ers of the time believed that the use of hallucinogens enhanced their creative prowess.

Use of LSD, the most widely known hallucinogen, declined after large numbers of users experienced serious, sometimes fatal, effects during the 1960s. In the United States, LSD was classified as a Schedule I drug according to the Controlled Substance Act of 1970. That designation is reserved for those drugs considered unsafe, medically useless, and with a high potential for abuse.

LSD made a comeback in the 1990s, becoming the most abused drug of people under 20 years of age. Its low cost ($1 to $5 per “hit”), ready availability, and a renewed interest in 1960s culture are blamed for the resurgence. A 1993 survey reported that 13% of 18- to 25-year-olds had used hallucinogens, in most cases LSD, at least once.

Drugs such as LSD are often differentiated from less potent psychedelics, which have the primary effect of inducing euphoria, relaxation, stimulation, relief from pain, or relief from anxiety. This group of drugs is exemplified by marijuana, which is available worldwide and constitutes one of the primary money crops in the United States. Opiates such as heroin or morphine, phencyclidine (PCP), and certain tranquilizers such as diazepam (Valium) also belong to this category.

LSD was first synthesized in 1938 by Dr. Albert Hofmann, a Swiss chemist who was seeking a headache remedy. Years later, he accidentally ingested a small, unknown quantity, and shortly afterward he was forced to stop his work and go home. Hofmann lay in a darkened room and later recorded in his diary that he was in a dazed condition and experienced “an uninterrupted stream of fantastic images of extraordinary plasticity and vividness... accompanied by an intense kaleidoscopic-like play of colors.”

Three days later, Hofmann purposely took another dose of LSD to verify that his previous experience was the result of taking the drug. He ingested what he thought was a small dose (250 micrograms), but which is actually about five times the amount needed to induce pronounced hallucinations in an adult male. His second hallucinatory experience was even more intense, and his journal describes the symptoms of LSD toxicity: a metallic taste, difficulty in breathing, dry and constricted throat, cramps, paralysis, and visual disturbances.

LSD is one of the most potent hallucinogens known, and no therapeutic benefits have been discovered. The usual dose for an adult is 50-100 micrograms. (A microgram is a millionth of a gram.) Higher doses will produce more intense effects and lower doses will produce milder effects. The so-called “acid trip” can be induced by swallowing the drug, smoking it (usually with marijuana), injecting it, or rubbing it on the skin. Taken by mouth, the drug will take about 30 minutes to have any effect and up to an hour for its full effect to be felt, which will last 2 to 4 hours.

The physiological effects of LSD include blurred vision, dilatation of the pupils of the eye, muscle weakness and twitching, and an increase in heart rate, blood pressure, and body temperature. The user may also salivate excessively and shed tears, and the hair on the back of his arms may stand erect. Pregnant women who use LSD or other hallucinogens may have a miscarriage, because these drugs cause the muscles of the uterus to contract. Such a reaction in pregnancy would expel the fetus.

To the observer, the user usually will appear quiet and introspective. Most of the time the user will be unwilling or unable to interact with others, to carry on a conversation, or engage in intimacies. At times even moderate doses of LSD will have profoundly disturbing effects on an individual. Although the physiological effects will seem uniform, the psychological impact of the drug can be terrifying. The distortions in reality, exaggeration of perception and other effects can be horrifying, especially if the user is unaware that he has been given the drug. This constitutes what is called the “bad trip.”

Among the psychological effects reported by LSD users is depersonalization, the separation from one’s body, yet with the knowledge that the separated mind is observing the passing scene. A confused body image (the user cannot tell where his own body ends and the surroundings begin) also is common. A distorted perception of reality is also common. For example, the user’s perception of colors, distance, shapes, and sizes is inconsistent and unreliable. In addition, the user may perceive absent objects and forms without substance. He may also taste colors or smell sounds, a mixing of the senses called synesthesia. Sounds, colors, and taste are all greatly enhanced, though they may constitute an unrealistic and constantly changing tableau.

