do schizophrenics give rare word associations?*

Steven Schwartz

Although Bleuler (1950) described both syntactic and semantic errors as characteristic of schizophrenia, the research emphasis—with certain notable exceptions—has been largely on the semantic irregularities. To put it simply, for over half a century researchers have been trying to show that schizophrenics are confused about the meaning of words. This research has involved several different strategies. Perhaps the oldest is the word-association technique. The results of these studies have been interpreted as demonstrating that schizophrenics give fewer common word associations than non-schizophrenics. This "finding" has in turn become an important tenet of some theories of schizophrenia (see Mednick 1958, for example). Unfortunately, when each study is examined individually, methodological shortcomings and errors in data analysis render the support for the schizophrenia/word-association relationship largely illusory.

Perhaps the earliest and the most widely cited study was reported by Kent and Rosanoff (1910). They found the "insane" to give more idiosyncratic associations to stimulus words than they should according to word-association norms. Unfortunately, their experimental group was not an acceptable group of schizophrenics despite the fact that a large number of its members bore the label “dementia praecox.” Many types of psychopathology, including a large “unclassified” group, were lumped together, making it impossible to determine anything about schizophrenia.

Johnson, Weiss, and Zelhart (1964) also studied the word associations of a heterogeneous group of psychotic patients. The majority were doubtless schizophrenic but differed from the control group in age, sex, educational level, and because they were in the hospital. Any or all of these differences between the experimental and control groups may have been responsible for the finding that psychotics give fewer common word associations than normals.

Sommer, Dewar, and Osmond (1960) in a more sophisticated experiment compared chronic and acute schizophrenics with normals and non-schizophrenic psychiatric patients. The groups were similar in average age and number of males and females but were not equated for years of education. The nonschizophrenic patients were included as a control for, among other things, the effects of hospitalization. An overall chi-square test, performed on the median of the scores obtained by assigning each association a value equal to its frequency of occurrence in the Kent-Rosanoff (1910) norms, was statistically significant. The two schizophrenic groups gave fewer very low frequency associations (Kent-Rosanoff frequencies of 49 or less) than the other two groups. Most deviant, however, were the nonschizophrenic patients who gave considerably more high frequency responses (Kent-Rosanoff frequencies greater than 100) than the other groups. The significant chi-square was as much a result of the nonschizophrenic patients’ performance as the schizophrenics’ performance.
The difference among the groups in their respective zero frequency responses (word associations that never occurred in the Kent-Rosanoff norms) was also statistically significant. This difference, too, seems largely attributable to the nonschizophrenic patients who gave considerably fewer zero frequency responses than either the normals or schizophrenics. The authors were aware that their nonschizophrenic patients seemed to be outperforming their normals. In fact, the authors note that the associations of the nonschizophrenic patients were more common than those of normals, stating that "commonness of association by itself does not indicate good mental health" (p. 667). This disclaimer leads to some conflict later in the paper when the authors attempt to explain that the reason their schizophrenic groups gave fewer idiosyncratic responses than the Kent-Rosanoff group of "insane" patients to the same words was "either that Kent-Rosanoff selected sicker patients for their insane group or, due to tranquilizing drugs and better hospital milieu, patients are not as sick now as they used to be" (p. 668). Commonness of associations, it is argued, does not reflect good mental health when patients are compared with normals but does indicate good mental health when patients are compared with one another.

The experiment was flawed by inconsistencies in the number of subjects for which data were reported. The authors reported in their method section that their study employed 43 normal subjects. They reported median Kent-Rosanoff scores on 46 normals, and later on in the study they reported data on 45 normals (p. 668). The 23 acute schizophrenics described in the method section dwindled to 19 and the 26 chronic schizophrenics to only 23 by the time all of the results were reported. Taking all this into consideration, the findings of this study provide very weak support for the hypothesis that schizophrenics give rarer word-association responses than normals.

