

Postal Service Here and Abroad

Daniel E. Koshland, Jr.'s 15 February editorial (p. 721) dealing in part with the United States Postal Service represented an unscientific departure from fact and substance into supposition and opinion. I hope this letter will give a clearer picture of the United States Postal Service and how we compare with postal services in the rest of the world. Contrary to Koshland's editorial, the United States Postal Service may be the only very large American enterprise that is cheaper, more efficient, and better than its German or Japanese counterparts. In 1989, the German postal service processed 72,000 pieces of mail per worker per year, and the Japanese had a comparable figure of 152,000 for 1990. In 1990, the United States Postal Service processed 212,000 pieces per worker per year. Domestic postal rates in Germany are 67 cents, in Japan they are 47 cents, and here they are an "outrageous" 29 cents!

Postal rates, when the United States Postal Service was formed at mid-year 1971, were 8 cents. They have gone up at almost exactly the rate of inflation to their present level of 29 cents, where they will remain for several years to come. In 1990, our operating costs went up at *one-half* the rate of inflation, due to a reduction in our workforce of some 35,000 career employees through attrition. This was accomplished by the implementation of automation, which is now only one-third of the way through our conversion.

We are measuring, for the first time, our service *externally*—through Price Waterhouse and Opinion Research Corporation. The last customer satisfaction research survey of the American people indicated that 87% rated us good, very good, or excellent and only 2% rated us poor. Obviously, we need to improve, but I question whether any very large organization in this country (and we are the largest employer and the eighth largest corporation in terms of revenues) could have a higher score.

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Response: The Postmaster General is certainly correct in his comments on first-class mail, and this editor got his eye off the ball because he has been preoccupied with the sudden increase in second-class mail costs,

together with poor services. Fortunately, the latter problem is being addressed, due to the special attention of Postmaster General Frank, and it is hoped that the readers of *Science* will soon benefit from that attention.

—DANIEL E. KOSHLAND, JR.

Pesticide Use

The 1 February News briefing "The case against crop chemicals" (p. 517) contains some misleading information. Increases in tonnage of chemical pesticides used in the United States occurred primarily in the 1970s with the application of pre-emergence herbicides in corn and soybean production. There have been no increases in the use of chemical pesticides since the late 1970s. During the 1970s and the 1980s there have been significant advances in the development of pesticides that minimize the potential for health and environmental risks. Today's pest control chemicals are infinitely safer than those of the past generation.

While pest resistance to pesticides is a problem, research is actively providing the strategies necessary for the management of this resistance. All pesticides do not have resistance problems. A number of fungicides have been on the market for many years without encountering resistance problems. These are often used in conjunction with the newer, highly specific fungicides to avoid or postpone resistance.

One of the reasons the pesticide usage curve has remained flat over the last decade is the use of pest management, which combines the elements of natural control (crop rotation, resistant crop varieties, and so forth) with chemical control. The elements of pest management vary considerably depending on such factors as crop, geographical location, and local weather conditions. One cannot broadly address our complex production systems in the United States by simply stating that pesticide use could be cut in half. The needs for pesticides are based on specific situations. We need to focus our attention on continuing the progress we have made in pest control methodology through sound research and extension programs.

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Response: We agree with Ragsdale that some of today's pesticides are safer for some organisms, in particular, some predatory

birds, than were DDT, dieldrin, and other chlorinated insecticides. However, the current environmental and public health problems associated with pesticides are not as insignificant as is suggested by Ragsdale (1, 2). Several million birds are still being killed each year by pesticides (3). Also, the more than 67,000 human pesticide poisonings (4) plus the approximately 6,000 pesticide-related cases of cancer do not suggest that the public health situation is "infinitely safer" than in the past (5).

In addition, substantial monetary costs result from pesticide use. The nation spends \$1.3 billion annually to monitor well and ground water for pesticides (6). Additional costs include serious fish kills; destruction of beneficial natural enemies; honey bee kills; pesticide contamination of meat, milk, fruits, and vegetables; and other serious environmental effects. A conservative estimate is that pesticides are responsible for at least \$8 billion worth of environmental and public health damage each year in the United States (2). Surely we should be alert to this—and develop strategies that will improve the current situation.

To date, pesticide resistance management has not been successful. At present the number of pests reported to be resistant to pesticides are insects and mites (504 species), weeds (273 species), and plant pathogens (150 species). The number of resistant species in all groups is larger than ever before according to a report on pesticide resistance management just issued (7). These data refute Ragsdale's position that there is less pesticide resistance than in the past.

