RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Psychology in Crisis?

Some psychologists fear that the results of a recent election for the presidency of the American Psychological Association (APA) signals that the 125,000-member organization is moving ever further from its scientific roots. The APA, however, says scientists and practitioners are both thriving.

Earlier this month, Dorothy Cantor, a private practitioner in Westfield, New Jersey, became the first non-Ph.D. president-elect. She has a Psy.D., a degree designed for practitioners. The election result is "a symbol of APA's complete transition from a scientific society...to a professional guild," says Alan Kraut, a former APA staffer. Kraut now heads the American Psychological Society (APS), formed 5 years ago by researchers who felt APA was not meeting their needs. APA officials defend Cantor, a former board member, saying she is concerned with all aspects of psychology. "Our support for science is higher now than it's ever been," says APA president Ronald Fox of Piedmont Health Care Inc., in Chapel Hill, North Carolina.

The election, however, also featured a bitter conflict between the APA and a losing candidate, Louis Lipsitt, a child development researcher at Brown University and a former head of APA's Science Directorate. Lipsitt's APA term was cut short after women under his supervision complained of behavior that they construed as sexual harassment. No harassment was proven, but Lipsitt agreed to leave 6 months early and signed an agreement to forswear any official APA role. He claims he was free to run because the agreement only applied to the contract period. But the APA tried to push him out of the race by going to court in an unsuccessful attempt to obtain a ruling that he had violated the separation agreement.

William Howell, Lipsitt's successor at the science directorate, calls the Lipsitt business "purely a personnel matter" with no bearing on the status of science in the APA. Nonetheless, some academic scientists feel that the affair signals problems within the association that bode ill for science.

Robert C. Carson of Duke University wrote APA chief executive officer Raymond Fowler last May that the APA's "attack" on Lipsitt could lead to "another massive wave of defections among academic psychologists." And a group has drafted a document, for consideration at the APA annual meeting in Los Angeles next month, calling for an investigation of the Lipsitt episode and of management problems which the group believes led up to it.

Purification in the Time of Cholera

Since Latin America's cholera epidemic began in 1991, at least a million people have contracted the debilitating disease. The bacteria spread through contact with the stagnant, feces-contaminated creeks and pools that pass for drinking water in rural areas. Epidemiologist Robert Quick and colleagues at the U.S. Centers for Disease Control and Prevention are now promoting what they believe to be a cheap and effective counterattack: bucket lids and a table-top purification system using table salt.

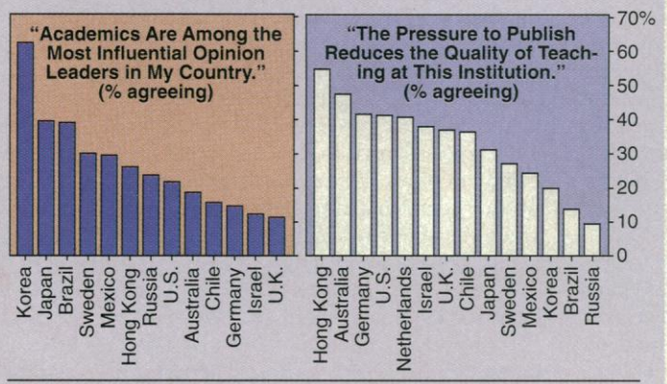
In late 1992, Quick, working with the University of North Carolina and the Pan-American Health Organization, set up shop in the Indian mountain village of El Alto, Bolivia. Since most people store their water in open buckets—prey to bacteria-infected fingers—the researchers began by selling villagers inexpensive, 20-liter spigoted water vessels with tight caps. Next, they developed a simple water purification system. They separated table salt into chlorine and sodium with electrodes, using local power lines, solar panels, or car batteries to run small power generators. Then they put the chlorine into local drinking water sources. The researchers found that when villagers used both innovations, the water met World Health Organization standards.

Quick's team is beginning a more extensive study, which includes training the locals on how to set up the system. Villages will be able to choose whether to splurge up to $1000 for a long-lasting photovoltaic cell or buy cheaper car batteries. And Quick hopes the priciest item, the generators, can be assembled locally and sold for $500 (down from $2000 for an off-the-shelf model). If this arithmetic all pans out, Quick calculates that a family of five can have clean water for drinking and washing for 15 cents a month.

Professors Have Their Say

The Carnegie Foundation for the Advancement of Teaching has done its first international faculty survey* and come up with what it calls "the most comprehensive view of the professoriate available today." Carnegie got 20,000 faculty members in 14 countries to fill out questionnaires about student quality and access to higher education; the balance of teaching, research, and service; working conditions and facilities; university governance; and relationships with government and society.

Overall, academic freedom comes out looking pretty good. U.S. respondents led the pack on one question: 77% said they were "satisfied with the opportunity to pursue your own ideas." But faculty—especially in the United Kingdom—don't feel they carry much clout in their countries (see graph). Nor do they much admire their administrators—the Japanese were most likely to see their leadership as "competent," but only 60% endorsed that assessment. Faculty don't think much of their students' level of preparedness either—only 15% (in the United States) to 40% (Hong Kong) thought quantitative skills were adequate. But, interestingly, the teachers with some of the worst-prepared students—those from the United States—rank with Sweden as the most enthusiastic about overall student quality. And despite their gripes, most faculty members said if they had it to do all over again, they would.



*The report, *The Academic Profession: An International Perspective*, is obtainable for $8 plus postage by calling 800-777-4726. Outside the U.S., the number is 609-833-1759.

