Altered States of Consciousness: Mind Researchers Meet

Exploration of the hidden and uncharted portions of the mind is no longer the sole domain of religious mystics, dreamers, LSD trippers, or schizophrenics.

In one of the first scientific symposia of its kind, a group of brain researchers, chemists, psychopharmacologists, psychologists, and biofeedback and dream researchers recently got together to discuss altered states of consciousness—the kind of brain phenomena which hitherto have been largely ignored by Western science.

The meeting was engineered by the Smithsonian Institution and the Drug Abuse Council, a private foundation-supported organization that promotes research and education in drug abuse. One of its purposes was to discuss how some drugs can be more healthily integrated into society; by "socializing" the use of certain drugs, such as marijuana, some people think standards could be set for their use and destructive use of drugs could be curbed.

Another and more radical idea that is being discussed these days is the possibility that people can be taught to achieve mental "highs" without the use of drugs. This is already happening in some circles where people have abandoned hallucinogens in favor of various types of meditation.

The massive experimentation with mind-altering drugs during the 1960's has expanded awareness of what is possible in the "normal" brain. As Julian Silverman, director of California's Esalen Institute, said: ". . . spontaneous hallucinations in normal individuals were regarded as psychiatric problems." Now mind researchers are discovering that a large number of individuals with healthy, nondrugged minds have occasional "extraordinary" perceptions that were rarely recorded because such perceptions have been regarded as deviant.

The type of mind research described at the symposium is opening up new ways, free of value judgments, for defining different states of consciousness. Pejorative terms such as "schizoid," "regressive," or "primary process" thinking are being replaced by terms which treat this thinking as altered ways of perceiving reality.

What goes on with the brain to produce these phenomena? One appealing theory was offered by Roland Fischer, a Johns Hopkins pharmacologist who talked about "the cartography of inner space." Fischer says that most behavior is governed by the left hemisphere of the brain—essentially the rational, linear-thinking, verbally oriented half, and that this hemisphere is cultivated by experience and education at the expense of the right hemisphere which is the seat of creative, visual, and artistic impulses that govern a different—subjective, nontemporal—consciousness. Fischer says the reasons that most children's artistic impulses start disappearing around the age of 9 is because they are "brainwashed" from the age of 6 onward to use their left hemispheres. Eastern mystics have learned how to shift consciousness to a nonverbal nonlinear state, not necessarily responsive to external reality, the consciousness of dreams and hallucinations—located, Fischer would say, in the right hemisphere. In Western culture the "normal" brain is not expected to have this capacity. Another experience that scientists are now acknowledging as normal is the "flashback," where a scene registered by the everday consciousness triggers a usually inhibited association. A temporary switch of consciousness occurs so that the internal image becomes momentary reality.

These revelations paved the way for some mind-bending tales by Jean Houston, director of the Foundation for Mind Research in Pomona, N.Y. Houston began by theorizing that current fascination with altered mind states and nonrational cults is correlated with the breakdown of social institutions. "The psychological energy that was bonded to these structures tends to go inward," she said. Furthermore, the emotionalism, fantasy, and primitivism evidenced by renewed interest in magic, yoga, and the like represent an attempt to "remythologize the reality that has become so demythologized outside" by the "sacramentalization of science."

So, what with all this "rising of the depths," the time has come to mobilize and use capacities that have never been systematically explored.

Penetrating the Mind's Crust

Houston went on to describe experiments—none involving drugs—whose object is to "break through the surface crust of consciousness" or "cultural trance." To do this, subjects at the Pomona foundation are put into trances through a variety of time-honored means such as hypnosis, drumming, dancing, and yoga. One method is to put a person in a sort of swing with goggles over his eyes so that he is deprived of his usual sensory reference points. Another way is to use bizarre combinations of sounds and lights to create a sensory overload. Whatever the means, the purpose is to overwhelm the normal consciousness so that it goes into a reduction response, and another functional state takes over to supply its own reference points and images. In this altered state, the subject goes through a variety of experiences, such as regression, fantasy, image-making, and hallucinations, which are susceptible to guidance both by the experimenter and the subject.

One of the purposes of such experiments is to help the subject unleash creative energies that are normally blocked. An author, for example, who was unable to write the last chapter of a novel, was put into a trance and instructed to watch and listen to the characters in his book as they finished the story. He did this successfully, and after three more trances, where he put his characters through three different final chapters, he rushed home, unblocked, to finish his book.

