

ing SDI, I would like to make one comment on that issue.

As readers of this column may or may not know, the Union of Concerned Scientists periodically mails out surveys to some segment of the American public to compile statistics regarding public opinion on arms control issues. Predictably, questions concerned with SDI account for a significant fraction of the questionnaire. I will not argue for or against SDI here, but I would like to point out a feature of these mailings that strikes me as disturbing, namely, that the surveys are accompanied by letters and leaflets that are severely critical of SDI. To add weight to the UCS's arguments a list of prominent anti-SDI scientists is also included. As an example, question 6 of the January survey reads: "If the Reagan Administration proceeds with Star Wars (SDI), do you think this would be more likely to improve the prospects for arms control or more likely to result in an escalation of the arms race?" For guidance, the accompanying letter reads, "He [Reagan] has done all of this for only one reason: his stubborn pursuit of the futile fantasy that Star Wars can make nuclear weapons 'impotent and obsolete.'"

It seems to me that if you want a person's unbiased opinion about an issue, you don't first tell them how you and "more than half of the living American recipients" of the Nobel Prize feel about this issue. It strikes me as inevitable that this will skew the statistics in favor of the views the UCS holds. I am certain that when all the prominent scientists listed go back to their laboratories they make sure that their experimental data aren't tainted by systematic errors, so I am surprised that similar efforts to achieve unbiased data collection aren't applied in this case. Simply mailing out the opinionated part of the package after mailing the surveys would help a great deal.

Those who have not yet formed an opinion on SDI are probably very confused already. It's not clear to me who gains by having experts hurl questionable statistics at each other.

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1/87

THE CHAIRMAN OF THE UNION OF CONCERNED SCIENTISTS REPLIES: Paul Suni suggests that UCS is compiling statistics regarding public opinion on arms control in a manner that is bound to yield skewed results. He implies that we are doing so to demonstrate that public opinion favors our position on SDI.

The question of whether a survey accompanied by a letter outlining our position will yield skewed results is certainly debatable. Knowing this, and also that the self-selected nature of the sample negates any statistical validity that such a survey might have, we have never endeavored to publish or otherwise publicize the results of our surveys. They are designed and used only for the purpose of giving UCS some general guidance as to how one particular segment of the public—those who happen to be on the mailing lists we rent or buy and who also choose to fill out the response form—feels about the nuclear arms race. In short, the surveys have been, and will remain, for internal use only.

In contrast to this kind of direct mail survey is the poll of American physicists done for us by an independent polling firm, Peter D. Hart Research Associates, in February of 1986. [See *PHYSICS TODAY*, June 1986, page 81.] This poll consisted of 549 half-hour telephone interviews with members of The American Physical Society, selected by scientific random means. With a statistical margin of error of $\pm 4\%$, the results of this poll demonstrated that by a 2:1 margin physicists viewed SDI as a step in the wrong direction for America's national security policy. These results were publicly released by UCS and widely reported in the press.

We at UCS understand very well the need to apply the same standards of integrity to our public advocacy work that any good scientist would apply to laboratory research.

HENRY W. KENDALL

5/87 Cambridge, Massachusetts

'HALF-TRUTHS' OF US-JAPAN TRADE

I was astonished to find William C. Norris's editorial (February 1987, page 168) in a scientific magazine instead of a trade publication. Many economists and business analysts have stated that there are many reasons other than technology for US trade deficiencies. An article by Hajime Karatsu explains that the superiority of Japanese products based both on high-tech and conventional technology, including semiconductor chips, carbon fibers and air conditioners, does not come from technology flow but mainly from Japan's mode of production.¹

The six reasons for the trade imbalance that Norris gave as a partial list include rumors and half-truths. I

would like to counter some of his points:

▷ Access to US research is almost equal among many countries, including Japan. The NATO countries, Israel, Taiwan and Korea might have better access to military-related research than Japan does.

▷ Japanese labs, both in the government and at universities, are open to foreign researchers, though financial support may not be as liberal as in the US because of the Japanese budgetary system. Though they publish their results mainly in Japanese, important results are usually published in English too. Japanese scientists and engineers often complain that Americans do not pay much attention to Japanese publications even if written in English, dismissing them as inscrutable just because they are written in "Japlish." In this sense Russian scientists, who are eager to read Japanese publications, are less chauvinistic than Americans. Of course proprietary research these labs do for private companies is not freely accessible to other parties, including the Japanese—just as in the US.

