BEHAVIOR

Seeking the secrets of shyness

Shyness can be a serious social disease. Shy persons have trouble meeting people and making friends. They often feel depressed, isolated and lonely. They may have trouble expressing opinions and projecting their assets. Such nonbehavior on the outside is often accompanied by chaos on the inside. Increased pulse, blushing, perspiration, butterflies in the stomach and a pounding heart are often the result of shyness.

Not only can shyness be a serious social and physiological problem, it may be a much more widespread phenomenon than is commonly believed. Of 800 students recently interviewed, more than 40 percent considered themselves to be shy. Most didn't like being shy, and many said they would go to a shyness clinic if one existed. "Findings like these suggest that most psychologists haven't taken shyness seriously enough," say researchers in the May PSYCHOLOGY TODAY.

But the researchers involved do take shyness seriously. They are Philip G. Zimbardo, Robert M. Norwood and Paul A. Pilkonis of Stanford University. Their initial studies suggest that shyness in the United States is a consequence of cultural norms that overemphasize competition, individual success and personal responsibility. The same is not true crossculturally. Researchers recently back from China, for instance, report that they did not see a single shy child among the thousands they observed. If shyness is the result of cultural learning, it can possibly be unlearned. The Stanford group suggests that various types of modeling and assertive training (like Dale Carnegie courses) might bolster the self-confidence of shy people. It also seems likely, they say, that the mere knowledge of how widespread shyness is might help people feel less isolated and embarrassed.

Death, dying and reality

Facing death is a relatively common experience for doctors, nurses and members of the clergy. One might expect, therefore, that people going into such professions would have fairly realistic attitudes toward death and dying. But this does not seem to be the case, according to a study of medical, nursing and divinity students at McMaster University.

Students enrolled in a course entitled Death and Dying and Terminal Care were presented with authentic-looking death certificates on which their names had been entered. They were asked to complete the forms in the way they expected their own death certificates to be filled out. Results of the study appear in the May JOURNAL OF MEDICAL EDUCATION. Some students were unable to fill out the certificates; some filled them out but refused to let anyone see them; two returned the forms to the professor but asked that they be burned after he had taken the information from them. Only 30 of the 78 students actually returned the death certificates. Those who did predicted an average age at death of 70.3 years. Michael A. Simpson, who conducted the study, concludes: "The results show that a group of students in health professional training, even after considering the facts of death in the abstract, still project very unrealistic perceptions of their own deaths."

Finding a registered psychologist

Next month, the first edition of the NATIONAL REGISTER OF HEALTH SERVICE PROVIDERS IN PSYCHOLOGY will be published. The register, the first of its kind for psychologists, will help consumers, insurance companies, legislators and government agencies identify practitioners who have appropriate training and experience in health-care delivery. Of the more than 24,000 licensed/certified psychologists in the United States, only 7,000 will be listed in the first register. More are expected to apply in the near future.

CHEMISTRY

Clam belly enzymes: Pollution to potion

Pollution comes in many forms. Take surf clam bellies, for example. They may not be foremost in the public's pollution consciousness, but in certain areas along the eastern coast where surf clamming is an important industry, surf clam bellies are a pollution problem. The digestive tracts and shells, an estimated 3 to 4 million pounds per year, had been discarded in coastal waters until pollution control regulations put the clamps on that practice. So now, clam processors are looking for other alternatives—preferably profitable ones.

Enzyme chemist Robert Shallenberger from Cornell University's New York State Agricultural Experiment Station at Geneva may have found the answer. He analyzed clams' digestive enzymes and found that the major active enzyme is laminarinase, capable of breaking down the complex carbohydrate laminarin found in marine plants. This enzyme holds promise for several medical and industrial applications, but had never been available in large quantities. Millions of pounds of clam bellies are, however, quite a large source.

Laminarinase has been found effective, for example, in declogging brewery filters. Dental researchers are testing this and similar carbohydrate enzymes as possible additives for toothpaste to break down the plaque that forms on teeth. And the enzyme might be useful for burn patients who are susceptible to mold infections. The enzyme might break down complex carbohydrates in the fungal fibers that clog blood vessels during infection, Shallenberger says.

What happens to the clam bellies and shells after the useful enzyme has been removed? Shallenberger has another idea—use them, perhaps, as fertilizer for upland beets, a plant with a high salt requirement. Tests are now underway.

Chemical test for 'red tide' poison

Speaking of clams and pollution, another liability for clam and other shell fishermen is saxitoxin pollution. This toxin is given off by a marine dinoflagellate, *Gonyaulax*, the so-called red tide organism, and is concentrated by shellfish. The threat of exposure to this nerve poison has resulted in a permanent quarantine on clams in Alaska and on mussels from May through October in California.

An important chapter in the saxitoxin story has been detection of the poison. Until now, this has been accomplished with a mouse bioassay—feeding mice the suspected shellfish and watching for symptoms of nerve poisoning. This procedure, although reliable enough, is expensive, time-consuming, not specific for saxitoxin and not as sensitive as some would like.

Chemists at the University of California at Berkeley have now developed a chemical assay for detecting saxitoxin that is quicker, easier and 100 times more sensitive than the mouse bioassay. Henry Rapoport and Hans A. Bates report the new assay in the March-April JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY. They grind the suspected shellfish, mix it with several reagents, and then examine it with fluorescence spectroscopy. Characteristic peaks reveal the presence and concentrations of saxitoxin.

This "specific, rapid, routine and reliable assay" may offer alternatives to quarantining beaches by calendar, Rapoport says. Instead of running long-term, expensive bioassays back in the laboratory, the equipment for the chemical assay can be loaded into a small van and analyses could be done at points along the beach. "Anybody who has a B.A. in chemistry or biochemistry could run this equipment," Rapoport says, and frequent monitoring might make shellfishing possible from time to time during the warm months if toxin levels dipped below certain specified levels.