guage, including resolution of semantic ambiguities and insertion or suppression of articles and auxilaries. A report on CHINSYN, a synthesis-oriented Chinese-English machine-translation system, will be presented at the second annual meeting of the Association for Machine Translation and Computational Linguistics (29–30 July).

ALVIN KALTMAN
Computer Concepts, Inc.,
Silver Spring, Maryland

References

1. X. Umezava, *Antibiotiki* **7**, 561 (1962).
2. Mao Tse-Tung, *Mao Tse-Tung Hsüan Chi* (People's Publishing House, Peking, 1960), p. 1181.
3. F. Perrin, *Compt. Rend.* **1**, 33 (1959).
4. Though arrived at independently, a similar train of thought is expressed in Paper No. 30, Georgetown University Machine Translation Research Project (1963), p. 180.

Two Camps in Science

Your editorial of 31 January ("Ethical problems: an invitation," p. 435) invites confidential descriptions of situations that have posed real ethical problems. May I suggest that in the last two decades a situation has arisen which provides a background to the problem of ethics. There are now two camps in science: firstly, those for whom science is a way of life, to be practiced for its own sake and for the public good; and secondly, those for whom science, like many other activities, is a road to money and power.

I express no opinion about the relative merits of the two classes, but we shall indeed be foolish if we fail, while there is yet time, to face this fact of scientific life.

BENJAMIN FULLMAN
46, Marlborough Place,
London, N.W.8

Civil Defense Testimony Misread

H. A. Sawyer, Jr. (Letters, 24 Apr., p. 366), has grossly misinterpreted the testimony I gave last year before the Hébert subcommittee [in a hearing on a bill regarding fallout protection in new public buildings].

Noting that of 30 witnesses "with claim to some scientific competence" 25 were for the bill and 5 against it, Sawyer says that, according to his interpretation, except for the pyschiatrist the "anti" scientists objected to the bill because it did not go far enough. I was one of these four and, moreover, the one who gave the most extensive testimony and was questioned at greatest length by the subcommittee. Sawyer's interpretation of my opinion is entirely erroneous. I objected to the program, and still object to it, because it is essentially useless, while carrying the very serious danger that people may nevertheless come to believe they are protected, in some meaningful way, against nuclear war. I further objected to the program because its technical basis was faulty in the extreme. These points were very clearly made in my presentation. Since Sawyer came to such an incorrect conclusion on a matter so straightforward, I would suggest that your readers examine his other statements on civil defense with great care before being persuaded by them.

Lest your readers come to believe, from the lopsided ratio of "pro" witnesses to "anti's," that the American people are generally in favor of this program, it should be borne in mind that the subcommittee invited the Defense Department to procure witnesses. Generally, this practice tends to produce such an unbalanced witness list.

WILLIAM F. SCHREIBER
Massachusetts Institute of Technology, Boston

Trevor Robinson believes it would have been "surprising" if any "dissent" on the value of civil defense had come from Department of Defense witnesses in the famous Hébert subcommittee hearings of 1963. Robinson's letter (22 May, p. 954) gives the impression—intended or not—that the hearings were rigged as a parade of favorable witnesses, and that Representative Hébert and his colleagues handled the matter in a most naive way.

The records of the hearings, and the early press coverage, give quite a different impression. The hearings began with a memorandum by the subcommittee's counsel in which a completely unfavorable picture of civil defense was presented. In the first few days of the hearings various "opposition" witnesses either appeared or were cited through their writings. Then the subcommittee took testimony from the then Assistant Secretary of Defense for Civil Defense, Steuart L. Pittman, and from a few members of his staff. After hearing this testimony, the subcommittee decided to invite other Department of Defense witnesses.

Among these witnesses were research personnel, who were able to explore the technicalities of the subject. The hearings, originally expected to take only a few days, then went on for several weeks. In the course of time the subcommittee's sentiment shifted from "anti" to "pro." However, the subcommittee was by no means passive, and it was not the kind of group that would be sold the Brooklyn Bridge.

Late in the hearings in July 1963, one of the Hébert group unofficially admitted that the original intention of the hearings had been to precipitate the demise of civil defense. . . . The subcommittee's reversal was quite honest. . . . Once they had been amply informed, they changed their minds. I do not recall that their hearings, which went on for at least two months, were ever closed to any witness who might have wanted to testify against the bill.

NICHOLAS ROSA
1010 Noel Drive,
Menlo Park, California

Krebiozen and Retine

It has been brought to our attention that the activity of retine is adduced, in various quarters, as evidence for the alleged anti-cancer activity of Krebiozen. We want to state that, judged by the chemical properties of retine and the properties of Krebiozen, as so far published, the two have nothing in common.

ALBERT SZENT-GYÖRGYI
ANDREW HEGYELI
JANE A. MCLAUGHLIN
Institute for Muscle Research,
Marine Biological Laboratory,
Woods Hole, Massachusetts

Superfluous Textbooks

As one of those who decry the present cost of scientific books, I would like to comment on Crowder's article "Scientific publishing" (8 May, p. 633).

