

# Holocaust: Parents 'Transmit' Effects

A 19-year-old girl was, in effect, evicted last year from her home by her mother, a survivor of the Nazi holocaust. A short time later the girl was admitted to a psychiatric hospital, the Long Island Jewish-Hillside Medical Center. Her mother visits her nightly, each time standing outside the fence and throwing over a paper bag containing food or clothes — even though an entrance through the fence is located just a hundred feet away.

"They were," say hospital psychiatrists, "apparently reenacting a concentration camp drama."

Syndromes of depression, guilt, anxiety and fear of persecution have long been documented among holocaust survivors. About 10 years ago, however, behavioral scientists began to notice similar symptoms among the children of survivors. In many cases, the children's problems seemed to revolve around fantasies of what their parents did to survive, as well as of their parents' persecutors.

Now, in the first study of its kind of hospitalized second-generation survivors, researchers report evidence of definite holocaust-related illness. Moreover, the onset of such illness in the majority of the 30 patients studied occurred at the same chronological age at which their parents were interned in concentration camps.

This "anniversary reaction" — hinted at in several previous outpatient studies — was present in close to 80 percent of Hillside patients studied, says Sylvia Axelrod, unit chief of the hospital's inpatient service. "There is no conscious awareness of the anniversary reaction" on the part of the children, the psychiatrist said in an interview following her report last week in Atlanta at the American Psychiatric Association's annual meeting.

But the phenomenon apparently is too widespread to be mere coincidence, Axelrod indicates. A male patient inexplicably left his pregnant wife, returned to his parents and "behaved suspiciously." Subsequently, he was twice confined for robberies he didn't commit — both confinements came at the same age at which both parents were interned by the Nazis. His father had been separated from his former wife and child, both of whom were killed.

The anniversary reaction, however, appears to be only one of a number of factors that set children of holocaust survivors apart from fellow patients and others. "Many present atypical [diagnostic] pictures, and a number have defied categorization," Axelrod says. Many of those admitted who are "seemingly psychotic may not be so," she says. "They may be reenacting something in their parents' past."

Such persons may present symptoms of a paranoid schizophrenic — they are

paranoid, distrustful and even delusional on occasion — but Axelrod says they do not respond to the types of drugs that usually affect psychoses. Under conventional criteria, 77 percent of the group under study — average age 25 — were diagnosed as schizophrenics, compared with just 49 percent of all Hillside inpatients. Thirty percent of the sample were labeled paranoid schizophrenic and an additional 27 percent schizophrenic "with major paranoid features." In sharp contrast, only 20 percent of all Hillside patients in the 1975-77 period under study were designated paranoid.

From her own studies and past research results, Axelrod says the children of holocaust survivors who do better and tend to avoid psychiatric symptoms are those who come from families where their war experiences are discussed in an open but "nonhorrendous" way. "The degree to which family discussions of the holocaust and of their preholocaust lives have been

banned and considered taboo may contribute to the severity of the survivor child's psychopathology by inhibiting the development of a secure identity," the psychiatrist says.

Other factors that appear to predispose such children to emotional problems include the severity of their parents' wartime trauma and the smallness of the child's extended family. Axelrod and her colleagues recommend, and have begun, a therapy program that includes the parents as well as the youngster. And while it is too early to assess the treatment's effect, indications thus far are that it is beneficial, she says.

Psychiatrist Robert J. Lifton of Yale University said the Hillside research constitutes "a very important paper. Children of survivors have hardly been mentioned" in past research. "The holocaust was unique," he says. "Nothing like it has ever happened; therefore you can expect transmission between generations." □

## Charting the bat's belfry

A microphone, a recorder and a bat sandwiched in plastic slide along a thin wire. This "batmobile" apparatus, which provides a good enough imitation of natural flight, carries the bat past obstacles in a dimly lit hall at Washington University in St. Louis. It is being used in work with Panamanian mustache bats, which have an unusual sonar system they only demonstrate during flight.

The bats will adjust the orientation signal they emit so that the returning echo has a frequency of 61 kilohertz—the sound to which the bat's ears and brain are most sensitive (SN: 10/30/76, p.278). The bat's orientation sound is a 30-millisecond constant-frequency tone followed by a 4-millisecond tone of decreasing frequency.

Nobuo Suga and colleagues believe that the constant-frequency sound is the ideal signal for detecting and measuring the speed of a moving target. The frequency-modulated signal is better suited for localizing and characterizing the target.

In the primary auditory region of the bat brain, separate areas respond to constant and modulated frequency signals. Suga has recorded the response of individual nerve cells to sounds from loudspeakers. He and colleagues William E. O'Neill and Toshiki Manabe report in the May 19 SCIENCE different organizational patterns in the two areas. They hope that by analyzing brain organization they will be able to identify the basis for acoustic pattern recognition.

Peter H. Zimmerman/Washington University

*Batmobile ride elicits specialized sonar signals. Bat's brain contains differently organized areas to process constant-frequency (cross-hatched) and modulated-frequency (shaded) sounds.*

