

Memory may not slip when mood dips

Psychologists have identified a number of ways in which a depressed mood undermines the ability to solve problems, learn and remember. Some investigators have shown that college students in a hypnotically induced happy or sad mood have "state-dependent" memory: Recall of a word list is much better if a student is in the same mood during recall as when the list was first learned (SN: 4/18/81, p. 253).

But the recall performance of mildly depressed college students does not appear to differ from that of their nondepressed classmates, say researchers at Temple University in Philadelphia. Studies based on experimentally induced moods may apply to the memory processes of *severely* depressed people rather than to the everyday, mild mood drops of college students, report Lynn Hasher and co-workers in the March *JOURNAL OF EXPERIMENTAL PSYCHOLOGY: GENERAL*.

The investigators completed three similar experiments using 578 subjects. Two standard self-report inventories were used to identify mildly depressed and nondepressed students. All subjects read a short story containing happy, sad and neutral events in a protagonist's life. After a short interval, and in some cases after two days, recall was tested. To see if moods could be intensified, a portion of the students were asked to imagine themselves as the person in the story.

Under all conditions, mildly depressed and normal subjects remembered the same proportion of positive, negative and neutral items. The overall amount of material recalled did not differ either. Mildly depressed students did not selectively recall more negative items than nondepressed classmates.

The study calls into question two major theories that link depressed mood to memory, say the researchers. The first proposes that negative thoughts about oneself and the world strongly influence what is stored in memory as well as which past experiences are recalled. The second theory argues that one's mood organizes incoming information and sets up bridges between related memories that are more easily crossed when the same mood is experienced. But neither negative thought patterns nor mildly depressed mood altered the recall performance of the students in the Temple study. Memory problems are well documented among severely depressed people, note the researchers, but "mild variations in mood seem not to have a profound impact on the recall performance of college students."

D.C. danger patrol

Some patients at St. Elizabeths Hospital in Washington, D.C., are designated "White House cases." To gain that distinction, they first display some type of bizarre behavior at the White House or other prominent public building. They are then referred to the federal mental hospital by a Secret Service agent who considers them to be mentally disordered and potentially dangerous to a public official.

How dangerous, in fact, are these individuals? David Shore and colleagues at St. Elizabeths reviewed Secret Service records of 328 White House cases treated between 1971 and mid-1974. Although 22 percent of this group threatened a prominent politician before or after hospitalization, none of them had made an assassination attempt as of August 1984. One of the patients, however, shot and killed a Secret Service agent in 1980, and two others assaulted nonpoliticians. The typical White House case was an unmarried, white male with a diagnosis of paranoid schizophrenia, report the investigators in the March *AMERICAN JOURNAL OF PSYCHIATRY*. Many patients sought to advise or gain help from the President, who had been incorporated into their delusions as a benevolent authority.

Shore and co-workers are now examining whether White House cases were more likely than the general population to be arrested for violent crimes during the follow-up period.

Save the jaguar

A forest preserve of 170 square miles in Belize has been closed to hunting and farming and opened to jaguar preservation. Forty to 50 jaguars now roam the preserve, which is naturally one of the largest jaguar ranges in Central America.

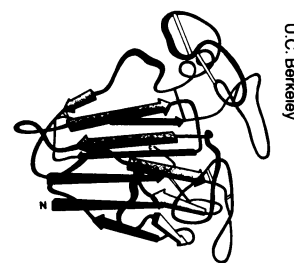
The jaguar is the biggest spotted cat in the world and the third largest of all felines. An adult can weigh 300 pounds. These animals require a large jungle territory to catch adequate prey, but the natural jaguar ranges are rapidly dwindling, primarily because of clearcut farming. The reserve, to be called the Cockscomb Basin Forest Reserve, was established through the cooperation of Wildlife Conservation International (a division of the New York Zoological Society), the Belize government and the Belize Audubon Society. The Cockscomb Basin includes a major watershed, so preservation of the rain forest there is important for preventing erosion and floods, whose damage could even extend, by silting, to offshore coral reefs.

The structure of sweetness

Sweetness lies in the curly loops of a complex protein molecule. Chemists at the University of California at Berkeley have determined the three-dimensional structure of what they believe is the world's sweetest compound, a substance derived from an African berry and called thaumatin I. It is one of the first taste-bearing proteins to be found — and how sweet it is!

About 100,000 times sweeter than sugar, thaumatin I tastes sweet at concentrations as small as 1 molecule in 100 million. With X-ray crystallography, Sung-Hou Kim and colleagues have determined the arrangement of this molecule's protein chain. The molecule has two different features: a series of slats called a beta sheet (a structure commonly found in proteins) and regions of complicated loops.

It is the loops that have attracted the scientists' speculation. They resemble parts of other proteins, such as snake venom toxins and ragweed pollen allergens, that bind to specific receptors. Kim and colleagues report that antibodies that bind to the looped regions eliminate the sweetness of the proteins. They are now determining more specifically which loop areas are crucial in creating a sweet taste.



Gene cloning for the nursery

Premature infants frequently lack a complex lung compound called surfactant that aids in oxygen-carbon dioxide exchange between the blood and the air spaces. The consequence can be lung collapse and respiratory distress syndrome (RDS), which affects 40,000 U.S. infants annually and is the leading cause of infant disease and death in the United States.

A number of studies have shown that administration of surfactant isolated from amniotic fluid or from adult lungs would be a better treatment of RDS than the current approach, mechanical ventilation. But supplies of surfactant are extremely limited. Now scientists at California Biotechnology, Inc., in Palo Alto report they have reproduced the gene for human lung surfactant protein in cells in laboratory culture and have synthesized large quantities of the protein. They plan to mix it with lipids to produce an artificial lung surfactant that mimics the natural mixture of lipids and protein.

The scientists have also developed an assay using monoclonal antibodies to determine surfactant levels in amniotic fluid so as to accurately identify before birth infants at high risk for RDS. The company anticipates a \$40 million annual market for diagnosis of RDS and treatment with artificial lung surfactant.