The user often talks incessantly on a variety of subjects, often uttering meaningless phrases. But he may also become silent and immobile for long periods of time as he listens to music or contemplates a flower or his thumb. Mood swings are frequent, with sudden alternations between total euphoria and complete despair.

Some users will exhibit symptoms of paranoia. They become suspicious of persons around them and tend to withdraw from others. Feelings of anxiety can also surface when the user is removed from a quiet environment and exposed to everyday stimuli. Activities such as standing in line with other people or walking down a city sidewalk may seem impossible to handle. Users have been known to jump off buildings or walk in front of moving trucks.
How LSD and other hallucinogens produce these bizarre effects remains unknown. The drug attaches to certain chemical binding sites widely spread through the brain, but what ensues thereafter has yet to be described. A person who takes LSD steadily with the doses close together can develop a tolerance to the drug. That is, the amount of drug that once produced a pronounced “high” no longer is effective. A larger dose is required to achieve the same effect. However, if the individual keeps increasing his drug intake he will soon pass over the threshold into the area of toxicity.

Discontinuing LSD or the other hallucinogens, especially after having used them for an extended period of time, is not easy. The residual effects of the drugs produce toxic symptoms and “flashbacks,” which are similar to an LSD “trip.”

Currently, the most common form of LSD administration is by licking the back of a stamp torn from a perforated sheet of homemade stamps. The drug is coated on the back of the sheet of stamps or is deposited as a colored dot on the paper. Removing one stamp, the user places it on his tongue and allows the LSD to dissolve in his saliva. Because a tiny amount can produce strong effects, overdoses are common.

Teens often experiment with LSD or other hallucinogens in reaction to poor family relationships and psychological problems. Others are prompted by curiosity, peer pressure, and the desire to escape from feelings of isolation or despair. Typical physical signs of hallucinogen use include rapid breathing, muscle twitching, chills and shaking, upset stomach, enlarged pupils, confusion, and poor coordination.

Further Reading
“The Negative Side of Nostalgia.” *Medical Update* 17, July 1993, p. 3.

**Halo effect**

A type of bias where one characteristic of a person or one factor in a situation affects the evaluation of the person’s other traits.

Halo effect is a phenomenon that occurs when one is influenced by a person’s strengths, weaknesses, physical appearance, behavior, or any other single factor. The halo effect is most often apparent in situations where one person is responsible for evaluating or assessing another in some way. Examples of such situations include assessment of applicants for jobs, scholarships, or awards; designating job or committee assignments based on perceived capabilities or past performance; and in evaluating academic, job, or athletic performance. The halo effect can undermine an individual’s effort to be objective in making judgments because all people respond to others in a variety of ways, making true objectivity nearly impossible. However, the halo effect causes one characteristic or quality of an individual to override all others.

To counteract the halo effect, decision makers can break the evaluation process into specific steps, evaluating only one characteristic at a time, but human judgments can never be free of complex influences.

**Handedness**

A person’s preference for one hand when performing manual tasks.

The term handedness describes a characteristic form of specialization whereby a person by preference uses one hand for clearly identified activities, such as writing. For example, a person who uses his or her right hand for activities requiring skill and coordination (e.g., writing, drawing, cutting) is defined as right-handed. Roughly 90% of humans are right-handed. Because left-handed people who are forced to write with their right hand sometimes develop the ability to write with both hands, the term ambidexterity is often used in everyday parlance to denote balanced handedness.

An often misunderstood phenomenon, handedness is a result of the human brain’s unique development. While the human mind is intuitively understood as a single entity, research in brain physiology and anatomy has demonstrated that various areas of the brain control different mental aptitudes, and that the physiological structure of the brain affects our mental functions. The brain’s fundamental structure is dual (there are two cerebral hemispheres), and this duality is an essential quality of the human body. Generally speaking, each hemisphere is connected to sensory receptors on the opposite side of the body. In other words, the right hand is controlled by the left hemisphere of the cerebral cortex. When scientists started studying the brain’s anatomy, they learned that the two hemispheres are not identical. In fact, the French physician and anthropologist Pierre Broca (1824-1880) and the German neurologist and psychiatrist Carl