Behavior

TD hazards among the retarded

It is estimated that somewhere between 15 percent and 25 percent of psychiatric patients treated with neuroleptic drugs develop tardive dyskinesia (TD), a movement disorder marked by involuntary twitching of the mouth, lips, tongue, arms, legs or trunk (SN: 7/20/85, p. 45). That proportion may climb to as high as 34 percent among mentally retarded patients treated with the same drugs, according to a report in the April ARCHIVES OF GENERAL PSYCHIATRY.

In a survey of 38 mentally retarded children, adolescents and young adults withdrawn from neuroleptics after an average of eight years of institutional or outpatient treatment, C. Thomas Gualtieri of the University of North Carolina at Chapel Hill and his colleagues observed 13 cases of TD. The diagnosis was made only if abnormal movements persisted for at least four months after drug withdrawal. Five of the TD patients still have symptoms three years after withdrawal. Eight individuals had moderate to severe symptoms.

Ironically, movement disorders are often masked during drug treatment, appearing after neuroleptics are discontinued. The medication is commonly used to ease psychotic symptoms in schizophrenia and other mental disorders.

It is also widely used with the retarded to control behavior problems, says Gualtieri, although there is little research on its effectiveness in such cases. Videotapes of subjects were carefully assessed and checked by four independent physicians, he notes, in order to distinguish between the often peculiar movements of retarded individuals and instances of TD.

The sample is small and may not represent all mentally retarded patients, says Gualtieri, but "TD, including severe and persistent TD, represents a substantial hazard to young retarded people treated with neuroleptic drugs."

The sweet taste of distress

Ingesting large amounts of aspartame, the ubiquitous artificial sweetener marketed under such names as NutraSweet and Equal, may sour the condition of some severely depressed individuals, according to psychiatrist Ralph G. Walton of Jamestown (N.Y.) General Hospital.

Walton describes one such case in the March PSYCHOSOMATICS. A 54-year-old woman living at home but taking antidepressant medication to quell recurrent bouts of depression suddenly experienced a grand mal seizure. Thereafter, her behavior changed radically and included symptoms of mania — insomnia, euphoric mood, disconnected speech and hyperactivity. A neurologic exam did not reveal a cause for the seizure. The symptoms persisted for three weeks until the woman's family insisted she be hospitalized. Two days after admission and the initiation of lithium therapy, physicians learned that it had long been her custom to consume large amounts of iced tea with sugar. Several weeks before the seizure and behavior changes, she had switched to iced tea with aspartame. Thinking this was more than coincidence, the physicians took her off lithium and advised her to abstain from aspartame. Within four days her symptoms eased and she was discharged. Her antidepressant use was reinstated two months later. Over the next 13 months she functioned well and continues to drink copious amounts of iced tea laced with sugar.

It is unlikely that caffeine in the iced tea provoked the woman's mania, says Walton, since it had been consumed at the same high level for six years. But there is evidence, he notes, that aspartame can cause a marked rise in certain brain chemicals involved in mood and behavior (SN: 8/27/83, p.134). He says a high intake of aspartame probably triggered the woman's seizure and manic symptoms and advises physicians to inquire about aspartame use when examining patients with mood disorders.

Computers

The hacker report

These days, the term "hacker" generally conjures up the image of a clever teenager using his personal computer to peek into secret corporate and government files. Among computer professionals, the term still retains some of its old meaning as a person obsessed with using and exploring computers and communications, but even here the term also covers someone who gains unauthorized access to software, systems and data bases. Thus, hacking covers a multitude of activities and, some would say, sins. The question is: How can society nurture computer talent while dealing appropriately with the computer criminal?

For the past year, the Association for Computing Machinery (ACM), based in New York City, has been grappling with this and related questions. A special ACM panel has now come up with a set of recommendations that it says would "provide security without stifling legitimate curiosity." A brief outline of the report appears in the April issue of COMMUNICATIONS OF THE ACM.

The panel criticizes corporations and institutions for emphasizing security measures rather than promoting educational programs that would demonstrate to budding computer experts the responsibilities of computer use, especially when computers are linked in networks (SN: 11/5/83, p. 294). "If only a small portion of the funds expected to be expended in improving security and reliability were to be channeled toward education," the panel reports, "perhaps a large percentage of the problem could be eliminated."

"If you can bring in an appropriate point of view from the very beginning," says computer scientist John A.N. Lee of the Virginia Polytechnic Institute and State University in Blacksburg, "that might be better than [later] having a course in ethics." Lee, who chaired the ACM panel, adds, "Another concern is that high school teachers themselves don't understand the ethics of the problem because they really don't understand what [a hacker] can do. Kids get away from them too rapidly."

The report recommends that ACM develop a "code of responsible use" that could be used in classrooms. No such statement outlining potentially harmful situations now exists. Interested high school students should also be allowed greater access to advanced computers and networks, says the panel. By working with computer professionals on "real" systems, these students would learn through direct experience the importance of data security and protocols.

"Giving them significant power and controlling that power," says Lee, "is better than allowing them to intrude" into powerful systems. Moreover, the kind of people who become hackers often tend to be very good at testing software and systems. "In some respects, there's a benefit there," says Lee. "If only we could tap it."

Taking a look at Ada

The computer language Ada was specially developed for the Department of Defense as its standard language for all computers built into military systems (SN: 5/14/83, p. 312). Ada was designed so that once a program was written in it, other programmers could easily follow its logic and, when necessary, quickly make any changes. However, Ada is difficult to master, and there is a nationwide shortage of people fluent in Ada.

Now researchers at the General Electric Research and Development Center in Schenectady, N.Y., have started to develop a special computer program that would streamline the writing of Ada software. One approach involves "programming with pictures" (SN: 8/17/85, p. 108). Programmers would be able to generate lines of computer code simply by drawing diagrams or charts on a computer screen. The U.S. Air Force is providing $2.6 million for the effort.