

ADDITIONAL REFERENCES

- BAGDANAVICIUS, V. B. (1978). A statistical test of a model of additive accumulation of damage. *Theory Probab. Appl.* **23** 385-390.
- BARLOW, R. E., FUSSELL, J. B. and SINGPURWALLA, N. D. (1975). *Reliability and Fault Tree Analysis*. SIAM, Philadelphia.
- DEGROOT, M. and GOEL, P. K. (1979). Bayesian estimation and optimal designs in partially accelerated life testing. *Naval Res. Logistic Quart.* **26** 223-235.
- GUGUSHVILI, D. F., ZHAGENTI, I. D. and NAMICHEYSHVILI, O. M. (1975). Accelerated reliability tests. *Engrg. Cybernetics* **13** 71-74.
- NELSON, W. (1980). Accelerated life testing-step stress models and data analysis. *IEEE Trans. Reliability* **29** 103-108.
- SHAKED, M. and SINGPURWALLA, N. D. (1982). Inference for step-stress accelerated life tests. *J. Statist. Plann. Inference* **7** 295-306.
- ZADEH, L. A. (1965). Fuzzy sets. *Inform. Control* **8** 338-353.
- ZADEH, L. A. (1973). Outline of a new approach to the analysis of complex systems and decision processes. *IEEE Trans. Systems Man Cybernet.* **SMC3** 28-44.

Comment

Elliot H. Weinberg

Few members of the United States scientific community follow the progress of their colleagues abroad on any regular basis. Among many contributing factors is unfamiliarity with the language. (In the United States more college students study Latin than Russian.) Other negative stimuli may fall under a category labeled in a recent issue of *US News and World Report* as "Techno-chauvinism." That article noted that while some 13,000 Japanese citizens are currently enrolled in United States colleges, the number of United States citizens studying engineering in Japan has never exceeded seven. Disinterest leads to limitations in terms of commercial interest in providing for translations of journals or texts. *US News and World Report* reports that in 1981 only 19% of Japanese scientific and technical publications were even indexed by western sources. In a later paragraph, the author (Daniel Greenberg) reports that "Representative Norman Mineta (D-Calif.) came back from South Korea last year with an astonishing account of 5700 translators looking at nothing but U.S. technical publications." In Japan, the collection and translation of foreign technical literature receive high priority, with more than 5000 scientists and engineers routinely processing thousands of foreign journals and technical reports. As John Caplan, executive director of General Motors research laboratories told Congress in 1984:

Elliot H. Weinberg is Director of the Navy Center for International Science and Technology. His mailing address is: NCIST (Code 61), Naval Postgraduate School, Monterey, California 93943. The views and opinions of the author are purely personal and do not necessarily state or reflect those of the United States government or any agency thereof.

"Sometimes we think they know more about GM's business than we do."

Turning our attention to science in the Soviet Union and East European countries, we find that the Soviets publish some 700 science and technology journals, amounting to 60,000 pages per year. Soviet patents issue at the annual rate of 10,000, with many also being taken out in the United States Patent Office, rarely to be seen again. In 1980, the Soviets published over 800 texts in the field of electronics alone. Within the Soviet Union there are perhaps 1,500 science centers, at least a few of which are acknowledged to be of "world class."

The Soviet's VINITI is known to be the world's best science and technology abstracting service, covering 35,000 periodicals in 66 languages from 130 countries. Some 25% of the world's scientists live in the Soviet Union, yet standard citation bibliometrics credit them with producing only 6% of the world's cited research. Explanations abound: some believe that the quality of their work is too low to be publishable, while others suspect that we simply do a lackadaisical job of looking for their publications. Possibly their reward system does not depend so heavily on credits earned by publishing in refereed journals.

This situation was nicely summarized at a recent Library Association meeting in Dallas as follows: "Much of the important social, political, and scientific literature produced in the Soviet Union and in Soviet-dominated countries is virtually unknown to Western libraries and scholars."

If not science, should we be concerned about their technology? Eugene Rivin, writing in *Mechanical Engineering*, April 1983 commented as follows: "One of the resources grossly underused in this country is foreign technology. This appears to be a self-imposed