

search dealing with a product in which he had direct financial interest, from which it follows that the results of his work might be biased accordingly. Check me if I am wrong, but I know of no researchers who publish their results who are not in the same situation. Take me, for example. I am an archeologist, employed by a major university, currently working both in North America and in Europe. Given that I am not about to steal and sell artifacts from the sites on which I work, my research has little direct economic value to me. I have yet to dig up a cure for AIDS, and I have never found an ancient clot-dissolving drug. I do, however, publish the results of what I do. Now, we all know what happens to academics who work at major universities and who do not publish. They fail to advance in rank, and they also fail to advance in salary. Even if all the publishing I have done has been done for the sheer love of knowledge, as I am sure must be the case, the truth is that I have gained financially from my productivity. The logic behind the charges directed at Tseng, among many others (for example, *Research News*, 16 Dec., p. 1505), would suggest that because I will gain financially from my research, a conflict of interest is involved, and the presentation of the results of my work might be warped by my desire to see those results reach a wider world. As an ethical scientist, I would seem to have only two choices given this situation. I can stop doing research, or I can continue doing research but stop publishing. Of course, if all scientists were to stop doing things from which they might benefit financially, the consequences for the country as a whole would be horrendous; but at least we would avoid the behavior engaged in by Tseng, who should clearly be made to suffer for having done something that might do him some personal good.

Oh—please don't let my Dean see this letter. He might like it and give me a raise, and I would not like any of my fellow scientists thinking that I am so unethical that I would gain from something that I wrote that dealt with science.

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### Narrow Corridors Stop Falling Soda Machines

I would like to suggest a simple solution to the falling soda machine problem that evidently has not been considered (*Random Samples*, 6 Jan., p. 32). Although it was

probably not with such a hazard in mind, those who make such decisions placed some of our machines in a narrow corridor in which a machine could not fall to the floor because it would be stopped by the facing wall.

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### Broad Training for Social Scientists

What would we think of a chemist who calmly assumed that a particular chemical reaction violated the principle of conservation of matter and energy? What would we think of a neurophysiologist who was unfamiliar with basic biochemistry? Not much, of course. The natural sciences are continuous and unified, so that theory in any one field must ultimately be compatible with theory in the others. Training in the sciences therefore begins broadly. So it should be in the social-behavioral sciences.

A behavioral science concept incompatible with evolutionary biology is just as bizarre as a chemical reaction incompatible with basic physics would be. A social science "principle" that is incompatible with known psychology is as wrong as a neurophysiology with impossible biochemistry. Chemists and neurophysiologists do not often make such errors, of course—their training guarantees it. But how would the average social-behavioral scientist know that his or her "theory" makes no sense in terms of an adjacent discipline? Unlike students in the natural sciences, those in the social-behavioral disciplines are not ordinarily required to have a firm grounding in related fields. They should be.

The social-behavioral science tradition of ignorance of related fields was once the path of wisdom. Psychology entered the university at a time when the only evolutionary biology was bad biology; and it was still respectable to explain crime and poverty in terms of family background, race, and "blood," when sociocultural anthropology and sociology were becoming institutionalized. We can only be grateful to a Durkheim, for example, who taught social scientists to look away from psychology and biology. That, however, was around the turn of the century, a century once again about to turn.

While behavioral and social scientists were looking the other way, real progress was being made. Today, for example, a psychologist who wishes to assume that there is such a thing as a general capacity for

learning has to reckon with the evolutionary argument that selection is unlikely to favor such a generalized capacity (as opposed to specific cognitive abilities related to specific adaptive problems). A social scientist striving to explain everything in terms of environment and "culture" now must cope with abundant evidence for a very complex, evolved psychology.

The social-behavioral sciences have long sought to become more "scientific" by emulating the emphasis on measurement of the natural sciences. It is time for us to emulate the theoretical continuity of the natural sciences as well.

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### Cost of Electricity

People who discuss the issue of investing in more efficient use of electricity versus investing in the construction of more electric generating plants (for example T. M. Besmann, *Letters*, 13 Jan., p. 243; M. Crawford, *Letters*, 13 Jan., p. 243) usually omit reference to the human dimension of the costs of new electric generating plants. Let me illustrate. The summer peak demand for electricity in the United States was forecast for 1985 to be 465,000 megawatts ( $4.651 \times 10^{11}$  watts) and for 1994 to be 566,000 megawatts ( $5.66 \times 10^{11}$  watts) (1). This corresponds to a modest annual growth rate of 2.2% and requires the construction of 11,000 megawatts ( $1.1 \times 10^{10}$  watts) of generating capacity each year. If conventional fossil fuel plants are built, the capital construction cost of the new plants is around \$1.5 per watt. For this rate of growth, this amounts to \$68 per year for every one of the 250 million men, women, and children in the United States throughout the period from 1985 to 1994. For even a modest rate of growth of our national electric generating capacity, the human scale of the costs is staggering.

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### REFERENCES

1. "1985 Reliability Review" (North American Electric Reliability Council, Princeton, NJ, 1985), p. 9.

*Erratum:* Figure 5 (p. 205) of the report "Observation of individual DNA molecules undergoing gel electrophoresis" by Steven B. Smith *et al.* (13 Jan., p. 203) was printed upside-down.