RANDOM SAMPLES

edited by CONSTANCE HOLDEN

EPA Gets Its Own Science Adviser

Earlier this year, a panel appointed by Environmental Protection Agency (EPA) administrator William K. Reilly recommended that a new post of EPA science adviser be created. The idea—not a new one—was to strengthen the science base for EPA's regulatory decisions. Reilly accepted the suggestion and on 30 November William Raub, former deputy director of the National Institutes of Health (NIH) and lately the White House's special assistant for health affairs, took on the new role.

William Raub

Raub, whose doctorate is in physiology, says EPA needs to "try to build more science in and build science in earlier," and to subject its decisions to more review by outside expertise. He wants to facilitate EPA's move toward "risk-based regulation"—which means that new rules should be science-driven rather than determined by the available remediation technology. "In general," he told *Science*, the job will be "to provide the analog of the general counsel"—that is, just as regulations have to be checked for their conformance with law, so do they also need to be consistent with the latest knowledge in science and technology.

Is this going to be a job that evaporates on 20 January along with the Bush Administration? Raub hopes not. Even if Reilly departs, as most observers expect, Raub intends to make his career change a permanent one.

Asked how the 25-year NIH veteran feels about the idea of having a National Institutes for the Environment modeled on NIH—a proposal now under consideration by a committee of the National Academy of Sciences—Raub said he approves of the application of many of the same concepts, such as investigator-initiated research. But he cautions that NIH is an organism that is the product of a unique history and efforts to duplicate the pattern too closely could fall afoul. For example, he points out that each NIH institute has its own public as well as scientific constituency, a generalization that does not apply to all branches of environmental science.

Why Divorce Runs in Families

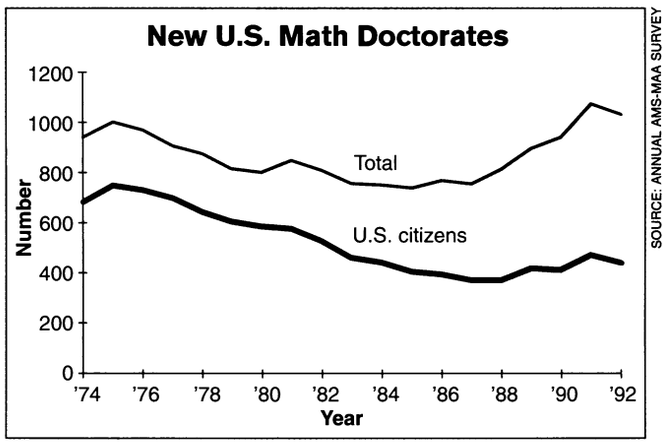
You and your spouse are each a member of an identical twin pair. Your parents, your in-laws, and both of your co-twins have all been divorced. What are the odds that you will get divorced? Now, thanks to behavioral genetics, science is ready with the grim statistic: You have a 77.5% chance of divorcing. But if none of those family members is divorced, the risk for you plummets to 5.3%.

Now comes the question: Did you pick up those harmonious—or strife-ridden—marital habits from the environment in which you were raised? Or could you have picked them up along with your genes?

Divorce has now joined the growing list of human behaviors—ranging from personality traits to specific habits like TV-watching—that twin researchers have discovered to be significantly influenced by the genes. The findings are from a study by University of Minnesota psychologists Matt McGue and David T. Lykken, based on a survey of more than 1500 twin pairs, their parents, and their spouses' parents.

The researchers already knew that divorce tends to run in families. But by comparing information from identical twins with those from fraternal twins (who share 50% of the same genes), the researchers were able to calculate that divorce is about 52% heritable, leaving nongenetic factors with about half the blame. The study showed that the likelihood of divorce goes up nearly sixfold for an identical twin whose co-twin is divorced, but increases less than twofold for fraternal twins whose co-twins are divorced (the same rate as for those whose parents are divorced).

Obviously, there's no gene for going splitsville. So just how do you inherit such a propensity? The researchers explain that it's mediated through a variety of traits and behaviors that have been shown to be heritable—relating to personal values, individual capacity for happiness, job stability, neuroticism, impulsivity, and sexual behaviors. McGue and Lykken, who report their findings in the November issue of *Psychological Science*, point out that "in attempting to account for the intergenerational transmission of divorce... researchers have typically focused on environmental etiologies." Now there's evidence that, as with most other aspects of human behavior, the genes also play a part.



U.S. males eschewing math. New math doctorates fell off slightly this year from the all-time high last year of 1074. The total of new doctorates—1050—was about the same as the previous high, which occurred in 1975, but the composition has changed radically. The proportion of U.S. citizens hit a record low of 42%, and women are capturing an ever larger share, with 24% of the doctorates garnered by U.S. citizens.

New TB Research Facility

Tuberculosis (TB) research is getting a badly needed boost with the opening this month of a new research center at the Public Health Research Institute, a private research group in New York City. The need is obvious: "Multidrug-resistant TB is reaching epidemic proportions," explains the center's president, Lewis Weinstein. Indeed, in just 2 years, the number of cases has burgeoned from a few dozen to an estimated 1000. Worse, the disease is now mainly affecting the HIV-positive population with weakened immune systems, and because these patients often fail to comply with the full 6 to 9 months of treatment, the disease often recurs in even more drug-resistant forms.

