

A Comparison of Twin and Sibling Studies for a Developmental Theory of Schizophrenia

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Studies have clearly established that the concordance rate for schizophrenia is much higher in MZ than DZ twins. Beyond this, it is difficult to generalize the findings to singletons. Analyzing the reports of MZ twins discordant for schizophrenia, Stabenau and Pollin (1967) view the differences between the index case and his nonschizophrenic cotwin, as stemming from an early biological defect or immaturity, which, in interaction with parental handling and other environmental response, may lead to socio-psychological incompetency and, in turn, to gross schizophrenic symptomatology.

In a previous study (Pollack et al, 1966), comparing schizophrenic patients and their nonschizophrenic sibs, we found that patients showed significant psychological (social and personality) deviations from the preschool age through adolescence. We did not obtain significant differences on the biological and very early developmental variables that clearly distinguished the discordant twins. These include birth weight, paranatal complications or motor development, such as age of walking. In contrast, Lane and Albee (1966) found schizophrenic index cases to be lighter at birth than their sibs, confirming the finding for twins. The clinical significance of this difference is debatable, since the index cases did not differ from national norms.

In the present study, we tested the theory of a congenital impairment in schizophrenic index cases, by comparing them with their nonschizophrenic sibs, and a clinical comparison group of nonschizophrenic hospitalized patients and their sibs. Consecutive admissions to a psychiatric hospital over an 11 month-period were included if they were aged 15-35, with a sib in that age range and a mother who had reared both patient and sib, and was available for interview.

There were 46 schizophrenic patients and 64 sibs. Of the latter, 8% were diagnosed as schizophrenic and 14% had been hospitalized for psychiatric disorder. The largest nonschizophrenic group was diagnosed as personality disorder (68), and they had 104 sibs. Only 1% of these sibs were diagnosed as schizophrenic and 6% were hospitalized. All four groups had a mean age of 21 years.

The birth records were analyzed "blind" for paranatal complications. There were no significant differences in birth weight or length between any of these four groups (abnormal sibs were excluded from the comparisons). The rate of prematurity was low in all groups; only one schizophrenic patient was premature, weighing slightly less than 2500 g; none of the sibs of schizophrenics was premature. Three patients and three sibs in the personality disorder group weighed less than 2500 g.

There were no significant patient-sib differences for any of the individual items coded as paranatal complications. When we assigned weighted scores to individual complications according to severity, and totaled these for three separate categories (prenatal, delivery, and postnatal complications), the schizophrenic patients had higher scores for complications of delivery than did their normal sibs. This difference was largely due, however, to an excess of "mild" complications among the patients; only one schizophrenic patient and one sib had "severe" delivery complications.

There were no patient-sib differences for the personality disorder group, and no significant differences between the schizophrenic and personality disorder patients. The sibs of personality disorder patients tended to have more complications than the sibs of schizophrenics.

Thus, it could appear that the uniform findings from twin studies are not enough to build a developmental theory specific to schizophrenia. This is consistent with Shields' (1968) recent review of the evidence in this area. However, the findings cannot be dismissed out of hand. Perhaps, a developmental theory is applicable to a subgroup of the schizophrenias, and a genetic one for the majority of cases. Such a theory was postulated several decades ago by Rosanoff et al (1934).

References

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