BEHAVIOR

Right brain gets drunk first

Alcohol has a greater effect on right hemisphere functions of the brain than on left hemisphere tasks, report researchers B.C. Chandler and O.A. Parsons in the latest issue of the JOURNAL OF STUDIES ON ALCOHOL (38:3).

In a study of 40 right-handed college students at the University of Oklahoma Health Sciences Center, Chandler and Parsons found that the right-brained functions of matching shapes presented on a screen were considerably more impaired among alcohol drinkers than the left-brained tasks of verbal associations. The performance of the drinkers—each of whom consumed enough alcohol-orange drink mixture to reach a blood alcohol content of 0.1 percent—was compared to that of placebo groups on both matching and association tasks.

The results show that the reaction time difference between drinkers and placebo subjects was considerably greater in nonverbal matching than in verbal tasks. The researchers further found that it took alcohol groups longer to search for objects in the left visual area (control by the right hemisphere) than in the right visual area, as compared to placebos. They conclude that while alcohol can affect left-brain functions, such as speech and language, such disruptions did not show up using the amount of alcohol employed in their study. "Apparently," they say, "the right hemisphere has a lower threshold for disruption than the left hemisphere." The research was partially supported by a grant from the National Institute of Mental Health.

Misdiagnosis: A schizophrenic no longer

The police knew him well, and the emergency room staff knew exactly what to do when the 24-year-old man came in grunting, rolling, rocking, sucking, blowing and grinning. Without delay, he was given 100 milligrams of chlorpromazine, and shortly afterward, an identical dose. About three hours later, the patient rubbed his eyes as if he had just awakened and calmly asked for a cigarette. An obvious schizophrenic? That was the diagnosis for each of the 30 times the man was admitted to the Western Psychiatric Institute and Clinic (WPIC) in Pittsburgh in a five-year period. But the diagnoses were wrong. All those years, the man was suffering from "complex partial seizures" (psychomotor epilepsy) and was not mentally ill, reports Victor R. Adebimpe of WPIC in the March 28 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The man's previous medication was replaced with an antiseizure drug following the discovery and he "remained well," with only one seizure in six months.

Goodbye forever, sweetie . . .

The age-old stereotype of the subservient, retiring woman, complete with dishpan hands, is gone forever—at least according to Diane Kravetz. Out of Madison, Wis., the death knell for that type of thinking has been sounded by the University of Wisconsin social psychologist. "The stereotype," proclaims a university news release, "has come to a timely end."

In a study of 150 women—75 of whom were "active members of the women's liberation movement"—Kravetz has determined that "the women's movement has shattered time-worn notions of how women should behave." Those surveyed pictured women as more aggressive, less emotional and more comfortable in leadership positions—"in short," according to Kravetz, "as valuing 'masculine' traits more than in earlier studies. Studies from as little as 10 years ago revealed extensive agreement concerning characteristic differences between man and woman." Does all this mean males and females are becoming similar? "Without a doubt," she replies.

PHYSICAL SCIENCES

Toward a measure of quark charge

The first evidence that protons and neutrons might be made up of subparticles called quarks came from experiments in 1968 and later in which electrons were bounced off protons. The electrons seemed to bounce from hard little things inside the protons, which the experimenters named partons. Gradually physicists began to accept the notion that the experimentally discovered partons were the predicted quarks.

But there have been experiments involving the scattering of photons or particles of light off protons that didn't seem to agree. Too many photons were produced, and this could mean something was wrong with the quark-parton model.

In the hope of resolving the problem a group of physicists from the University of California at Santa Barbara (D. L. Fancher and seven others) have done an experiment that compares electron-proton scattering with positron-proton scattering. The result, they report in the April 11 PHYSICAL REVIEW LETTERS, indicates nothing wrong with the quark-parton model and puts limits on the amount of electric charge possessed by the quark-partons. The figure quoted is 0.89 ± 0.34 of an electron charge. One current theory says the quark charge is equal to the electron charge; another says it is ⅓ or ⅔ the electron charge. The error limit on this figure is too large to distinguish between the two, but it is a step on the way to a better determination.

Deep in the heart of hadrons

Hadronic matter is what particle physicists call the stuff protons and neutrons and all their many relatives are made of. Its counterpart is leptonic matter (electrons, muons, neutrinos), and the two are often treated as if they were two different substances in the Aristotelian philosophical sense.

When two protons collide, they produce a blob of hadronic matter that emits pions, particles that represent hadronic matter at its purest. In the April 18 PHYSICAL REVIEW LETTERS, a group of experimenters from Purdue University, Tufts University, the Center for Nuclear Research at Strasbourg and the Fermi National Accelerator laboratory (C. Ezell et al.) report that they have been able to measure the size and lifetime of this pion-emitting blob. It is 0.73 fermis by 1.65 fermis (a fermi is 10^{-13} centimeter), and it lives for about 10^{-24} second.

Made near the Black Forest by . . .

West Germany's powerful new heavy-ion accelerator called Unilac, which is located near Darmstadt, has fulfilled one of the guiding dreams of medieval alchemists. It has turned a base metal to gold.

According to a report by Deutsche Presse Agentur, the transmutation took place by bombarding a uranium target with uranium ions accelerated to 1.8 billion electron-volts energy. This energy is not enough to accomplish a complete fusion of the accelerated uranium nuclei with those in the target, but a certain exchange of neutrons and protons does take place. The result of this process is that one of the uranium nuclei becomes gold. The other becomes what the experimenters of the Society for Heavy Ion Research were really looking for, a nucleus of element 105. The main purpose of the experiments is to make transuranic elements.

What advantage there is in making gold this way would seem to depend on a comparison of the current price of uranium with the latest quotation for gold, but what will the seven dwarfs do now?

Heigh, ho, heigh ho,
It's on the dole we go.