Germans Try Lowering Their Ozone

With their nice cars, good roads, and no speed limits on the Autobahn, Germans like to drive very, very fast. And high speeds mean more pollutants, because fuel is burned less efficiently. Torn between the country's mighty auto lobby and its increasingly health-concious residents, the government has been reluctant to get tough on cars, pressing instead for tighter emission standards and better emission-control technology. But the success of a recent experiment in automotive behavior control has encouraged environmentalists.

Billed as the largest-ever trial using local measures to bring down ozone concentrations, the scheme was the brainchild of Harald Schäfer, secretary of the Environment for the state of Baden-Württemberg. Over a 4-day period, authorities in the region around Heilbronn and Neckarsulm posted speed limits as low as 60 kilometers per hour (37.5 mph) on the Autobahn. They also banned cars without catalytic converters and put curbs on local industrial output.

The draconian efforts paid off. The public cooperated willingly—some even held "no ozone parties" to celebrate the cleaner air, as well as noise reduction along the Autobahn. Levels of ozone-building substances—such as volatile organic compounds and nitrous oxides—fell by 40%, along with traffic volume, according to the state's environmental protection institute, which conducted extensive ground- and air-based measurements.

Schäfer declared his "ozone-trial" a huge success and a "slap in the face" to those who have tried to derail anti-pollution efforts. He has called for a first-ever speed limit for the Autobahn: 130 kilometers an hour (81 mph) during daytime and 60 at night in residential areas. But similar cries have gone unheard for almost a decade, and many say that the study's preliminary results are not enough for policy-making. Meanwhile, in Heilbronn, peak air levels of ozone, which went down to 160 micrograms per cubic meter during the trial, popped back to 204 micrograms within 24 hours.

Speeding the Search For Protein Structure

Discovery of the molecular structures of proteins by x-ray crystallography and nuclear magnetic resonance (NMR) spectroscopy has been racing ahead at a breakneck pace; now methods for processing and banking the information on those structures is beginning to catch up.

It's a good thing, too, because raw data have to be annotated with experimental details and checked for consistency, completeness, and reliability before being made available to users such as drug designers. Staff at the databank, the Protein Data Bank at Brookhaven, New York, have already trimmed this validation process from 2 years to 3 months—and new users can look forward to an even faster data turnaround when the bank starts collaborating with the new European Bioinformatics Institute (EBI) being built near Cambridge, England.

As the latest outpost of the European Molecular Biology Laboratory (EMBL), the EBI will be taking over EMBL Heidelberg's library of DNA sequences and other genomics data (*Science*, 18 June 1993, p. 1741).

But the EBI has another important role: as a research center for the growing field of bioinformatics. Shoshana Wodak of the Université Libre de Bruxelles, a protein modeler who will lead one EBI research group, says the institute will help develop software to make the database more efficient. "With the projected rapid increase in the number of deposited structures, it's essential that both [data] deposition and validation are automated," says biologist Janet Thornton at University College London, who's working on validation software. Other needs: a standard format for NMR-derived data, and a means to compare that data to protein structures derived by x-ray crystallography.

Ultimately, plans are to centralize all the protein structure data in one database, with a service center at the EBI and another in the United States.

Jump in Science and Engineering Immigrants

The number of foreign engineers and scientists granted permanent residency in the United States rose dramatically—to more than 22,800—in 1992, compared with with 14,100 in 1991, according to figures recently released by the National Science Foundation (NSF). The annual figure hovered near 11,000 during the '80s.

According to the NSF the surge appears to result at least in part from the 1990 U.S. Immigration Act, which increased quotas for highly skilled workers effective in 1992. About 32% percent of the 22,800 classified themselves as scientists—half of them computer specialists or mathematicians—and the rest are engineers. Asian immigrants made up more than half of the class of '92, with 15.7% from India and 13.5% from the People's Republic of China. Eastern Europeans were also a strong presence.

Criticism of the new immigration law is growing among some scientists, especially in areas of physical science where jobs are scarce. Computer programmer Bob Zacher, for instance, who holds a doctorate in experimental physics but could not find a job in his field, has been firing off commentaries on foreigners and U.S. jobs on the Young Scientists' Network, a computer web. He has calculated that there are now 2.4 Ph.D. scientists and engineers entering the U.S. job market each year for every slot created. But Alan Fechter, head of the Office of Science and Engineering Personnel of the National Academy of Sciences, says that while we are seeing "an unfortunate configuration of events," it's not possible to nail down the numbers with any certainty at this point.

The Perils of Babies in Batches

If it seems that multiple births are multiplying, that's no illusion. A new report shows that births of twins, triplets, and even larger broods have been on the rise in the United States for the past two decades. But these births—largely induced by fertility drugs—are high-risk pregnancies that exact heavy health costs.

In the July issue of *Obstetrics and Gynecology*, epidemiologist Barbara Luke of Rush Medical College in Chicago relates that between 1973 and 1990, multiple births in the United States went up by 26.6%. The rate of twin births rose from 1 in 55 to 1 in 43; triplet and higher order births soared from 1 in 3323 to 1 in 1341. The rise in multiple births is largely a result of fertility drugs, Luke says, which can stimulate the ovaries to release several eggs instead of one. But she points to an additional cause: More children are being born to older women, who are more prone to multiple births.

PATTI MCCONVILLE/THE IMAGE BANK

Cute but costly. Triplets.

The problem is that, with each additional fetus in the womb, the likelihood of premature birth and low birth weight increases "exponentially," says Luke. For example, 10% of single births in 1990 were premature, but nearly half of twin births and almost 90% of other multiple births were. Multiple birth babies are also more likely to have birth defects.

Physician Florence Haseltine, Director of the Center for Population Research at the National Institutes of Health, says that doctors have gotten more careful in their fertility-inducing practices in recent years. And Luke's data bear that out, showing a drop in quadruplet and higher order births from 269 in 1989 to 198 in 1990.