

Schizophrenia: Gender connections

There are preliminary indications that the corpus callosum — a bundle of nerve fibers connecting the right and left brain hemispheres — displays gender-specific abnormalities among schizophrenics, according to a report at the annual meeting of the American College of Neuropsychopharmacology held last week in Washington, D.C.

Significantly fewer fibers connecting the frontal lobes, compared with fibers connecting the occipital lobes, were found among 24 right-handed schizophrenic males, while the reverse was observed among 10 right-handed schizophrenic women. In a group of 41 healthy volunteers, the same comparison revealed more frontal lobe fibers among males and more occipital lobe fibers among females, according to Henry A. Nasrallah of Ohio State University in Columbus and his colleagues.

The data, which are based on magnetic resonance images of each subject's corpus callosum, suggest that communication between the frontal lobes and overall frontal lobe functioning may be decreased among schizophrenic males, say the researchers; conversely, frontal lobe communication and activity may be abnormally elevated among schizophrenic females. The investigators note that other brain imaging techniques, such as those measuring cerebral blood flow and glucose metabolism, should be used to clarify gender differences in schizophrenics' brains.

Airborne and hung over

Even 14 hours after drinking enough alcohol to become legally intoxicated, airplane pilots may find that the skies are not friendly. Lingering "hangover effects" can interfere with pilot performance and reactions to emergencies, according to a report in the December *AMERICAN JOURNAL OF PSYCHIATRY*.

Jerome A. Yesavage and Von Otto Leirer of Stanford University School of Medicine charted the performance of 10 experienced Navy pilots. Each flew two simulated flights, the first after abstaining from alcohol consumption for at least 48 hours, the second 14 hours after consuming ethanol mixed with diet soft drinks at a dose equal to five to seven 6-ounce glasses of wine. All subjects attained blood alcohol concentrations widely accepted as evidence of driving while intoxicated.

One simulated flight involved the loss of two of four engines on one side of the aircraft during takeoff. The other scenario concentrated on a return to the airport and the same runway, again with the loss of two engines on one side.

Pilots performed worse in the hangover condition on a number of measures, say the researchers. The ability to control the aircraft's turn toward the side of the power loss dropped significantly on takeoff, they note. The same ability also suffered on landing, but not to a statistically significant degree, as did the ability to keep the aircraft properly aligned vertically and horizontally on takeoff and landing. The spread of individual scores did, however, increase significantly for errors in keeping the aircraft pointed in the proper direction on takeoff and landing, and for errors in vertical alignment on landing. This indicates that while average scores for these measures did not substantially drop, performance decreases for some pilots were much greater than for others.

Furthermore, say the researchers, pilots generally did not report awareness of the hangover effects. Pilots whose flight performance markedly dropped the day after smoking strong doses of marijuana were also unaware of hangover effects (*SN*: 11/16/85, p.310).

The alcohol dose administered to the pilots was high, acknowledge the researchers, but they say the results "suggest concern about the performance of those entrusted with complex behavioral and cognitive tasks within 14 hours after drinking enough alcohol to be considered legally intoxicated."

Fishy fear of the known

Courage and innocence, the poets tell us, are admirable traits. But in some cases it's much wiser just to turn tail and run — or, as research at the Oregon State University Hatfield Marine Science Center in Newport shows, to turn fin and swim.

Fish hatcheries in the Pacific Northwest and throughout the world release millions of young salmon every year, but typically only about 5 percent survive the hostile ocean environment and return to their freshwater spawning grounds. And that figure can inexplicably fluctuate from year to year.

In an unusual laboratory with fish tanks inside fish tanks, Oregon State professor and National Marine Fisheries Service scientist Bori Olla is trying to instill in salmon the fear of cod, a natural predator of the commercially valuable salmon. He is teaching the "naive" hatchery salmon a lesson in life by either putting them in a tank surrounded by transparent Plexiglas with hungry cod hitting the other side of the walls, or else dropping dead, frozen cod in their midst.

According to Olla, who says salmon learn very quickly, the most "startling" results thus far are those showing varying vulnerability in individual fish to very subtle stresses affecting the likelihood of surviving an attack. Olla thinks that hatchery fish — unthreatened by the humdrum safety of their tanks — may be taught prophylactic cowardice through measures as simple as periodically disturbing the water's surface or dropping in artificial predators.

"Salmon have evolved mechanisms of recognizing predators and live prey," he told *SCIENCE NEWS*. "We're awakening a memory." Olla says preliminary laboratory results have shown some "very dramatic differences" in salmon survival, suggesting that commercial hatcheries might adopt some scale-raising techniques of their own.

Feline hyperthyroidism a mystery

When an older cat becomes restless, loses weight despite eating heavily or develops an increased heart rate, it may be suffering from overactive thyroid function, or hyperthyroidism. Scientists in several veterinary research centers across the United States are trying to unravel the cause or causes of what can be a fatal disease if left untreated. Although hyperthyroidism has long been described in humans, the feline form of the disease — similar pathologically to a rare human type — apparently is a new disease.

Recent research has focused on environmental factors, such as food or toxic agents, as potential causes of the disease. As yet, no hard data have confirmed these suspicions or supported observations that the disease is more prevalent in the Northeast. Scientists at Tufts University School of Veterinary Medicine in Boston hope to provide more concrete answers to some of these questions within the next few months.

First noticed by veterinarians in New England in 1980, the disease affects cats more than 6 years old. Certain cats may develop goiter while retaining normal thyroid function, suggesting that the thyroid gland may enlarge first, leading to secondary hyperthyroidism. Diagnosis is made using a simple blood test; possible treatments include surgical removal or irradiation of the thyroid, with subsequent hormone therapy.

Return of the rara avises

It isn't Santa's reindeer, but something nearly as rare that helicopter-riding game officials are rounding up this month in Newfoundland. Hoping to reestablish the caribou in Maine, game officials have captured the first caribou cows and stags, which will serve as a nursery herd. Their offspring are expected to repopulate a Maine park — part of a growing trend of reintroducing species to regions they were forced out of by humans.