

'Genetic Depression' and 'Viral Schizophrenia'

Despite some major problems in defining exactly what schizophrenia is (SN: 9/30/78, p. 230), psychiatrists generally agree that the disorder in many cases has a genetic component. Much of that theory's supportive evidence has come from studies of adoptees, especially the well-known research conducted in Denmark by Harvard University psychiatrist Seymour S. Kety. In work begun in 1962, Kety and his colleagues have examined the biological background of 33 schizophrenics from among the more than 5,000-person Greater Copenhagen sample. The researchers have found that the rate of schizophrenia among the biological parents, siblings and half-siblings of the schizophrenics is nearly four times that of the biological relatives of a matched control group and about five times that of the schizophrenics' adopted families.

Still, the biological relatives of about half of those adoptees diagnosed as schizophrenics show no history of schizophrenia. This means, Kety says, "there must be two forms of schizophrenia: that which is primarily genetic and that which is primarily environmental." At a recent American Psychiatric Association research symposium in Snowmass, Colo., Kety discussed the latest Denmark findings on environmental aspects of schizophrenia and presented still-unpublished data on possible genetic factors in depression.

In a study similar to the work with schizophrenics, a group of 85 adoptees with affective disorder — primarily depression — was found to have a "significant concentration" of depression among biological relatives, Kety reported. The apparent genetic factor in depression is "not as strong as in schizophrenia," but is still three times stronger in biological relatives of depressed persons than in their adopted families, he told SCIENCE NEWS. Of the 18 suicides that occurred among the biological relatives of depressives and controls in the study, 15 were among the relatives in the depressed group, indicating a "genetic factor in suicide," Kety says. "There may be a genetic predisposition [to suicide] among those exposed to certain life situations," he suggests.

But there also appear to be strong "environmental factors at work" in both depression and schizophrenia. UCLA psychologist Dennis K. Kinney found "low genetic risk," schizophrenic individuals in the Denmark study to be more likely to have suffered brain damage through birth complications, encephalitis or concussion than those with a strong genetic predisposition for schizophrenia.

But what Kety feels may be most signifi-

cant is that practically all of the "environmental schizophrenics" were born in the "cold winter months" of January through April. Kety suggests that the risk for birth trauma may be higher in the winter months, particularly in northern areas, such as Scandinavia and northern portions of the United States and other countries.

However, he says, "it is equally possible that some virus may have a peak incidence in that season or, alternatively, in the warm summer months that would coincide with the first trimester of such pregnancies." Though physical evidence of any such virus has yet to be found, Kety believes the hypothesis may fit with the observed greater prevalence of schizophrenia in lower social classes.

"There are viral agents known to attack the nervous system that have properties that may be relevant," says Kety, currently on a year's leave at the Center for Advanced Study in the Behavioral Sciences at Stanford, Calif. "The prevalence of schizophrenia does not show a simple negative correlation with socioeconomic class, but ... is primarily concentrated in the lower socioeconomic classes of larger cities," he notes. "It is also known that schizophrenia has a higher recognized prevalence in urban, in contrast with rural, populations."

Such characteristics point to the possibility of "a virus whose propagation is favored by congestion, poor living conditions and less than optimal hygiene," suggests Kety. A number of bacterial and viral diseases appear to strike under similar conditions, he says. A type of congenitally transmitted virus associated with deafness and school failure was recently found to have twice the prevalence in

lower socioeconomic groups as in middle class populations, according to Kety. However, he goes on, "If a virus is involved in some forms of schizophrenia, it would be a different virus from those now known to affect the nervous system, or at least have a different type of interaction with the host."

Although there is a high incidence of childhood autism among children with congenital rubella infection, most viral disorders of the nervous system seem on the surface to be unrelated to schizophrenic symptoms. But, Kety notes, "many of these disorders involve a psychosis, often misdiagnosed as schizophrenia, in their early phases. The same is true for other neurological disorders in which a virus has not been implicated — Wilson's disease, Huntington's chorea [and] the adult form of metachromatic leukodystrophy, among others.

"This suggests that there are particular regions or pathways in the central nervous system which, when affected by one of several disease processes, produce a schizophrenic syndrome, which may then become more neurologically obvious as the disease extends to other regions. If there were a virus that affected those initial regions and did not spread beyond them, the disorder it produced might resemble typical schizophrenia very closely."

Even if such a viral agent does exist, Kety stresses that it would be just one of a number of contributors to schizophrenia, including genetic background, birth injury and other environmental factors. "There is no reason," he says, "to think that schizophrenia is a single disease, or the result of a single cause." □

U.S. space program: 20 years and changing

Last Sunday, Oct. 1, the National Aeronautics and Space Administration was 20 years old. In a speech at NASA's Kennedy Space Center in Florida, President Jimmy Carter recalled the 20 years of moonwalks, planetary probes, communications satellites and weather-watchers, and declared that "we will not give up our leadership" in space. Yet the U.S. space program is troubled, beset by conflicting views of what its priorities should be, confronted with a growing role in defense strategy, and caught between accusations of ignoring down-to-earth commitments or of failing to realize its full potential for science and exploration.

High administration officials have stated that the civilian space program is at

the threshold of change, and the reference is not simply to the coming of the space shuttle. A key factor is the significance of space activities to national security concerns, now formalized in a space policy directive issued by President Carter earlier this year — a directive whose weight has been likened by officials to that of President John F. Kennedy's declared national goal of a manned lunar landing.

The directive followed an interagency study of then-existing space policy, conducted at the President's request by a policy review committee of the National Security Council. Besides NASA and such space beneficiaries as the Agriculture and Commerce departments, the group included representation from the Joint