

Examining the world of obsessive teens

Like a junior version of Lady Macbeth, Cathy became haunted about the time she turned 12 by a constant impulse to cleanse herself. "I would wake up at 6 a.m. to start cleaning myself," she says. "I'd shake my clothes for a half an hour to get the germs off them, and I constantly washed my hands to the point that they bled. I was washing myself about six hours a day."

Cathy had what psychiatrists call obsessive-compulsive disorder. For decades it was considered a disturbance primarily of adults, but the number of children and adolescents suffering from symptoms similar to Cathy's has been "grossly underestimated," according to Judith L. Rapoport of the National Institute of Mental Health (NIMH). These youngsters improve dramatically when treated with an antidepressant drug that blocks the action of the neurotransmitter serotonin, Rapoport reported at an NIMH-sponsored conference last week.

Psychoanalysts, including Sigmund Freud, have described obsessive-compulsive disorder clinically for over 70 years. The latest psychiatric diagnostic manual says that obsessions are recurrent ideas and impulses that are experienced as senseless or repugnant; compulsions are stereotyped behaviors designed to prevent some future event. The obsessions and compulsions cause much distress and interfere with normal function.

A recent survey found that 1 to 2 percent of adults in the United States had obsessive-compulsive disorder in the six months preceding the study. One-third of these people had the disorder during childhood, estimates Rapoport.

She and colleague Martine Flament recently conducted what is perhaps the first extensive survey of obsessive-compulsive disorder among adolescents. They tested 6,000 teenagers in western New Jersey. Some of them had obsessive-compulsive symptoms that did not constitute the full-blown disorder. For instance, one girl in the study—although she functions well otherwise—gets up early every Saturday morning to clean her room meticulously and wash the walls. "We don't know if [she is displaying] an early sign of obsessive-compulsive disorder," says Rapoport. The investigators then interviewed 45 subjects with the highest scores and 24 controls with low scores or with evidence of other psychiatric problems.

Twelve youngsters in the former group clearly have obsessive-compulsive disorder, Flament told *SCIENCE NEWS*. They were selected from the first 4,000 adolescents screened; another 20 to 30 cases will be interviewed from the remaining 2,000 subjects, she adds.

Why would about one-third of 1 percent of these teenagers develop such an un-

usual disorder? Rapoport and Flament have come up with a few clues.

In 1977, they began to study 30 adolescents (including Cathy) with obsessive-compulsive disorder and 30 controls with other psychiatric diagnoses. Half of the former group had symptoms that revolved around cleanliness and constant washing; the other half engaged in a variety of behaviors, such as repeatedly checking to see if lights were turned off or stepping in certain ways to avoid "bad" consequences. All subjects were about 14 years old at the time, but most of the obsessive-compulsives, who were predominantly male, developed the disorder before reaching puberty, says Rapoport. There is no evidence of increased rates of mental illness in the families of obsessive-compulsive subjects, which suggests that the disorder is not hereditary, she explains. The researchers also uncovered no evidence of significant family or environmental stress for the obsessive-compulsive teenagers.

It appears, however, that these youngsters improve markedly when they take clomipramine, an antidepressant drug. Rapoport and Flament alternated placebo and drug treatments for 23 obsessive-

compulsive subjects over a 10-week period. Clinical raters, who did not know when someone was receiving active medication or placebo, recorded striking improvements when clomipramine was administered. This particular antidepressant decreases serotonin in the blood and blocks its uptake. Serotonin may play a crucial role in obsessive-compulsive disorder, "but it's hard to make inferences from drug efficacy to underlying biology," notes Rapoport.

On a number of neurological tests, obsessive-compulsive adolescents show slight deficits, adds Flament. "Still, the findings are not clear," she cautions.

The NIMH scientists' emphasis on biology contrasts with traditional psychoanalytic explanations that focus on the repression of unacceptable thoughts and desires as the cause of the symptoms. In a letter to the *ARCHIVES OF GENERAL PSYCHIATRY* last year, NIMH psychiatrist Thomas R. Insel wrote that active, supportive psychotherapy probably works best with these patients. But, says Insel, "This is a complex cluster of disorders for which there are many assumptions and very little experimental data."

—B. Bower

Monkeys possible source of human AIDS

A virus very similar to the one linked to human AIDS is widespread in African green monkeys and may have been the source of human AIDS (acquired immune deficiency syndrome), reports Harvard University researcher Max Essex. Although the monkeys harbor the virus, they are not affected by it—a puzzle which, if solved, Essex says, could suggest an AIDS treatment or a vaccine.

The finding was announced this week in Atlanta at an international AIDS conference sponsored by several federal agencies and the World Health Organization. Essex and his colleagues made the discovery only a few weeks ago and haven't had time to determine the exact DNA sequence of the monkey virus. But they did detect the presence of antibodies that react specifically to certain selected AIDS antigens. Moreover, says Essex, "Human AIDS sera will react to antigens in the monkey virus, and monkey sera will react to antigens in human AIDS," indicating that human antibodies recognize the monkey virus and monkey antibodies recognize the human virus.

Essex and co-workers at Harvard and the New England Regional Primate Center in Southborough, Mass., looked for AIDS-causing virus in baboons, chimps and green monkeys found in Central Africa, because epidemiologists suspect that the human AIDS epidemic originated in that part of the world. The scientists discovered that about 75 percent of the 30 green monkeys had high levels of

antibody to the human AIDS virus, showing they had been infected with the virus. Conversely, Essex suggests, the green monkey virus could have somehow gotten into humans, sparking human AIDS.

Unlike rhesus monkeys, which can die from infection with simian AIDS virus, the green monkeys were all healthy. "That suggests they've got their own immune system working well," Essex says. The flip side may be that the virus's protein "coat" is slightly different from that of the human AIDS virus. This coat is what the immune system "sees" and reacts to; a modified coat may provoke a stronger, more effective immune response.

If the monkey AIDS virus is a slightly different virus from the human variety, the next step would be to identify how the difference allows monkeys to mount a better immune response and to determine whether a human vaccine could be drawn along the same lines. If and when a human AIDS vaccine is developed, says James Curran of the Centers for Disease Control in Atlanta, "it will probably be desirable to vaccinate all Americans."

Robert Gallo of the National Cancer Institute notes that many green monkeys are also infected with HTLV-I, a virus that causes blood cancer in humans and is in the same family as the virus related to AIDS. But like the AIDS-linked virus, which Gallo identified in humans last year, HTLV-I causes no ill effects in the monkeys.

—J. Silberman