world countries who deal with countless children not even vaccinated against polio or tetanus or to physicians and nurses in our own country unable to apply state-of-the-art medicine to "medically indigent" people whose care appears to be of little concern to the rest of society. In these cases, the "great" technology already exists, but politics and economics prevent its application.

As a researcher and physician, I daily witness the growing frustration of creative investigators for whom research funding has become the central theme of their work. This is ultimately the fault of the dwindling commitment of our society to research, and not of the human genome project per se. But in the current context, the project appears excessive.

Is it the role of federal government to inordinately support applied, molecular biological research when genetically engineered drugs are already privately manufactured and marketed at ample prices? Apple and IBM need little taxpayer support in their research and development of smaller chips and faster processors. The real crisis in biomedical research today lies in maintaining the infrastructure of a rich variety of laboratories in academic institutions and in the training of eclectic, creative new investigators. Imbuing the human genome project with unearned moral status will not help in this pursuit.

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Koshland draws an analogy between attempts to prevent or treat mental illness and historical attempts to prevent or treat polio, with the implication that we should search for something akin to "vaccines" for mental illnesses. Later, in the context of the necessity for sequencing the human genome, rather than genomes of other species, he points out that "[s]ome diseases involve speech and mental states unique to man." The implication is that human beings reduce to their genomes. These comments gloss over some very real and very important issues, such as whether mental illnesses can be accounted for simply on the basis of genetics, whether physiological or psychological methods (or both) are most effective in preventing or treating mental illnesses, and whether or not we wish to speed the coming of a day when mental states judged (by whom?) to be antisocial, unproductive, or unpleasant are "cured" or prevented by shots.

Koshland writes that "[f]amily planning also will be made more accurate." Does this mean that couples will be able to choose characteristics they would like their child to have? Is this something we want to come about? An admittedly "farfetched" argument ("that a Hitler or a Stalin would prefer the engineering of Jews into Aryans or capitalists into communists") is assigned by Koshland to the project's adversaries, while reasonable fears are ignored. What about the much more likely possibility that the power to alter human genes will encourage well-meaning researchers and statesmen to create human beings with characteristics they see as beneficial, something along the lines of Aldous Huxley's *Brave New World*? How would the cost of dehumanization inherent in fabrication of people compare with the benefits of eradicating certain diseases?

Koshland writes that we "must step boldly and confidently across the threshold" of this new biological frontier. This ignores the question of whether we want to get where we're going. It also disregards the fact that technological advances often give us the power (for better or for worse) to do quickly and on a large scale what we had previously done with relatively little efficiency. Thus, the fact that we now have genetic counseling does not mean that this is equivalent in either benefits or dangers to the genetic technology we may soon have.

Many of us oppose regulation of science by nonscientists. Those who believe scientists are not capable of regulating their own profession may be aided by Koshland's editorial. We must show ourselves capable of thinking through the possible consequences of future lines of research and of making funding choices accordingly, not just of "advancing" in any direction.

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Epilepsy "Cure"

In the article "The epilepsy cure: Bold claims, weak data" by Robert P. Crease (News & Comment, 29 Sept., p. 1444), the main argument given against publishing papers about so-called cures for debilitating diseases that are not substantiated is the false hope given to patients. The article discusses a paper published in the *International Journal of Neurosciences* (*1*) which described the curative nature of magnetic fields for epilepsy. The paper provoked a major outcry from epileptologists, and the editor of the *International Journal of Neurosciences* is quoted as saying in response, "this isn't a case like that of cold fusion. These guys went to a journal first and not to the newspapers."

I would like to comment on that statement. Approximately 1 year ago, I was mailed a photocopy of an article (*2*) about the authors that was published in a slick Greek-language magazine that was not a scientific journal. This article reported on a potential cure for epilepsy, and a plea was made for private financing of this research. The patient who sent me the article about the researchers asked if magnetic field therapy was a cure for epilepsy. The patient's question demonstrates to me that the controversy about the research of Anninos and Tsagas and about publication of weak data by an international journal is justified.

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1. P. A. Anninos and N. Tsajas, *Int. J. Neurosci.* **46** (nos. 3 and 4), 235 (1989).
2. *Tachydromos* (*The Postman*) **47**, 50 (24 November 1988).

Skin Research Center

Marjorie Sun's article of 25 August (News & Comment, p. 810) did a fine job of capturing the historic background leading to the agreement between the Shiseido Company, Ltd., and the Massachusetts General Hospital (MGH)–Harvard (Medical School) Cutaneous Biology Research Center. The article also captured very well the spirit of the agreement with Shiseido. There are, however, some corrections and a clarification that should be made for the record: (i) The Harvard Medical School faculty has 5, not 50, full-time professors on its dermatology faculty. The full-time *staff* has about 50 faculty members. (ii) The MGH will receive well under half of the $85 million in indirect costs. (iii) Shiseido has sent 4 or 5, not 45, researchers to MGH-Harvard laboratories in the past 20 years. (iv) The MGH, not Harvard, will hold patents for and receive royalties from research supported by Shiseido. (v) Tatsuya Ozawa will serve as associate director for Shiseido Liaison and is expected to spend the preponderance of his time in Japan.

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Erratum: The credit line for the photograph of polyacetylene fibers accompanying Joseph Alper's article "Conductive polymers recharged" (Research News, 13 Oct., p. 208) should have read, "Tokyo Institute of Technology."