

BEHAVIOR

Joel Greenberg reports from New York at the fall meeting of the American Psychoanalytic Association

Grandpa and the Oedipal complex

Good news for parents (especially mothers): You may not be entirely to blame for the wide range of neuroses your children develop as adults. Bad news for grandfathers: You may share the blame with the children's parents.

One of the basic tenets of psychoanalysis has been that the Oedipal relationship between the young child and a parent (most often between boys and their mothers) is a major factor in the youngster's development into an adolescent and adult. An unsatisfactorily resolved Oedipal relationship is thought to be a primary cause of later psychological problems.

Several studies in the last few years, however, have pointed toward the significance of the grandfather as a possible factor in the psychological development of an individual. In a presentation of four case histories, Samuel H. Lerner of Atlanta illustrates that "the grandfather, particularly the father of the mother, becomes a possible source of protection from the omnipotent, demanding mother for the child, whether the grandfather be living or dead, or whether this figure be potent in reality or fantasy." This is particularly true, Lerner says, when the child's father is passive and dominated by the mother. In such cases, "the child is able by means of projective identification with the grandfather to preserve and nourish a sense of omnipotence which was threatened to be lost through the child's relationship to his mother," he says. Lerner suggests that the Oedipal and pre-Oedipal mechanisms remain at the core of the relationship and may contribute to later development and neuroses.

Analytical training: Too few house calls

Some of the major complaints against psychoanalysis are practical ones: It is time consuming and expensive. But it appears that those are the concerns not only of patients but of the spouses of analysts as well.

In a nationwide survey of spouses of candidates of American Psychoanalytic Association-approved institutes, "A significant portion of spouses found psychoanalytic education, by virtue chiefly of taking time away from home activity, to have had a detrimental effect upon the raising of their children and upon their marriage," reports Norman B. Levy at the State University of New York in Brooklyn.

Of the 414 respondents, nearly one-third indicated that analytic training caused more strain than help in their relationships with their spouses. One-fifth said it caused difficulties in raising children and more than a third thought that their spouses' analytic training was a cause of their entering therapy or analysis.

Analysis after death

Analysis, it seems, need not be limited to living subjects. In this case, New York psychoanalyst Stuart Feder presents a study of Gustav Mahler's orchestral song *Um Mitternacht* as a vehicle to analyze the developmental aspects of the composer's life at age 41, when he wrote the musical piece.

Mahler, Feder notes, wrote the music "during a productive summer following a life-threatening illness and subsequent surgery." In an interpretation of the "technical musical detail," Feder's study reveals that the piece represents a "way station" to a "sort of deathlessness, the common immortality of parenthood"—although on the surface it appears to suggest a "turning to the eternal safety of religion."

Mahler's "preoccupation with time in all aspects" reflects his concerns over middle life and anxieties for the future, particularly the imminent threat of death, according to the psychoanalyst.

SPACE SCIENCES

Space Telescope mirror underway

Work has now begun on the huge primary mirror blank for the 2.4-meter Space Telescope, destined to be placed in earth orbit by the space shuttle in 1983. Rather than being cast as a single, solid slab, the weight-saving mirror will consist of a front and back plate, each about 2.5 centimeters thick, fused to an arrangement of struts and plates to create an interior of open cells, each about 25 cm long and 10 cm square. The completed blank will cost \$1.74 million, including the cost of an extra blank in case the original develops a flaw (as happened to the first blank that was cast for the large NASA infrared telescope now being constructed on the peak of Hawaii's Mauna Kea).

The Space Telescope blank is underway at Corning Glass Works in Canton, N.Y., from which it will be delivered in about a year to Perkin-Elmer Corp., which is in charge of the instrument's optical assembly. The mirror is being made of a glass designated Code 7971, an ultra-low-expansion titanium silicate glass chosen in part because it permits the front and back plates to be joined to the inner structure by fusing, thus sparing an expensive machining process.

The 7971 glass is also extremely stable during changes in temperature. The borosilicate glass blank made by Corning more than 40 years ago for the 200-inch Hale telescope had a coefficient of thermal expansion of 32.5×10^{-7} cm per cm of glass per degree C. The expansion coefficient of 7971 (over a temperature range of 5°C to 35°C) is zero (plus or minus, if you want to be picky, 0.3×10^{-7}).

Power-satellite effects studied

The proposed use of "solar power satellites" to provide energy to the earth from orbit by microwave relay faces a major unknown in its environmental effects, particularly since, in a typical concept, there might be 20 satellites each beaming 10,000 megawatts of power to the ground. Now NASA and the Department of Energy have commissioned a study of potential problems by Battelle's Pacific Northwest Laboratories in Richland, Wash. The study covers electromagnetic interference (telephone calls are often relayed overland by microwaves, for example), as well as "biohazards." These could range from inadvertent weather modification, possibly due to passing all that localized energy through the atmosphere, to effects on humans in or near the beam (though the "power density" is claimed to be low).

Space shuttle fuel tank tested

The largest single piece of space shuttle hardware, the 47-meter-long fuel tank for its main rocket engines, has been filled with propellants for the first time, confirming for engineers that it (and its test stand and associated hardware) can properly handle its super-cold liquid hydrogen fuel and liquid oxygen oxidizer. The "tanking" test is an important preparatory step leading to the first static firing this spring of the main propulsion system itself.

In the test, the tank was first filled with propellants, which were then allowed to flow through connecting pipes to, but not into, a mockup set of engines. This was enough to show that the fuel flow could cool the engines down to their operating temperature of several hundred degrees below zero.

During an actual orbital flight, the tank (which is 10 meters longer than the winged shuttlecraft itself) will be fastened to the shuttlecraft's belly, with both units standing on end in the launching tower. When the tank's propellants have been consumed, during the ascent, the tank will be jettisoned to parachute into the ocean.