Letters

Sakharov on Détente

The News and Comment report on the Moscow summit test ban treaty by Luther J. Carter and Robert Gillette (2 Aug., p. 420) indicates that Andrei Sakharov is not only misunderstood within the Soviet Union, but also in the West. The impression is given that Sakharov does not believe that there can be real progress in nuclear arms control until there is greater freedom of expression in the Soviet Union.

I have had the honor to meet with Sakharov in Moscow and subsequently to carefully follow his various statements on détente. His statements about conditioning détente to democratization of Soviet society, or to the Jackson amendment as a minimum, refer to trade and technological exchange only. Arms control measures have a logic of their own and have not in the past been related to détente, witness the aboveground nuclear weapons test ban and the nonproliferation treaty; although we may hope that détente will facilitate nuclear arms control and reduction measures, this still has to be proved.

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Computers and Human Happiness

I would like to make two comments on the editorial "Technology as a deterrent to dehumanization" by Ruth M. Davis (30 Aug., p. 737). First, ". . . Thamus replied: O most ingenious Theuth, the parent of an art is not always the best judge of the utility or inutility of his own inventions to the users of them . . ." (*1*). Second, although technology is neither good nor bad it is not neutral. It forces definite patterns of behavior on the environment.

The problem with computers is not so much their use as their abuse. They represent powerful and versatile tools, yet all too often, use of computers is substituted for thought or judgment. One of the reasons for this could be a shortage of qualified analysts.

The contention that computer-assisted instruction will make students feel happy and human is overly optimistic and much too premature. The claims that computers will release us from drudgery and routine, allowing us to enhance our "creative" pursuits, are far from having been realized, even in education. All too often, we tend to forget that "if you make a theory, for example, and advertise it, or put it out, then you must also put down all the facts that disagree with it, as well as those that agree with it" (*2*).

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References

1. *The Works of Plato*, I. Erdman, Ed. (Simon & Schuster, New York, abridged edition, 1928), p. 323.
2. R. P. Feynman, *Eng. Sci.* **37**, 10 (June 1974).

Zelby's interest in making the goals of technology realistic is proper. Fortunately or unfortunately, computers and human happiness have rarely been linked. This is probably due to the belief of most technologists that there are many, many steps needed before such a correlation can be made. Those of us who deal daily with both people and computers have a more limited but, we hope, more realizable goal: namely, that if people are relieved of jobs they dislike as well as do poorly, they will then pursue activities more attuned to their abilities and thus more attuned to the well-being of society.

People are horrible record-keepers; computers do better. People get tired—including teachers, doctors, nurses, and policemen; automated devices do not tire. Students, patients, welfare recipients, those of us receiving paychecks and needing police protection come off much better when computers, automated displays, and television cameras keep the records, hold the questions, record the answers, and print the paychecks. Then the real, comforting interactions can be between people.

Perhaps, though, the most significant commentary that can presently be made about the loyalties of us technologists is that we are still aiming at making people—and not computers—happy and more creative. As long as technologists put people first in their affections and their work, the world can relax. The alternatives are what we have to fear.

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Bee Language

I have studiously remained neutral in the debate between the defenders of Karl von Frisch and those of Adrian Wenner concerning honeybee communication. We will probably end up squarely "in the middle," with the ultimate demonstration that both olfactory responses and the dance have important functions. Behavior in which frequency of turning is a function of chemostimulation surely has evolutionary "roots" (*1*); the dance could hardly have evolved without having some important role.

Wilson (*2*) has said: "The evidence . . . is overwhelmingly in favor of a communicative function for the waggle-dance." Griffin and Marler, in answer to Ankerl and Pereboom (Letters, 6 Sept., p. 814), stand firmly with Wilson.

The question is not whether von Frisch or anybody else has accumulated massive evidence in favor of the dance hypothesis, but whether the necessary control experiments have been carried out designed to *disprove* that the results may be attributed to olfaction alone.

I agree totally with Altmann (*2*), who has written that this "is one of the few non-sterile controversies in the study of animal behavior" and that "it will not be resolved by citing the consensus of present opinion or by pointing out that the work of von Frisch *et al.* produced overwhelming quantities of data in some twenty-five years of work." My students ask me how prominent scientists can defend von Frisch's position unless they are satisfied that he did the necessary control experiments. They and I are aware of no publication in defense of his position that points out such controls. If any reader knows where such controls have been described, we would appreciate the exact citation.

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