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letters

I hope that in the future PHYSICS TODAY consults a Chinese reviewer first before publishing an article concerning the Chinese language.

JOHN T. C. KAN
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Chicago, Ill.

10/81

THE AUTHOR COMMENTS: Many of Chinese letters used in Japan at present have considerably different meanings from the original meanings in China. I learned this "modification" during my visits to China in 1975 and 1980. In my article published in September I mentioned the Japanese meanings of some Chinese letters, but never tried to treat the original Chinese meanings. The letter in figure 6 definitely means "congratulations" in Japan.

The letter in figure 7 (d) definitely means "thick." Figure 7 (e) is "heaven" which is mistyped as "heavy" in the figure caption as pointed by John Kan, but it is correctly read as "heaven" in the text, in the bottom of the third column of page 48. Figure 7 (f) really means husband in Japan. Figure 7 (1) is "mouth," but my correction of the galley proof was not in time for the press deadline.

As mentioned above, many Chinese letters are used in Japan with modified meanings, which again shows our adaptation to foreign cultures.

For your reference, the Japanese pronunciation of Chinese letters discussed above are listed below.

Figure 6: "kotobuki"

Figure 7 (d): "hutoi"

Figure 7 (c): "ten"

Figure 7 (1): "kuchi"

which reveals the Japanese meanings.

MAKOTO KIKUCHI
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11/81

More on POPA

Louis Rosen's comments (August, page 11) on the greatest danger to society are quite right, including the dependence on arms control for our survival and the importance of verification if we are to have confidence in arms-control agreements. But it isn't sufficient that physicists merely help to make it unattractive for anyone to start a war, and contribute to technical aspects of verification. Physicists need more than ever to be aware of what is going on politically, and how the actions of their government are viewed elsewhere. For example, acting collectively, physicists could have brought to bear significant influence in the US towards getting SALT II ratified. If arms control is as important as Cohen says, then SALT II is important.

Physicists also should be aware of undercurrents, either hypocritical or contradictory that taint many government dealings. For example, a government can be paying more than lip service to arms control, and at the same time be undermining the arms-control process itself. The US currently adheres to several arms-control agreements and principles, but now seems insistent on deploying cruise missiles in Europe, which may well undermine efforts at reaching an arms control agreement on "long-range theater nuclear weapons." The reason is simple: It is unlikely the US and USSR (if they finally agree on numbers of weapons and so on) will agree on what is acceptable as a means of verification for cruise missiles. The Soviet Union's position is just as self-contradictory if one considers the chemical weapon stockpile they have developed. All attempts at arms control in this area have failed on the question of verifiability, yet that nation has been crying out for arms control in other areas.

There was a time when it was militarily smart to have a secret weapon at one's disposal. In today's climate even a nonsecret but "unverifiable" one is a liability, because it cannot be brought under arms control and contributes to international suspicions and tension. As long as the Soviet Union and the US remain in a state of severe ideological conflict, our security will lie in deterrence and arms control, preferably minimum deterrence with very good arms control. Efforts to undermine either deterrence or arms control work against our security; nevertheless, several such efforts are in full swing at the present time. An example of efforts at undermining deterrence is research in antisubmarine warfare (advertisement, August, page 82). One could hardly expect the US to cease research in an area where the USSR is very actively engaged, but surely a bilateral or multilateral agreement should be reached on this as on other vital questions. There is much for the physicists to concern themselves with here, and maybe POPA should create a special task force to address such concerns.

DEREK PAUL
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10/81

Moral code for scientists?

Seldom do I find a concise phrase with which I am in such total accord as that used by D. H. McNeill as he closed his reply to G. H. Stumpff II: "At best it (the so-called defense industry) wastes money... at worst, empty of human value, it is suicidal." (May 1981, page 102).

I believe that the time is long overdue when those scientists who agree with McNeill make a concerted effort to convince their colleagues throughout the world to abstain from all forms of weapons development and "defense work." This suggestion arises from three simply stated concepts which involve value judgements and moral beliefs:

► The probability that the arms race will prove to be suicidal is high (greater than 50%).

► Individual human beings are responsible for their actions; for example, as enunciated at the Nuremberg trials: "... individuals have international duties which transcend the national obligations of obedience imposed by the individual state." [Quoted in W. J. Bosch, *Judgement on Nuremberg*, North Carolina U. P., Chapel Hill, (1970) page 15.]

► Scientists have been exposed to the practice of ordering evidence and drawing rational conclusions. Statistically speaking, one may expect that a wide-ranging debate among scientists will lead to significant changes in behavior.

Any effort to convince scientists and engineers to stop contributing to the arms race is fraught with difficulties, will probably call for individuals to sustain significant hardships, and could, if successful, unleash formidable powers of entrenched groups within the US which would make the "McCarthy era" seem like a picnic. Extreme sacrifices are often made in times of war; can they also be made to avoid war?

The following comments are intended not as part of an overall plan, but to initiate the debate:

► The scientific community must strengthen its self-identity and provide alternatives for scientists who no longer wish to contribute to the arms race. As a first step, I suggest the creation of an organization, perhaps to be called "The Survival Institute." This organization could be created and advised by a consortium of existing groups such as the AIP, the Union of Concerned Scientists, and so on. Its primary functions would be to (a) coordinate the ongoing effort among scientists to stop the arms race, both within the US and worldwide; (b) raise (private) funds to create a series of research and education centers where scientists could work on basic problems of our society and contribute to the well-being of humanity; and (c) develop a legal expertise to work on problems which may be resolved in the courts.

► The movement to stop the arms race by scientists must be fostered in all countries of the world as quickly as possible. The flavor of activities would vary considerably, but all avenues of communication between scientists should be employed.

► Since we may expect severe censoring by sizable segments of our society who believe that scientists (like road builders) should do as they are instructed by their government, we must develop a reasonably coherent and concise statement of our philosophy. I have already mentioned the Nuremberg principles, and, in addition, I believe we may be guided by moral statements such as the Hippocratic oath which was once taught to, and upheld by, the medical profession.

► What of the inevitable dissension and rancor which will unavoidably be exacerbated within the AIP and the scientific community? Whenever a political stand is contemplated by the AIP, AAS or similar group, the cry goes up that our professional societies exist to further our needs as scientists and that we must steer clear of politics.

As individuals we are seriously divided by differing beliefs about social structure, social justice and the best way to minimize the probability of a nuclear holocaust. As physicists, we are urged to pretend that these differences do not exist and to remain inactive in the hope of preserving a fictitious unity of purpose. I believe that we must discard this pretense and come to grips with the fundamental problems of survival: Should we be obedient servants of our political "leaders," providing them with the means to destroy the Earth, or can we develop a moral code that will encourage scientists to accept full responsibility for their actions?

D. E. HARRIS

10/81 *Lexington, Massachusetts*

Reagan's economic program

I agree with the conclusion of Allan Bromley in his July editorial (page 104) that physicists should speak out in opposition to the severe budget cuts for social-science research. I disagree strongly, however, with his initial premises.

Bromley states that "the great majority of physicists... are entirely sympathetic to and supportive of President Reagan's goal of turning around our economy." Reagan's economic program consists of

► giving away billions of dollars of taxes to a small number of wealthy people,

► a huge acceleration of military expenditures that is inflationary and diverts resources from our civilian economy,

► the gutting of needed energy-conservation and solar-energy programs, and

► severe cutbacks in programs to aid the poor, minorities and so forth. Bromley's assumption that the great majority of physicists support the goals

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