced for acquiescence. The split-half reliability of this scale was 0.76, and it had good face and content validity.

## RESULTS

### Study 1

The two groups were not significantly different in age or sex. Analysis of variance comparing the scores on the Rust Inventory of Schizotypal Cognitions of the schizophrenic patient group ( $M = 47.8$ ,  $SD = 9.9$ ) with those of the normal group ( $M = 35.7$ ,  $SD = 7.7$ ) was significant ( $p < .001$ ). For the normal group the Pearson correlation between the inventory scores and the religiosity scores was  $-0.17$  ( $p = .03$ ). For the acute schizophrenic group the correlation was  $0.15$  ( $p = .15$ ). While individually these correlations accounted for little common variance, they were significantly different from each other ( $p < .005$ ).

### Study 2

The mean Rust inventory score of this group of chronic schizophrenics was  $33.0$  ( $SD = 10.8$ ), and the mean religiosity score was  $7.9$ , which did not differ significantly from that of a group of 10 normal controls matched for age. The Pearson correlation between religiosity and Rust inventory scores for this chronic schizophrenic group was  $0.11$ . This was not significantly different from zero but was very close to the magnitude of association between the two measures in the acute schizophrenic subjects of Study 1 and was significantly different ( $p < .01$ ) from the negative correlation of  $-0.17$  for the normal controls in that study.

## DISCUSSION

The significant negative correlation between scores on religiosity and the Rust inventory in normal populations has been replicated in data from two other studies (Rust & Chiu, 1988; Rust, *et al.*, 1988). For a group of 315 Hong Kong 17- to 20-yr.-olds the correlation was  $-0.11$  ( $p < .05$ ), and for a group of 608 Venezuelan university students (the inventory being given in Spanish translation)  $r$  was  $-.12$  ( $p < .002$ ). The difference in size of these correlations can probably be accounted for by sampling differences, the British sample being more diverse in terms of age and social class. Although none of these correlations are large, the consistency across the normal samples and across the clinical samples should be noted. Also, it should be remembered that the absolute difference between the normal and the

clinical groups is about 0.3, which is quite appreciable and gives a pseudo-variance accountability of about 10%.

While the groups were not matched for religious denomination, there is no reason to suppose that this was a confounding factor. Both groups were fairly representative of the inner London general population and, in any event, bias due to religious denomination had been eliminated from the Rust inventory during its construction. While bias due to socioeconomic class remains a possibility, this also is unlikely. Both schizophrenic groups will, of course, have the usual demographic characteristics of this patient population, but it is generally believed that any correlations between schizophrenia and social class are artifacts of the disease itself. The replication of the correlation of religiosity and Rust inventory scores across a large number of normal groups in a variety of countries again suggests that socioeconomic class is not a factor of importance for this particular correlation.

The results of the two present studies, taken together, show a difference between the relationship of schizotypal thinking to religiousness found in schizophrenic patients and that found in normal subjects. While caution must be exercised in drawing causal conclusions from correlational data, the results are compatible with the idea that religious thought is of a different nature in these two groups. While in normal subjects schizotypal thinking seems to be associated with reduced religious belief, in schizophrenic patients the opposite seems to obtain. This might perhaps suggest that in normals scoring high on the Rust inventory, the effects of schizotypal cognitive intrusions lead to a process of existential cognitive growth to accommodate them and a consequent breaking with tradition. In the schizophrenic patients, however, the increased intrusive schizotypal thoughts may have become encapsulated into a rigidly held belief system, often at odds with normal day-to-day cognitive functioning.

Laing (1959), Erikson (1968), and Aaronson (1977) have postulated processes of existential growth of awareness during adolescence which, they suggest, can sometimes develop atypically and lead to schizophrenia in the adult. Fromm (1946) and Rogers (1957) are among many who have drawn attention to the role of cognitive development during adolescence in the development of personal identity and existential maturity in the adult. Religious theorists have frequently emphasized a relationship between existential development and profound religious belief. All of these ideas point to a three-way relationship among religion, existential developmental processes, and the positive symptomology of schizophrenia and schizotypal personality disorder.

Beck, Rush, Shaw, and Emery (1979) and also Beck, Emery, and Greenbaum (1985) have argued that habitual idea systems, ways of thinking, and cognitive schemata are significant factors in the etiology and treatment

of anxious and depressive disorders. Within schizophrenia research, recent emphasis on the positive cognitive symptoms of the acute schizophrenic (Lanin-Kettering & Harrow, 1985) has rekindled interest in the premorbid development of their delusional ideas. Our results suggest that activation of the cognitive schemata in schizophrenic patients may be an even more important factor than it is in depressive or neurotic patients. The processes leading to religious beliefs may be different in schizophrenics from those found in normal subjects. Our results generally support a connection between religious experience and factors associated with the etiology of schizophrenia. There are also implications for research into the effects of occult religious group membership on mental health.

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