Several experimenters used a technique developed by Horton, Marlowe, and Crowne (1963) to measure the commonality of college students' word associations. The appropriateness of using a technique that relies on norms obtained from a sample of college student associations to the Kent-Rosanoff words with schizophrenics who largely came from a non-college population is highly questionable. Nevertheless, articles reporting studies using these norms have been published by Dokecki, Polidoro, and Cromwell (1965) and Ries and Johnson (1967). It is constructive to compare these studies with the one by Horton, Marlow, and Crowne (1963) that reported a commonality score of 14.58 for college students under relaxed conditions (the conditions used in the other studies). Dokecki, Polidoro, and Cromwell (1965) reported commonality scores of 16.08 for their nonschizophrenic patient group, 15.30 for good premorbid schizophrenics, and 9.92 for poor premorbid schizophrenics. Whereas the good and poor premorbid schizophrenics differed significantly, the control group of nonschizophrenic patients did not differ from the good premorbid schizophrenics. Since a higher score indicates more common word associations, it is most interesting that both the nonschizophrenic and the good premorbid schizophrenic subjects gave more common responses than Horton, Marlowe, and Crowne's (1963) college students. The commonality score reported by Ries and Johnson (1967) for schizophrenics hospitalized 5 years or less was also higher than the score obtained by Horton, Marlowe, and Crowne's (1963) college students.

Thus, even when norms for college students are used, nonschizophrenic mental patients, good premorbid schizophrenics, and schizophrenics hospitalized for less than 5 years all give more common associations than college students. Poor premorbid and chronic schizophrenics give fewer common associations than college students, but they are also much lower in intellectual functioning than the other schizophrenic groups. The influence of educational level and intellectual functioning in this experiment is unclear.

There are many other studies that are concerned in some way with the word-association responses of schizophrenics. Some of these
studies used a verbal conditioning paradigm. Frankel and Buchwald (1969), for example, were unable to condition schizophrenics to make common word associations. While this was taken to support the notion that schizophrenics have difficulty learning to make common associations, it should be noted that Deckner and Blanton (1969) found that schizophrenics took longer to learn to choose a weak associate of a word than either patients or normals. When the conditioned response was a strong associate, however, schizophrenics could not be differentiated from normals.

The relationship between the commonness of word associations and schizophrenia was also investigated by Fuller and Kates (1969). Using the Kent-Rosanoff norms, they were unable to find any differences between schizophrenics and normals either in the frequencies of their word associations or in their respective tendencies to give idiosyncratic responses. Similarly, in a study concerned with schizophrenics' ability to inhibit certain responses (a related but somewhat different topic), Lisman and Cohen (1972) found that "when lumping together the associative response frequency totals . . . schizophrenics were equal to normals, giving further support to the assumption that the patients sample from associative repertoires that are essentially the same as [those of the] normals" (p. 187).

This discussion of schizophrenic word associations could continue as there have been experiments not as yet described. For example, Larsen and Fromholt (1976), Russell and Beekhuis (1976), and Traupmann, Berzofsky, and Kesselman (1976) have all reported similar memory organization in schizophrenics and normals. Similar hierarchies of organization imply similar association strategies. Chapman and Chapman (1973) have found schizophrenics biased toward common word meanings. The studies discussed in this paper, however, are the most frequently cited on word associations, and it seems fair to conclude that they provide little support for the hypothesis that schizophrenics give rare word-association responses. Theories based on a relationship between schizophrenia and word associations appear to be in need of revision in the absence of empirical evidence that such a relationship exists.

Summary

For the past 50 years, researchers have been trying to demonstrate that schizophrenics give uncommon word associations. Although secondary sources largely agree that these demonstrations have been successful, a review of the most frequently cited studies reveals that there has been an uncritical acceptance of inadequately documented data. Errors in experimental design, methodology, and even data analysis are described. The support that these data provide for the hypothesis that schizophrenics give rare word associations is illusory. Theories based on the relationship between schizophrenia and rare word associations should either be revised or supported by empirical evidence that such a relationship exists.

References


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