BEHAVIOR

Falling for the ancient astronaut story

Why do so many people react favorably to Eric von Däniken's myth of ancient astronauts visiting the earth? No one knows for sure, but William Sims Bainbridge, professor of sociology at the University of Washington in Seattle, has tested what he feels to be the four theories most likely to explain such beliefs and has found some interesting associations.

Strain theory holds that unhappiness and psychological tension may drive people to seek new alternatives, to accept exotic beliefs and to experiment with novel lines of action. *Control* theory holds that persons not strongly attached to the conventional intellectual establishment will feel free to adopt deviant beliefs. According to *cultural-deviance* theories, some people will believe in von Däniken because they belong to a subculture or social network that encourages belief in such theories. *Trait* theory assumes that a person's behavior is determined by individual characteristics (innate or learned), such as sex, degree of intelligence or readiness to follow feelings and desires rather than be guided by facts.

To test these theories Bainbridge showed the film *In Search of Ancient Astronauts* to 235 university students. The day after the showing he asked the students to fill out questionnaires that included items designed to measure, among other things, students' acceptance or rejection of von Däniken's theory. He reports in the current issue of the SKEPTICAL INQUIRER (Vol. III, No. 2) that strain theory and control theory, which have helped explain such deviant behaviors as crime and drug abuse, failed to explain acceptance of von Däniken's theory. Dissatisfied students were not especially likely to accept the theory, and students' attitudes toward science and technology were not related to acceptance of ancient astronaut theories. "The failure of control theory is probably most remarkable," says Bainbridge. "Apparently our university does not give students the knowledge to protect them from intellectual fraud."

"Both *cultural-deviance theory* and *trait theory* seem much more promising," Bainbridge continues, although he admits, "we cannot yet specify the exact sources of von Däniken's support." The strongest association Bainbridge found linked belief in ancient astronauts to other occult and pseudoscientific beliefs (such as ESP, astrology and biorhythms), confirming, he says, "that the idea of ancient astronauts is part of a generalized occult and pseudoscientific subculture."

The test of trait theory found that males and females respond equally favorably to von Däniken's theory and that a moderate association exists between acceptance of the theory and low grade-point average. "Less intelligent students," says Bainbridge, "are more likely to believe in ancient astronauts. Is this trait," he asks, "equivalent to gullibility?"

Bet you can't eat just one

"Obese" is a term that applies to perhaps 20 million persons in this country — those who are 20 percent or more over normal body weight. Of these, about half are compulsive eaters. And for them life is a case of constant munchies. They don't eat one cookie. They eat the whole package. Now comes possible help in the form of a little-used antidepressant drug. Judyth M. Box of the psychiatry department at Ohio State University reports that protriptyline hydrochloride affects a person's compulsion to eat beyond normal limits. "It isn't a miracle drug by any means," says Box. But during an 18-week test, 26 overweight women successfully lost weight using the drug. Box thinks compulsive eating may be a specific organic disorder that has nothing to do with willpower, and she says the ability of protriptyline to keep the appetite within manageable limits supports the organic theory of obesity.

EARTH SCIENCES

Heart attacks and magnetic activity

Changes in the earth's magnetic field, caused by the flux of solar particles and believed to have a role in controlling the atmosphere, have also been linked with the occurrence of some medical problems. Most such correlations have been criticized for the sloppiness of their statistics. But, in the Feb. 22 NATURE, two researchers present what they call a "particularly high" correlation between heart attacks and magnetic activity that can be "demonstrated convincingly" by statistical tests.

S.R.C. Malin of the Institute of Geological Sciences in Edinburgh, U.K., and B.J. Srivastava from the National Geophysical Research Institute in Hyderabad, India, studied the number of cardiac emergencies admitted between 1967 and 1972 to the main hospitals in two cities in India. They correlated those numbers to a measure of the daily geomagnetic activity (called the Kp index) during the same period. The researchers eliminated seasonal effects and long-term trends by considering the data one month at a time and, by applying the standard *t*-test, they found the correlation to be highly significant. Out of the 72 correlation coefficients, 62 were significant at the 5 percent level, 38 at the 1 percent level and 11 at the 0.1 percent level, compared with an expected 4, 1 and 0 at the respective significance levels. The researchers do not speculate about the cause of the correlation, except to suggest a common solar origin of the phenomena.

Earthquake prediction in Europe

The European Space Agency and the Council of Europe have announced the beginning of a European research program on earthquake prediction. The program, projected to be in full swing by 1990, was proposed this month in Strasbourg at a seminar sponsored by the two groups. It will involve about ten countries and will concentrate on the Alpine-Mediterranean belt that runs from Turkey through Italy and Spain to the Azores. One goal is to draw a new seismic map of Europe.

The program will combine data from ground stations, satellites and aircraft. Geophysical, geodetic, astronomical, geochemical and other data will be gathered from approximately 150 existing fixed and mobile stations. Data will be transmitted by satellite, and images will be supplied by existing laser-equipped satellites and from satellite-assisted very long baseline interferometry. The European-Mediterranean Seismological Center in Strasbourg is proposed as the data handling center.

Moving experience in Arizona

Slow movement along a fault midway between Tucson and Phoenix, Ariz., which produced a 10-mile-long, one-foot-high ridge, has been triggered by pumping groundwater from the area, according to a report from the U.S. Geological Survey. According to the report's author, Thomas L. Holzer of the USGS in Menlo Park, Calif., more water has been removed from one side of the fault than from the other, causing the rock on one side to subside and compact and triggering the movement.

In a separate report in the Feb. 10 JOURNAL OF GEOPHYSICAL RESEARCH, Holzer, Stanley Davis of the University of Arizona and Ben E. Lofgren of the USGS describe why they attribute the movement to groundwater removal rather than to earthquake activity. First, the size of the ridge is much higher than would be expected from regional tectonics. Second, the fault zone does not extend deeper than would be expected from stresses due to water level decline. Third, faulting began in 1961, after the removal of groundwater caused the area to subside.

The fault is about 55 miles southeast of Phoenix and 40 miles northwest of Tucson, near the town of Picacho, Ariz.