

LETTERS

Intermediate Technology

We were glad to see the excellent article by Nicholas Wade (News and Comment, 18 July, p. 199) about E. F. Schumacher and *Small Is Beautiful*. Intermediate Technology is being formed as a U.S. nonprofit organization. Its objectives include both helping support Schumacher's work and bringing together and helping find support for those who will move ahead to "make a viable future visible in the present" (as Schumacher would put it) in industrialized as well as developing nations (1).

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Notes

1. The Public Broadcasting System will rebroadcast in September the NOVA-British Broadcasting Corporation program on Schumacher and his work originally shown in the United States last March.

Computers: Active or Passive?

Amitai Etzioni in his editorial "Effects of small computers on scientists" (11 July, p. 93), misses the point by both anthropomorphizing a methodological tool (automated analysis) and also assigning teleological motives (empiricism) to the new generation of laboratory computers. Computing machines do not have "empiricistic clutches," nor do they "set the pace and direction," nor does their use give rise to "the need to protect time for reflection." What Etzioni seems to be complaining about is that a huge amount of data produced by bad experimental design is processed on laboratory computers which will obediently spew out a huge amount of meaningless results supported by irrelevant statistical measures which in turn results in a huge amount of published garbage. But some reflection as to the social mechanism underlying this effect should lead to the suspicion that the real culprits are the universities, the pseudoacademic research institutions, and the government granting agencies who, each in their own way, support a system that makes it profitable for academic institutions to administer research grants. Too often, the second-rate, or even the unmotivated first-rate, scientist is pressured into doing "research."

The problem has little to do with the design of computing machines or the education of graduate students in their use, and certainly has very little to do with scientific

philosophy. It does have something to do with how academics, scientists, and university administrators go about earning a living. Thus, it would have been more valid if Etzioni had chosen the title, "The effects of scientists on small computers."

Etzioni pushes his argument to absurdity by seeing future salvation in the semi-automation of theory and hypothesis development. While advances in artificial intelligence are a real possibility, the social framework that now encourages the use of scientific computer systems for the production of mostly worthless information will no doubt operate similarly for the production of defective, if not dangerous, intelligence.

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As I see it, the new computers provide new temptations: It is true that the character of the users, and the institutional and social circumstances, determine a good part of the response to the old as well as new temptations. But I would think that at least since the time of Eve it has been established that the measure of the enticement and the scope of the opportunities also play a role.

I did not deal with artificial intelligence other than to suggest that theory-building can also be assisted by computers. I agree with Klerer that this possibility *can* also be abused, but this does not render the call for its wise use an absurdity.

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Conserving Nonhuman Primates

As a footnote to the letter "Primates in biomedical research" (4 July, p. 8), two mechanisms exist for extending the usefulness of laboratory primates beyond a single institution and thus reducing overall demand.

Animals that have been used in nonterminal experiments should be listed as available in *Current Primate References*, published weekly by the Primate Information Center, Regional Primate Research Center (SJ-50), University of Washington, Seattle 98195. This publication also accepts listings of needs for primates that can be met by animals used in previous experiments.

Availability of tissues from primates used in terminal experiments should be

listed in *Laboratory Primate Newsletter*, published quarterly by Allan M. Schrier, Department of Psychology, Brown University, Providence, Rhode Island 02912. Needs for carcasses or tissues may also be listed.

Neither publication charges for such listings, since both are assisted financially by the National Institutes of Health. There is, however, a voluntary subscription fee of \$25 for *Current Primate References*.

Finally, I urge researchers contemplating studies of nonhuman primates have the Primate Information Center search the literature for any previous experience with the proposed subject species in the particular research area, as well as for colony management information. The fee, \$45 for a 35-year search or \$30 for a 10-year search, is an infinitesimal fraction of the true cost of using even one primate inappropriately or of losing it through improper care.

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Moral Responsibility

Universities have a special responsibility not to make contracts or other formal arrangements with a government which practices torture, until the use of torture by that government has stopped. Further, when suspicion of the practice of torture in a country is raised and a contract with the government of that country is being considered, universities have the responsibility to consult the International Committee of Jurists and other international agencies, such as Amnesty International, which investigate charges of torture, before they proceed with negotiations.

Universities have this responsibility because they are repositories of civilization and because other civilized institutions in our society apparently do not have the courage to do anything about the reality of the practice of torture in many countries.

Leaders of governments say they cannot protest torture for various practical reasons. Organized religions do not hold firm against torture, although courageous individuals of many religions do protest the practice of torture in their own and other countries. Therefore it devolves on universities, when the issue presents itself, to assert absolute standards of humanity and morality. Then perhaps in some countries the horror and shame of torture will be ended.

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