

## Briefings

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### GAO Questions Census Adjustment

Nearly a year after the 1990 census was undertaken, debate continues over whether to adjust the numbers to remedy the chronic problem of undercounting, which affects minority groups and the poor in particular (*Science*, 18 May 1990, p. 807). Commerce Secretary Robert Mosbacher, prodded by lawsuits from local governments who stand to lose federal money if their districts are undercounted, has until 15 July to decide whether to order an adjustment. His decision may be made easier by a recent report from the General Accounting Office (GAO)\* that emphasizes

\*"Estimating Census Accuracy—A Complex Task," U.S. General Accounting Office, March 1991, GAO/GGC-91-42.

the technical difficulties.

Any adjustment would be calculated from the results of a recent "post-enumeration survey" of 150,000 randomly selected households, which would be compared to the original enumeration to determine how many people were missed the first time around. But GAO has found that such surveys have problems of their own.

When GAO reviewed 1988 "dress rehearsals" of the survey, it found that 11% of the households in its sample provided information that conflicted with data they had supplied in a previous enumeration. Such discrepancies, states the report, would likely lead to inflated estimates of the undercount. A St. Louis dress rehearsal, for example, indicated an undercount of 5.8%, but the figure dropped to 4.6% when data from bad matches were excluded.

Supporters of an adjustment say the GAO findings "lack context." Carnegie-Mellon statistics professor Stephen Fienberg, for

example, argues that adjustment dress rehearsals were done "on the cheap" and that their shortcomings have been corrected. An aide to the House panel overseeing the census adds that conservative assumptions could minimize the exaggeration, so an adjustment could still improve the accuracy of the overall count.

### Slugging It Out Over Left-handed Mortality

After touching off a storm of publicity with their surprising finding that left-handers, on average, die 9 years younger than right-handers, two psychologists are feeling the backlash.

From a survey of the relatives of 987 dead people, Stanley Coren of the University of British Columbia and Diane Halpern of the University of Southern California discovered that the mean age at death for those said to be right-handed was 75; for left-handers, it was 66. The researchers published their

study in *Psychological Bulletin* (*Science*, 15 February, p. 742), but widespread publicity came only after they described their findings in a letter in the 4 April *New England Journal of Medicine*.

Coren and Halpern have said they themselves were astounded at the magnitude of the result. Other observers are skeptical of the discrepancy as well as of the researchers' explanations for it. Actuary Richard Labombarde of Washington, D.C. says the researchers' data are inadequate to support their conclusions, and he thinks left-handedness among older people was probably underreported. National Cancer Institute epidemiologist Patricia Harge goes further, asserting that the study's method of statistical analysis is "wrong." She believes the results are confounded by the fact that—for whatever reasons—left-handedness is much more prevalent among younger people. That means people who die young are more likely to be left-handed than those who die old. But that reveals nothing about the mortality risk posed by sinistrality.

Coren and Halpern are sticking to their guns. According to Coren, older left-handers are more rather than less likely to be reported as such because left-handedness used to be a big cause for concern. And, the authors say, attempts to change handedness are usually unsuccessful. They think their findings, far from being a statistical quirk, reflect the real hazards of being a leftie—the chief ones being more accident-proneness and greater susceptibility to some immune deficiencies.

Coren, meanwhile, has found that his topic has other risks: Some left-handers have been so angered by his findings that they've phoned in death threats.

### Digital Harvest

As the world has learned, the Green Revolution has brought unforeseen social and environmental woes, including the disruption of some wise old farming practices. Now, in the terraced paddies of Bali, researchers from the University of Southern California hope to use computers to reconcile Green Revolution innovations with agricultural traditions.

In the mid-1980s, just 5 years after the Indonesian government began introducing new high-yield rice strains, irrigation schemes, and agricultural chemicals to Bali, the Green Revolution started going bad. Continuous cultivation of rice caused water to run short; vermin quickly developed pesticide resistance.

J. Stephen Lansing, a USC anthropologist, suspected that the "water temples" Balinese farmers had consulted before the Green Revolution technicians arrived might hold the answer. Each year farmers gathered in the temples to coordinate rice planting and irrigation according to a ritual calendar. The calendar seemed designed to distribute water fairly among the villages surrounding the temple while keeping enough paddies fallow to curb pest proliferation.

To test his idea, Lansing hit on a scheme for combining the old and the new. He enlisted USC ecologist James Kremer, who developed a computer model simulating rice productivity, water

Hi-tech temple



supply, and pest ecology to work out the best farming scenarios. The results closely matched what the water-temple calendars had prescribed.

The next step will be to extend the model to apply the traditional calendars to the new crops, taking into account the peculiarities of high-yield varieties. If funding allows—and Lansing says the UN Food and Agriculture Organization is interested—the researchers hope to make the improved model available to agronomists, engineers, priests, and village elders throughout Bali. Thus equipped, the spiritual leaders will schedule planting and irrigation as they always have—but with new electronic insights.

### How About Men Only for Mars?

The surface of Venus is host to an exclusive female club. The International Astronomical Union's (IAU) committee on