These trances were of very short duration because of what Houston called "subjective time"—the same that pertains with dreams. "Most thinking tends to adhere to the movements of the body. In high-level creativity the mind can do weeks of work in a short time." In Houston's lab a pianist worked out an interpretation of a Bach toccata, condensing 8 hours of practice time

to Discuss Exploration and Mapping of "Inner Space"

into 10 minutes; and a songwriter imagined in her trance that she walked down a street, into a cabaret, ordered a sandwich and a beer, listened to a singer render three songs—all in 2 minutes. After the trance she was able to sing the songs, all original, complete with lyrics.

The experiments get close to why great musicians have been able to sit down and have their music virtually pour out of them. This is common with creative geniuses. Houston said that Albert Einstein claimed he thought not only with words but visually and with his muscles, an indication that somehow an "other" state of consciousness was making direct inputs into his rational thinking.

Trance states are used for many other purposes. An 8-year-old girl who suffered from dreams about monsters was instructed to approach and befriend them in her trance. She did so. While this didn't clear up all her problems, it showed, said Houston, that "important behavioral changes can be brought about by working with images on their own terms."

Houston, like Fischer, believes that emphasis on verbal thinking inhibits visual thinking, and that the present educational system "derails" children who may be natural visual thinkers.

There were many ways in which the symposium pointed up the inadequacies of the Western scientific approach. A few years ago science simply dismissed coal-walking yogis, like acupuncture, because the facts could not be explained through their thought systems. Now scientists are taking a new look.

Other cultures have long had techniques for arriving at altered states of consciousness—through such means as chanting, whirling, fasting, breathing exercises, and flagellation. Now such procedures are recognized to have dramatic effects on body chemicals which contribute to the achievement of the desired state. The ability of mystics to undergo with no apparent discomfort intense physical stresses is being explained by the altered sensory perceptions that come with a shift of consciousness. As in drugged states, decreased responsiveness to pain is accompanied by hypersensitivity to low-intensity stimulation because primary sensory pathways are excited while other areas of the cortex are inhibited.

California's Silverman was one of several speakers tempted to make new interpretations of miracles described in the New Testament. When Jesus was wandering and fasting in the desert for 40 days he no doubt did encounter the Devil: the changed pattern of external stimulation as well as what starving did to his chemical balances could well have thrown him into a different subjective reality. Similarly, Moses was having a true "psychedelic" experience when he saw the burning bush (an interesting contrast to one strictly scientific explanation: that certain plants have properties that can give them an incandescent appearance).

Biofeedback training is one way researchers are trying to map altered states of consciousness, and it is also showing the degree to which it is possible for some people to alter them voluntarily. Joe Kamiya of the University of California Medical Center said that people experienced in Zen meditation, for example, can switch in and out of alpha rhythms with great ease, and those who can switch their brain waves voluntarily tend to be more susceptible to hypnosis. Another interesting tidbit is that children with eidetic memory show more alpha waves at the time of this kind of recall —an indication that this ability is not lodged in the ordinary data bank. The reason: ordinary recall requires the kind of active effort that will break the alpha rhythm.

Mind research is creating new definitions of what constitutes "reality." As Alexander Schulgin, a California chemist, pointed out, everything perceived by the mind is reality. Altered states of consciousness are undesirable from a social point of view because people need to perceive a common reality in order to function cooperatively. But considered subjectively these states are not inferior, only different.

Richard Schultes, a Harvard University botanist who specializes in hallucinogenic plants, said that in the thinking of some aboriginal cultures—where such plants are regarded as intermediaries to the gods—it is daily living that is the illusion, and the real truth is delivered by the divinities through the holy plants. Among Mexican Indians, he said, these drugs are an integral part of every major event and ritual, but they are never abused because they are tied up with religious experience.

While there was much talk about psychoactive drugs at the seminar, the real interest was centered on spontaneous and self-induced mind changes.

The plethora of disciplines that have been probing the mind from different angles have hardly had the chance to begin talking to each other and integrating their findings. To remedy this, many speakers recommended the establishment of "inner space labs," a term coined a decade ago by Joel Elkes, chief of psychiatry at Johns Hopkins Hospital. Elkes, who says mind research is still in the "natural history" or descriptive phase, thinks the time is ripe for some true experimentation. Just as physicists had to develop a new language to communicate their concepts, explorers of inner space need to develop new symbolic systems to express the rapid, subtle, and intensely subjective phenomena for which language is a vague, slow, clumsy, and entirely inadequate vehicle. Both researchers and subjects would have to be highly trained to observe and communicate these inner phenomena. And, says Elkes, new ways must be found to accurately correlate physically measurable changes—brainwaves, chemical and hormonal fluctuations—with what's happening inside.

The time may be now. As Houston observed, the astronauts have gone about as far out as man can go at present. Now, "we are perhaps on the verge of a golden age of brain and mind research."

—CONSTANCE HOLDEN