

## The three brains of Eve: EEG data

Despite public fascination with popularized cases of multiple personality — *The Three Faces of Eve*, *Sybil*, and most recently *The Minds of Billy Milligan* — the concept of alternate personalities has never been given much credence within the psychiatric community. Many psychiatrists believe that diagnosed “multiples” are nothing more than clever fakers, and the diagnostic category was reportedly included in the standard diagnostic manual against considerable opposition. Preliminary data from the National Institute of Mental Health now suggest, however, that each of a multiple’s personalities is associated with a distinct pattern of brain waves and suggest, furthermore, that such neurophysiological variability cannot be faked.

In order to test whether personality shifts are accompanied by measurable changes in brain activity, NIMH psychiatrist Frank W. Putnam Jr. measured the “evoked potentials” (brain response to a specific visual stimulus) for each of four personalities of ten patients. In addition, he invited control subjects to create very detailed alternate personalities, which they rehearsed and attempted to simulate during the same test. Each of the primary and alternate personalities was tested five times. While the brain potentials of the controls’ personalities — actual personality and alternates — remained almost identical throughout the trials, the brain activity of the patients’ alternate personalities varied significantly from one to the other, according to data reported at the meeting of the American Psychiatric Association last week in Toronto.

Importantly, the brain waves of the patients’ alternate personalities varied not only on amplitude, a measure of attention, but also on “latency”; latency measures something more “hardwired,” according to Putnam, and the variability points to the possibility of alternate circuitry for alternate personalities. “These changes in central nervous system processing of sensory stimuli,” he suggests, “may underlie the sensory aberrations, memory losses, and markedly altered behavior and conception of self reported by patients with dissociation, depersonalization, and multiple personality syndrome.”

For each subject, Putnam studied the core personality, a child personality, and an obsessive-compulsive personality (a personality ruled by persistent and repetitive ideas or behaviors); and while all of the brain patterns fell within normal range (the pathological personalities would not cooperate), they were as different from one another as the patterns one would expect from two normal human subjects. The brain measures of any one alternate personality were not as consistent

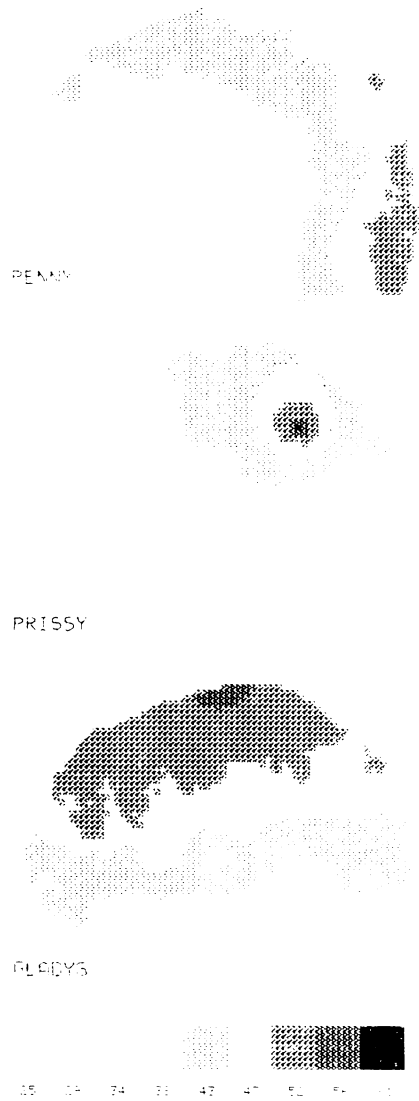
through time as were those of normal subjects, suggesting, according to Putnam, that a patient’s alternate personalities are not as stable as a normal personality. Interestingly, the neural processing of the obsessive-compulsive alternates was very similar to that of obsessive-compulsive patients who do not suffer from multiple personality disorders.

Supporting Putnam’s findings, psychologist Collin Pitblado of the Institute of Living in Hartford, Conn., reports similar results from a study of a single patient’s four personalities. Pitblado has controlled for the effects of fatigue on brain measures, and he says that the brain potentials of alternate personalities have remained stable over 15 months.

While Putnam and Pitblado are cautious about interpreting their findings, the results are being viewed as a vindication by clinicians who have worked with multiple personalities and are convinced that the phenomenon is real. They claim that though the disorder is rare, it is less rare than most believe; rather, it is being misdiagnosed — often as schizophrenia — by clinicians who are skeptical about multiple personalities. This line of research, they hope, will encourage mental health professionals to look more closely for multiple personality disorder, which, they note, is almost always caused by the trauma of extreme child abuse.

—W. Herbert

*Electrical brain maps show markedly different patterns of brain activity for one patient’s three personalities. Gladys is the patient’s core personality; Prissy is an obsessive-compulsive personality; and Penny has the personality of a child.*



## Spatial hormones: Real or ‘hogwash?’

Among men, spatial ability — the talent to visualize objects in space — may be influenced by sex hormones, research reported in the May 20 *NEW ENGLAND JOURNAL OF MEDICINE* by Daniel B. Hier, a neurologist at Michael Reese Hospital in Chicago, and by William F. Crowley Jr., an endocrinologist at Massachusetts General Hospital in Boston, suggests.

They studied the spatial abilities of 19 men who had failed to undergo puberty due to an androgen (male sex hormone) deficiency, 19 healthy men and five men who developed an androgen deficiency after adulthood. The study revealed that the first group had a markedly impaired spatial ability compared to the latter two groups, suggesting that “androgens exert a permanent organizing influence on the brain before or at puberty in boys.”

In an accompanying editorial, however, Jerome Kagan, a psychologist at Harvard University in Cambridge, Mass., points out that the men with sex hormone deficiencies since puberty may have performed poorly on spatial ability tests because of

inferiority complexes about their medical conditions rather than because of some intellectual deficit. John Money, a psychohormonal authority at Johns Hopkins Medical Institutions in Baltimore, is skeptical of the conclusion for another reason, he told *SCIENCE NEWS*: “The whole concept of androgen deficiency and spatial ability, as far as I’m concerned, is hogwash until somebody can measure that the actual brain cells that are supposed to be using androgen are unable to use it and don’t have it...”

Hier says that his and Crowley’s findings do “not address directly the question” of why Western women have generally been found to perform less well on spatial ability tests than Western men have. Anne C. Petersen, a psychologist at Michael Reese Hospital who studies male/female differences, agrees: “Hormones appear to operate in very different ways in males and females, so you can’t use those differences within two male groups to make inferences about sex differences.”

—J.A. Treichel