I do not disagree with a cost estimate of say $15 to $20 for a report of a conference or a good review of the state of the art. I disagree violently with the idea that every book publisher must have a textbook on every subject. There has been no new development in elementary heat transfer in 20 years. Why do we need two new books every year for introduction to heat transfer? The same situation exists in mathematics and other introductory fields

of engineering (fluids, structures, and mechanics). What runs up the cost of books is the greed of publishers who talk faculty members into writing unneeded textbooks so that each publisher can get a share of the market.

Last year I considered writing a text on vacuum engineering. I inquired of every U.S. book publisher, and they all indicated that my book would be the only book on the subject. Well, I didn't write the book, and now I am glad, because *five* new books on vacuum engineering came out in 1963–64. I refuse to believe that publishers do not know what the competition is doing, and I can only conclude that I was deliberately misled by publishers' representatives who came to the university to persuade faculty members to write textbooks.

STUART A. HOENIG
College of Engineering,
University of Arizona, Tucson

Timing of Research on Social Change

Wolfle's editorial of 6 March chides social scientists for not taking better advantage of opportunities to study the impact of major social changes and cites the 1964 tax cut as an example. Readers of *Science* will be interested to know that the Brookings Institution has just launched a project to measure consumers' responses to the tax cut. The study will be based on successive quarterly reinterviews during 1964 and early 1965 of a panel of households interviewed last year by the Survey Research Center of the University of Michigan. It will be undertaken as part of Brookings' program of studies of government finance, supported by the Ford Foundation. The Council of Economic Advisers took the lead in stimulating the interest of the various groups involved, and your editorial did not go unnoticed during the discussions.

The Federal Reserve Board is planning to extend its survey of financial characteristics of households for 1964 and 1965 and to obtain income and saving data for 1963 and 1964. This will provide annual data for comparisons of saving, by income classes, before and after the tax cut, while the Brookings-SRC study will provide information on the timing of responses to the cut.

Much of what is said in the editorial regarding the reluctance of many social scientists to study political, social, and economic changes as they occur is justified. Nevertheless, the editorial went too far in three respects:

1) Economists were well aware of the need for a study of the impact of the tax cut; in fact, planning did take place before the cut was enacted. But the uncertain legislative situation made it awkward to approach a foundation or government agency for support of such research before the tax cut actually became law. The Ford Foundation was sounded out about the possibility of helping to finance the study a few days after the President approved the bill, and it acted on the grant request within a month.

2) You overstate the availability of funds for large-scale projects in the social sciences. While it is true that such funds have been growing in recent years, they are insignificant compared with those available for research in the natural sciences. The money for a Mohole project, or for a high-energy accelerator, would finance all the research now done in economics for many years to come.

3) We do not have a mechanism for launching studies quickly in the social sciences. Money is doled out in relatively small amounts and only after time-consuming negotiations. The Brookings-SRC study is an exception to this rule. It would not have been approved in time had it not been for the enthusiasm of the Council of Economic Advisers, the existence of an ongoing program at Brookings for research in this field, and the willingness of the Ford Foundation to move rapidly.

It is hoped that this experience will help to draw attention to the critical need for establishing special procedures to facilitate prompt action on significant research opportunities when the occasion calls for it.

JOSEPH A. PECHMAN
Brookings Institution,
1775 Massachusetts Avenue, NW,
Washington, D.C. 20006

All in the Same Boat

In a letter to *Science* (29 Nov. 1963) E. L. Klingelhofer explained the misspelling of scientists' names by his psychology students (each student had been asked to list ten names) as a possible indication of "deepseated and general hostility toward scientists. . . ." Commenting on this admittedly psychoanalytic interpretation, A. R. Patton (7 Feb.) wondered whether Klingelhofer would not have found that this hostility "extends far and wide" if he had also asked for ten names of composers, novelists, football players, heads of nations, and so forth.

Intrigued by these speculations, I requested the students (40) in my introductory psychology class to write the names of ten scientists, ten novelists, and ten composers. The mean number of misspelled names per student for each category was as follows: scientists, 1.1; composers, 1.3; novelists, 1.0. "Cavalier renditions of names," as Klingelhofer put it, appeared in generous proportions for all three categories. Here are some choice examples: Avogrado, Beckerel, Calperneous, Einstine, Frued, Gallieo, Pablov, Sauck, and Switzer; Bache, Bettoven, Chikoufski, Heiden, Lyst, Motzart, Shopan, Struss, and Stravischi; Dostovesky, Falkner, Hemmingway, Lawernce, Maupesant, Mellville, O'Henery, Warton (Edith), and Weilder. These data would seem to dim that "small ray of hope" which Klingelhofer held out to the humanist. Evidently we're all in the same boat.

FRANK COSTIN
Department of Psychology,
University of Illinois, Urbana

Logical Conclusion?

In his 1 May editorial ("Distribution of federal research funds," p. 491), Philip Abelson imaginatively transcends the simple notion that research funds are to support research. He points out that doing research makes a man a better teacher and suggests, in effect, that some research funds be diverted from the most competent scientists to less competent ones teaching in some 700 institutions in this country which award baccalaureate or higher degrees in science but at present receive no research grants from NSF.

We can go even further. Good students can choose their colleges but not their high schools, and students are influenced early. Therefore, why not give research grants to all high school biology teachers? In fact, just as doing research makes you teach better, it makes you learn better, so why not . . . .

ROGER MILKMAN
Syracuse University,
Syracuse, New York