

in its pages? Indeed there must be "truth in advertising, even for science projects," as Voss and Koshland propose. We would go further: There must be truth in advertising, even *against* science projects.

Robert N. Cahn

Director, Physics Division,
Lawrence Berkeley Laboratory,
Berkeley, CA 94720, USA

J. David Jackson

Department of Physics,
University of California,
Berkeley, CA 94720, USA

Chris Quigg

Theoretical Physics Department,
Fermi National Accelerator Laboratory,
Batavia, IL 60510, USA

References

1. D. E. Koshland Jr., "Addons and catchons," *Science* **229**, 429 (1985).

Response: When the particle physics community set forth its SSC plans in 1984, the Central Design Group advertised a price tag of between \$2.7 and \$3 billion [B. Schechter, *Phys. Today* **39**, 29 (April 1986)]. This is the figure that the SSC's promoters used to sell the project and build its momentum. As for final cost, there are no grounds for confidence that the SSC's cost escalation would have stopped at even \$12 billion. In regard to operating costs, note that the SSC was offered as a qualitatively different endeavor, beyond anything tried before. A simple extrapolation from Fermilab to the SSC is misleading. We stand corrected on the figure for the LHC's cost, which still leaves it a good deal cheaper than the SSC. Far from expressing indifference to the "elementary nature of particles," our editorial supported high energy physics as an international effort, in large part because of the extraordinary cost of its instruments.

—**David F. Voss and Daniel E. Koshland Jr.**

Mathematical Development and Language

A study of ours, featured in *Random Samples* of 29 October (p. 651), suggested that the faster pronunciation of Chinese number words relative to that of English number words was one factor leading Chinese kindergartners to use more sophisticated counting strategies to solve simple addition problems than their American peers, and therefore provided the Chinese children with an early edge in basic arithmetic (1). Mary S. Erbaugh (*Letters*, 24 Dec., p. 1957) suggests that our conclusion was not justified because numbers take longer to pronounce in Japanese and Russian than in

English, yet Japanese and Russian children outperform American children in mathematics. Erbaugh is absolutely correct that children in Japan and Russia substantially outperform American children in mathematics. However, mathematical development is influenced by a confluence of factors, including instruction and cultural attitudes, as well as some linguistic factors (2). Articulation rates for number words would only be expected to strongly influence performance on tasks that involved number counting, such as using counting strategies to solve simple arithmetic problems. They would not be expected to strongly influence performance on other types of mathematical tasks. Even for those items where number word pronunciation rates might be important, overall exposure to these items will probably be the best predictor of cross-national achievement differences in the long term. We suspect that the relatively poor mathematical development of American children is most strongly related to the low valuation placed on mathematics by American culture (3). Cultural values influence the quality and quantity of children's exposure to mathematics at home and at school. The linguistic influences we focused on appear to be one influential factor, but we do not believe they are the only one, nor did we say so in our study.

David C. Geary

Department of Psychology,
University of Missouri,
Columbia, MO 65211, USA

Robert S. Siegler

Department of Psychology,
Carnegie Mellon University,
Pittsburgh, PA 15213, USA

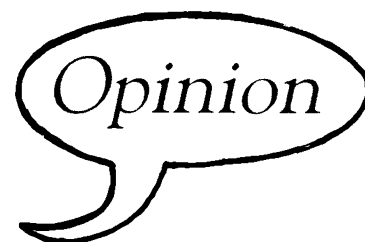
References

1. D. C. Geary *et al.*, *Cognit. Dev.* **8**, 517 (1993).
2. D. C. Geary, *Children's Mathematical Development: Theory and Application* (American Psychological Association, Washington, DC, in press).
3. H. W. Stevenson and J. W. Stigler, *The Learning Gap* (Summit, New York, 1992).

Smallpox Virus Stocks: More Votes

David Baltimore's letter about smallpox virus stocks (7 Jan., p. 13) is an excellent example of the scientist's approach to fundamental ethical and social policies.

For years there has been gentlemanly, and half-muted, debate among scientists concerning whether or not to destroy the last remaining cultures of the smallpox virus. This might seem to be a simple scientific matter, but it is of the highest ethical significance. Suppose that the debate had taken place in 1940, and the United States had destroyed its last virus. What might

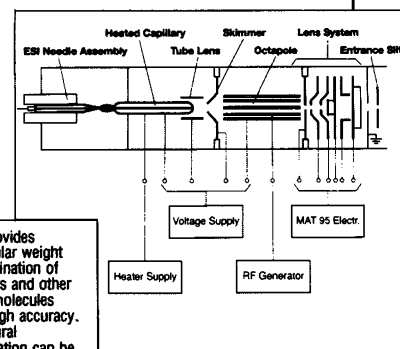


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