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Dreams may be gone but not forgotten

You are watching television, mindlessly soaking up a series of fantastic images designed to sell perfume, when memories of a dream you had several nights before come flooding back, along with emotions connected to the dream.

Any of a number of such waking experiences may, with little warning, stimulate dream recall. According to a report in the September JOURNAL OF EXPERIMENTAL PSYCHOLOGY: GENERAL, dreams remain in memory for about as long as other information does, but it often takes an appropriate cue—from a television commercial, for example—to drag a dream out of storage. A cue is essential, since dream material is rarely reflected upon or consciously connected to other aspects of one's life, say Marcia K. Johnson and Tracey L. Kahan of the State University of New York at Stony Brook and Carol L. Raye of AT&T Bell Laboratories in Murray Hill, N.J.

"If a dream is particularly intense, you may mull it over after waking," Johnson told SCIENCE NEWS. "If it is then consciously woven into other strands of your life, you're more likely to remember it."

The results are open to interpretation, caution the investigators.

An initial experiment compared the strength of memories for personal dreams to the ability to remember others' dreams and consciously made-up dreams. Ten pairs of people who live together and reported dreaming frequently were studied. Partners described four nights of dreaming to each other on successive mornings. The conversations were taped. Then, each night for two weeks, subjects were alternately asked to remember a real dream, a printed report of someone else's dream or a dream they made up. Two weeks later, subjects were presented with one sentence from various dream reports that they and their partner had made and were asked to quickly identify who had reported each dream and whether it was real, read or made up.

The subjects had the hardest time identifying whether a real dream was theirs or their partner's, but scores were not much better for read and made-up dreams. When given more cues and an unlimited time to respond, however, 10 new pairs of subjects were better able to distinguish between their own dreams and those of their partners. Their accuracy in identifying the source of real dreams was about the same as their ability to remember the origin of the other dream reports. In this second experiment, subjects recalled about 20 percent of their own dream reports and slightly less of their partner's reports. There was surprisingly little distortion in what was remembered.

This finding goes against the grain of recent reports that many memories, such as those of eyewitnesses, are open to distortion, Johnson points out. The results do not directly confirm or disprove Freud's theory of dreams as symbolic representations of consciously unacceptable thoughts and feelings, she adds.

"There is no greater deficit in dream retention," she concludes. "People can recognize their own dreams and those of others quite well. Free recall [remembering a dream without cues] is what they have problems with."

Notes Johnson, "The striking thing about dreams is that they're suddenly gone [from conscious memory] and then something happens during the day to bring them back."

The experiments have several limitations, she points out: A wider selection of dreams and subjects needs to be studied, subjects may not have reported disturbing or embarrassing portions of actual dreams, and verbal descriptions may have been harder to come up with for real dreams. Another problem is that distortions in memory are poorly understood, explains Johnson. A personal memory may correctly represent a general point about a related series of events. At the same time, the memory may be inaccurate about a particular episode.

But, says Johnson, "to my knowledge, there are no other studies comparing dream retention to memories for similar material." Most dream researchers have studied people in sleep laboratories or looked only at the content of subjects' written dream journals. —*B. Bower*

Satellite planned for first extreme ultraviolet sky survey

Astronomy's first known source of extreme ultraviolet (EUV) radiation was not located until July of 1975, when it was spotted by an instrument aboard the U.S. spacecraft of the joint U.S.-Soviet Apollo-Soyuz mission. There had seemingly been reason not even to bother looking—some theorists had felt that the interstellar medium would absorb EUV emissions (those with wavelengths between the UV and X-ray bands) so that they would never reach the earth, and previous attempts to detect them had been unsuccessful. C. Stuart Bowyer of the University of California's Berkeley campus felt, however, that there might be gaps in the interstellar medium, and that improved detectors could make the difference. And that first detection, he said afterward at the Johnson Space Center in Houston, where he had been monitoring the experiment, "blew us off the console panel."

Nine years have passed, and the number of known EUV sources has grown, but only to between 10 and 20, says Bowyer. That Apollo instrument found four, a few more have been found by the short-wavelength end of the UV detectors aboard the two Voyager spacecraft, and several others have come from the long-wave end of the European Space Agency's Exosat satellite. But the list is short.

Now the National Aeronautics and Space Administration has announced plans for a satellite that will survey the entire EUV sky, just as the Infrared Astronomy Satellite (IRAS) did for the other end of the spectrum. The actual design of the satellite has not yet been chosen, but its scientific payload — four telescopes with markedly advanced detectors and a spectrometer — is known, and NASA already says that the EUV Explorer (EUVE) will be launched by the space shuttle in 1988.

After an initial month of checkout and calibration, EUVE's next half-year will be devoted to the survey, as the satellite's spin-axis is shifted daily so that three of the telescopes will cover the whole sky. The remaining telescope, aligned to point always away from the sun, will be used over the next six months to study selected targets identified during the survey. That portion of the mission will be run as a "guest-observer program," with interested scientists applying for allotments of the satellite's time. "It'll be strictly 'guest,'" says Bowyer, who is EUVE's principal investigator for the survey. "If I want to take part, I'll have to compete just like everybody else."

What will EUVE see through this little-used "window" on the sky? Though four of the presently known EUV sources lie within the solar system—the sun, Jupiter, Saturn and possibly Saturn's big moon Titan—most of the new finds will probably be among the stars. Many are expected to be hot white-dwarf stars — remnants of stars that have consumed their nuclear fuel and shed their outer layers, leaving little more than a nucleus about the size of the earth but with the mass of the sun.

It is possible that the survey may turn up about 100 EUV sources, says Bowyer, taking into account such factors as theories of white-dwarf formation and the numbers of stars that, though not known EUV emitters, resemble our sun at other wavelengths. But surprises are possible, even likely. The first X-ray survey mission suggested that some relatively "normal" stars may be orbited by black holes, while IRAS's pioneering infrared survey yielded what has been called the first direct evidence of solid particles around a star other than our sun. And EUVE will be the first to take such a deliberate, extended look through its particular window.

—*J. Eberhart*