▷ The best Japanese graduate students usually do not come to the US but enter the best graduate schools in Japan, join the government or work at big corporations. Graduate students, or for that matter any students, who go overseas do so on their own accord and using their private resources. If they get US support, they get it based on individual merit in competition with other candidates. US intellectual support of Japanese graduate students or researchers is not a one-way street.

▷ I wonder whether Norris would propose that a \$10 000 fee for each foreign student be paid by governments of European countries, Korea, Taiwan, Hong Kong or any country that has a trade surplus with the US. If not, where is the fairness that the US always insists on in arguing about trade with Japan? (For fairness' sake, the trade surplus should be computed on a *per capita* basis for each country.)

▷ The Japanese government, academics and even industries are keenly aware of the shortfall of basic research in Japan. This is due mainly to the facts that basic research started less than 100 years ago, suffered severe damage during World War II and started to recover only 20 years ago. Norris's proposal that the Japanese provide a fund to be administered by the NSF seems to me to be similar to the USSR's proposing that a successfully developing country

change its capitalistic system to a socialistic one.

Reference

1. H. Karatsu, Sci. Bull. Office Naval Res. Far East 11(3), 4 (1986).

TAKASHI ICHIEYE
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WHAT BECAME OF J. L. DUNHAM?

Whatever happened to J. L. Dunham?

The quantitative analytic theory of the molecular spectroscopy of diatomic molecules owes its origin to J. L. Dunham, who apparently did this important work for his PhD thesis in physics at Harvard University during 1928-32. However, my search of both *Physics Abstracts* and *Chemical Abstracts* failed to discover any further publications after the brilliant papers on the BKW method and its application to diatomic molecules (*Physical Review* 41, 713 and 721, 1932). One can certainly understand that the difficult years of the great depression made many competent physicists disappear from the research frontier to find employment teaching in high schools or even leave science altogether; however, it would be nice to know more about this particular physicist, whose contribution is so enduring.

If any readers of *PHYSICS TODAY* can supply any information, I would be grateful, as I wish to mention something of Dunham's biography in a forthcoming review of his work and modern developments arising therefrom. Please direct any replies to me at the Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan 30043.

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MEETING REFORM

The February 1987 *APS Bulletin* (page 127) reports the loss of some \$150 000 per year due to non-registration of some APS meeting participants. Taking the average registration fee as \$100, this gives about 1500 cheaters per year. Since only several thousand APS abstracts are submitted annually (and far from all authors show up for the meetings) the above figure amounts, I am afraid, to a much greater percentage of dishonesty among our colleagues than in the general population!

This somewhat sad and shameful conclusion can, however, be relatively

easily dealt with. An announced registration fee (or perhaps a flat rate) should accompany every submitted abstract as a cover charge. This measure would not limit the unrestricted privilege of any APS member to submit abstracts—those of us who are financially disadvantaged (for example, unemployed, on pensions or from poor countries) could be excused from the payment on the submission of a simple declaration stating their reasons. To simplify handling, this declaration could even be included at the bottom of the abstract page. The percentage of such exceptional cases would not be unacceptably high.

Contrary to what the *APS Bulletin* article suggested, admission to APS sessions should be open to anyone interested (that is, the idea of "badge guards" is a bad one).

ALEXANDER A. BEREZIN
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SEARCH LONGA, VITA BREVIS

It seems that most of the news stories in the Search and Discovery section are getting too long these days. While these articles are definitely valuable to both experts and nonexperts, it takes too much time to finish reading them and may become boring for the majority of readers, the nonexperts. Personally, I think that two pages would be the ideal maximum length for each story. More short ones (of half to one page each, say) could then be added. I am sure that each month, around the world, there are enough searches and discoveries in the various disciplines of physics that are newsworthy and fit to print—in *PHYSICS TODAY*, of course.

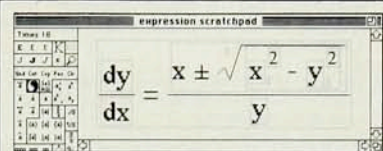
LUI LAM
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FALSIFYING CREATIONISM

While I found the news story on "creation science" that appeared in your February 1987 issue (page 64) interesting, I must take exception to the statement by the National Academy of Sciences that creationism "requires the direct involvement of a supernatural intelligence and thus cannot be tested by the scientific method."

Creationism proposes that life arose by a series of interferences by a deity with the laws of space-time, while evolutionism proposes that life arose by the normal operation of

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