

behavioral sciences

From the meeting of the Southeastern Psychological Association in New Orleans

Black vs. white drug users

A survey of 3,325 college students was conducted in Georgia to examine developmental characteristics that might differentiate black from white drug users. A 112-item questionnaire was completed by the students (half of whom were black), and information was compiled on age, sex, religion, family background, drug usage and attitudes toward specific drugs. The researchers, Sandra R. Ramsey and Lyle F. Shoenfeldt of the University of Georgia, found that black students reported significantly lower usage than whites of alcohol, marijuana, strong stimulants and hallucinogens. Examining specific factors in the backgrounds of the users, the researchers found that socioeconomic status, race and sex do not distinguish drug users from nonusers. In fact, they conclude, major differences between black and white drug users and nonusers were not identified.

How noise affects aggression

Many situational factors directly affect human aggression. Researchers at Louisiana State University have shown that an environmental factor, noise, can increase aggressive action.

In groups of three, 36 students took part in an experiment in which they were allowed to throw foam rubber balls at one of the experimenters. The subjects thought they were testing the passive resistance of their target and knew nothing of the true aim of the experiment. Test sessions took place under one of three conditions: no noise, unlabeled white noise (a mixture of noise of various frequencies) or crowd noise labeled as cheering at a prize fight. Noise levels were set at 45 decibels above the ambient noise level of the room. The prize-fight noise was included to test the hypothesis that aggressive noise would elicit more aggression than unlabeled noise. Videotapes were made of the three-minute ball-throwing sessions and judges rated aggressive behavior according to how many balls were thrown and how close the subject stood to the victim when throwing the balls.

John Knipmeyer and Perry Prestholdt report that subjects in the white-noise and crowd-noise conditions exhibited significantly greater aggression than did those in the no-noise control groups. The crowd-noise conditions, however, produced no higher levels of aggression than the white noise.

Buck-passing and the mum effect

When someone overhears a message intended for a stranger, that person is likely to deliver the message quite readily if it is good news, but to withhold it or delay it if it is bad news. This is known as the mum effect. A variant of the mum effect is buck-passing, in which people tend, when possible, to let someone else deliver bad news.

Sidney Rosen, Richard J. Grandison and John E. Stewart III of the University of Georgia set up an experiment in which men had to judge job applications. The subject could either inform the applicant (waiting in another room) of the results or have an assistant do it. As expected, the mum effect and buck-passing were operative whenever the test results were bad. The experimenters hypothesized that subjects would feel guilty about passing the buck two times in a row, so they sent in a second applicant. The experimenters were wrong and the buck got passed again.

earth sciences

From our reporter at the annual meeting of the American Geophysical Union in Washington

An ear for meteors

A ground-based network to detect pressure waves from large meteors passing through the atmosphere is being set up by researchers at the University of Michigan.

Under certain conditions such as low atmospheric turbulence, according to Douglas O. ReVelle, the path of a meteor through the atmosphere can be treated as a linear explosion that produces cylindrical pressure waves. The waves weaken quickly as they expand away from the flight path, but, says ReVelle, "it's not really very rare" for observers actually to hear them on the ground.

With certain assumptions about the meteor velocity and type of wave propagation through the atmosphere, he reports, it is possible to use the pressure data to estimate the size of the meteors. Additional information will be provided for future studies from the Smithsonian Institution's automatic, 16-station Prairie Network, which photographs fireballs and meteor trails in the sky.

Venice is getting in over its head

The slow sinking of Venice, Italy, is becoming such a severe problem that artificial barriers may be necessary to close off the city's lagoon during times of high water. Unless some such system is devised, says Michele Caputo of the Università degli Studi in Bologna, the water "will swallow the city."

The city has subsided about one meter since 300 B.C., so that now people have to cross some plazas on elevated board platforms to keep their feet dry.

One way of periodically closing the lagoon, Caputo says, might be to build a flexible, tubular barrier that could be filled with water to expand it for use; the rest of the time it would lie flat.

The lagoon's waters would also need to be circulated to keep down pollution. Although Venice has avoided most of the pollution and transportation problems of heavy automotive traffic, other than that "Venice is subjected to the most massive attack which the development of industries ever did on a city." A wall-like barrier that changes its angle as the water rises might be a solution, Caputo says, with notches to allow enough of the water through to reduce the pressure on the wall and provide some circulation.

Windmills for water

Large, slow underwater machines like windmills could be a promising source of fuel-free, nonpolluting electric power in the Gulf Stream off the Miami coast, suggests John R. Apel of the National Oceanic and Atmospheric Administration's laboratory on Virginia Key, Fla.

An optimum spot would be the Straits of Florida which pass between Miami and the island of Bimini, where the flow of the current is channeled and steady, varying by only about 20 percent above or below normal, reports Apel together with William S. von Arx and Harris B. Stewart Jr. of the Woods Hole Oceanographic Institution.

About 0.8 kilowatts of power per square meter could be obtained from the upper levels of the current, the researchers estimate. This would be an improvement over the 0.22 kilowatts available from sunlight over Miami, says Apel, which would be reduced another 75 percent by the inefficiency of solar cells.