The TB Center, to be headed by molecular biologist Barry Kreiswirth, an expert on DNA fingerprinting, will be a new lab in the institute's existing facility. The budget of $2.5 million over the next 3 years is being generated entirely from private sources—of necessity, says Weinstein, since the government is putting so little into the problem (*Science*, 28 February, p. 1064). Among the new center's missions is DNA fingerprinting of TB cultures, with the aim of developing a large database that will facilitate speedy diagnosis of different strains and their reactions to different drugs. Currently, it can take many weeks to grow TB cultures and test drugs on them. Another goal is to test different drugs in the lab—including many currently on the shelves at pharmaceutical companies that have never been put on the mar-

ket, says Weinstein. A variety of TB diagnostics will also be tested, including polymerase chain reaction. (A facility for PCR work is being furnished by Hoffmann-LaRoche.)

The budget of the new program represents a significant increase for TB research, given that the TB budget this fiscal year for the chief federal-level source, the National Institute of Allergy and Infectious Diseases, is only $5.4 million.

British Have Sex Too

And as much as anyone else, according to a landmark study announced last week that confirms earlier data from a pilot study. In last week's *Nature*, preliminary results from the first major UK sex survey demolish the stereotype of the British as a stuffy, sexually repressed race. Instead, there's precious little to separate the Brits from those reputedly amorous neighbors across the Channel.

Edith Cresson, the foot-in-the-mouth former French prime minister who a couple of years ago pronounced Britain chock full of homosexuals, will have to think again: The new results, collected from a sample of 18,876 people, could almost be a carbon copy of those released last summer by a French survey team (*Science*, 3 July, p. 25). British men, like the French, report an average of 1.2 sexual partners in the last year. British women averaged one partner in the last 12 months (French women averaged 0.9). And 3.6% of British men say that they have had sex with a man—not significantly different from the proportion (4.1%) reported in the French survey.

But the raison d'être for the two surveys wasn't to blow away national stereotypes—rather to help design strategies to counter the spread of HIV. In that regard, the British finding that it's the young, and those of higher socioeconomic status, who report higher numbers of recent sexual partners suggests that current efforts to get the safe sex message across to college students are well targeted. But Kaye Wellings, a member of the UK survey team from London's St. Mary's Hospital Medical School, believes that a lot more should be done—in Britain at least—at sexually transmitted disease clinics, where many of the people with the highest risk of contracting HIV show up sooner or later.

Wellings promises a "vast trove" of further information relevant to HIV transmission when the full results from the UK survey are released in book form next year. Although those data are being keenly awaited by UK health policy officials, the survey had to get by without government support. In 1989, former prime minister Margaret Thatcher vetoed public funding for the project, asserting that it was too intrusive. But the Wellcome Trust, Britain's largest medical research charity, came to the rescue with a $1.55 million grant.

CHICAGO HISTORICAL SOCIETY/ARGONNE NATIONAL LAB

Portrait of first chain reaction. Note that sitting atop the pile is the "safety committee," equipped with jugs of cadmium sulfate solution for soaking up excess neutrons if things got too hot. *Chicago Tribune* artist Gary Sheahan, who painted this in 1957, dressed the scientists up in suits and ties for the occasion. Leo Szilard is the one with the briefcase. Enrico Fermi is next to Walter Zinn, whose elbow is on the rail.

Chain Reaction: The First Half-Century

When a team directed by Enrico Fermi created the first controlled, self-sustaining nuclear reaction in a squash court under the football stadium at the University of Chicago on 2 December 1942, the group was elated. The achievement was a key step in the Manhattan Project to develop a weapon—the atomic bomb—that would win World War II, and it promised a wealth of cheap electricity down the road. "There was no ambivalence toward the project. The consequences of losing a nuclear race with Germany were unthinkable," says University of Chicago physicist Roger Hildebrand, who, as a 19-year-old student, developed uranium fuels for reactors.

What a difference time can make. Last week, on the 50th anniversary of the so-called Fermi experiment, a series of meetings, briefings, and public protests across the country reflected the mixed feelings—at best—now attending the nuclear enterprise. Many scientists are now trying to dismantle the nuclear enterprise with the same fervor Fermi and his colleagues showed in building it. In Washington, D.C., for example, Physicians for Social Responsibility used the occasion to publicize its "Manhattan Project II," an international campaign to prevent the proliferation of nuclear weapons.

More Personal Space for Whales?

Whale watching is such good business these days that the National Marine Fisheries Service (NMFS), in its concern for whale safety, may enact a new plan to regulate it. But the plan has raised anxiety levels among whale researchers.

Whale-watching vessels in the United Sates are currently permitted to approach within 100 feet of the beasts except in Hawaii, where it's now 100 yards. But as the pastime has grown more popular, NMFS and conservation groups have become concerned that frequent close approaches may result in boat-whale collisions, with injuries to the latter. Although supporting data for this are scanty, NMFS wants to extend the 100-yard rule to all whale watching regions of the United States.

In New England, however, researchers argue that tripling the distance will hobble their observations. Yes, under the proposed regulations they could obtain permits to approach closer, but not if they're aboard commercial vessels. And there lies the rub. Whale researchers often moonlight as guides on tourist excursion boats; this affords inexpensive opportunities to photograph the animals and monitor their behavior. The new rule "will force scientists to use dedicated vessels, which would drive up research costs," says Nina Young of the Center for Marine Conservation.

NMFS will accept comments on their 100-yard proposal until 30 December. A final decision on the proposal is expected by spring.

Correction

Last month, the U.S. Postal Service (USPS) prompted a 13 November Random Sample naming a group of scientists whose faces were appearing, USPS said, on stamps belonging to its Black Heritage Series. Among them: chemist Percy Lavon Julian; George Washington Carver; physician Charles R. Drew; astronomer and mathematician Benjamin Banneker; and inventor Jan Matzeliger. *Science* readers knew better. Two of the quintet appeared years ago: a stamp bearing Carver's picture was issued in 1948, and Drew appeared in the Great Americans Series in 1981.