Pesticide use, based on kilograms applied, has declined some since 1975. In part this is because of improved pest management programs. The greatest change has been in the use of highly toxic pesticides, ones that require as little as 1/100th the dosages per hectare that earlier pesticides required. Unfortunately, microdoses of potent pesticides like aldicarb (Temik) do not reduce the environmental and public health hazards, but may even increase them.

We agree that it would be helpful if detailed data on pesticide use and nonchemical controls were available for every region within each state. If these data were available, our investigation would have been easier and our report improved (1). But should scientists wait for complete data? We hope that our investigation will spur more research.

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Indirect Costs

In the coverage in *Science* (News & Comment, 22 Mar., p. 1420; *ScienceScope*, 22 Feb., p. 863) and elsewhere of recent accusations of the padding of indirect costs at Stanford, no one has made the point that the real scandal is not the illegal activities of those who defraud the federal government; the scandal is what is *legal* (1). Direct costs of research grants receive meticulous scientific review and are now routinely pared to the bone by study sections. All of us must know of microscopes or other necessary pieces of equipment cut from grants on the grounds that they were not absolutely needed for full-time use and surely could be borrowed from another laboratory.

Indirect costs, on the other hand, which have over the past decade been rising at nearly five times the rate of direct costs in real terms [calculated for National Institutes of Health RO1 grants in (2)], receive no review for scientific appropriateness. Thus for Stanford University to charge its flowers, sailboats, sports programs, and antiques purchases to the expenses reimbursed by the indirect cost rate may well be legal and consistent with its other indirect costs accounting practices, however embarrassing it appears to be when brought to public notice. Few scientists realize that the question relevant to indirect costs is the extent to which they were incurred in support of the research as opposed to the teaching or public service activities of a university (3). Whether or not those expenses were necessary for the research, or even whether they actually facilitated research, does not enter in. Scientists simply do not participate in making these judgments. If a university administrator wants to install gold-plated benches in a laboratory not used for teaching, indirect costs will pay for them.

Indirect costs at some level are clearly necessary. No one wants to destroy our great university centers for research, which have flourished under federal support over the past 50 years. Nor do most scientists wish to continue working in old, crumbling buildings without hope of their renovation or replacement. Under the present rules, however, indirect costs are restrained only by the probity and innate frugality of most university administrators, who for the common good put their own institutions at a competitive disadvantage to those with more skillful accountants.

The capture of huge indirect costs from our limited research budgets by some universities deprives all working scientists of funds needed to conduct their research and threatens the public support for science. Movement toward a uniform national indirect cost rate for universities appears to me to be the only answer, forcing the universities to compete on the basis of the efficiency of their services rather than on the ingenuity of their accountants.

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REFERENCES AND NOTES

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ScienceScope (22 Feb., p. 863) reports that Stanford University President Donald Kennedy was not prepared for an interview on the ABC news show "20/20." Those who watched the program may agree. Those who did not watch the program know that it is not important for a university president to prepare himself for ABC's "20/20." What is important is for him to be prepared to run a university, and Donald Kennedy has done an admirable job over the past 10 years.

The present controversy over improper charges to the U.S. government stems from mistakes on the part of all of us, but it is Kennedy who is taking the brunt. If not Kennedy, then who? We, the faculty, are the beneficiaries of the research funding on campus, and we should not push the blame onto a single person. We should have been more diligent in tracing the charges. Mistakes have been made, such as the charging of the yacht as well as expenses related to the Stanford Shopping Center. They were not made in the president's office, but in the accounting office.

The accounting system must be corrected. Kennedy has appointed a committee of well-qualified people to review the current re-

porting procedures and make recommendations to effect a more accurate system.

Kennedy has been a strong president in leading a research and teaching institution that is part of our national pride and has an international reputation. We must not let this present controversy diminish what Stanford has accomplished. We must continue to work at improving the quality of both our research and teaching.

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NSF Directorates

We would like to correct the impression that there is unanimity among the organizations testifying on the issue of a separate National Science Foundation (NSF) directorate for the social and behavioral sciences (Briefings, 15 Feb., p. 742). Not all organizations "disagree" with the doubts expressed by Mary Clutter and others within NSF.

The recently circulated testimonies of the

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