Letters

Health Care and the Law

Daniel E. Koshland, Jr.'s editorial advocating a hard-headed, yet compassionate national health insurance scheme (6 Apr., p. 9) makes many important points and provides a sobering analysis of the costs of our failure to adopt such a scheme.

One argument that Koshland makes, however, is unpersuasive. He writes that indirect savings might be realized because jurors will no longer feel impelled to award damages in weak tort cases simply to enable an injured person to afford appropriate medical care. Ultimately, he suggests, the standard for liability might be cranked up to clear negligence, thereby saving more money. Koshland's premise that jurors' decisions are affected by their desire to provide funds for medical care for those without insurance is likely incorrect. More than 85% of Americans have some form of health insurance, and virtually all jurisdictions prohibit any mention to the jury of the existence of insurance (or lack thereof) in a case. Thus, there is no way for a jury to know who needs funds for medical care or who has medical insurance. Moreover, by the time cases get to trial, the vast majority of injured plaintiffs have already received (or have not received) whatever medical care they require. Finally, imposing a higher liability standard will not make the costs of accidents go away, it will simply leave those costs with the victim rather than with some other entity that may be able to take cost-effective measures to avoid such accidents in the future.

It is time to take the financial leap and afford all Americans the dignity and decency of basic medical care. The benefits of such a reform are great enough without also expecting it to improve the tort system.

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Full Disclosure at the University of Florida

Eliot Marshall's article "The Florida case: Appearances matter" (News & Comment, 13 Apr., p. 153) contains a number of statements that need to be corrected.

1) Nicholas Bodor did not found the company, Pharmatec, Inc., as stated in the article. It is not now, nor was it ever, owned by him. His equity position is less than 5%.

2) It is incorrect to state or imply that no one at the University of Florida was willing to discuss the issue of toxic side effects. Every question was addressed both by Bodor and by external scientists.

3) The MPTP issue was not the discovery of Kenneth Sloan, as it was considered and reviewed much earlier by Bodor and his colleagues.

4) A leading scientist in the field was asked by us to review and comment on the claim by Sloan that Bodor was using a toxic compound. The scientist wrote that such a conclusion was a "fallacy of reasoning [that] had to derive from individuals unfamiliar with chemistry or pharmacology, except in the most superficial sense."

The tough new rules referred to at Harvard were followed and complied with by Bodor from the beginning. He provided full disclosures and requested prior approval for conducting the basic research with Pharmatec funds. The research conducted by Bodor and his colleagues or students was basic research and not clinical trials or work on direct development of products.

A number of reporters have investigated and reported on this project, and several University of Florida committees have reviewed the matter. These investigations have not identified one single incident of inappropriate judgment or action by either Bodor or the University of Florida. Conflict of interest has been properly disclosed and properly managed.

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Response: Nicholas Bodor's primary role in the founding of Pharmatec is reflected in a 10-K statement submitted by the company to the Securities and Exchange Commission in 1989 (*1*). It says Pharmatec was incorporated in late December 1982 for the purpose of commercializing Bodor's chemical delivery system, and it lists Bodor as vice president since January 1983 and director since March 1983 (*1*).

As for the risk of Parkinson-like toxic effects, the record shows that Pharmatec considered this possibility before Kenneth Sloan raised it in 1984 and rejected it as most unlikely. But the company did not test the question in animals until several years later, when Bodor ran an experiment in cynomolgus monkeys, published in 1988. The results were negative (*2*).

The same leading scientist quoted by Price and Challoner, Sanford Markey, said, in a phone conversation with me, "People who look at [chemical] structures and pretend to see things are more astrologers than medicinal chemists. . . . You have to do the animal testing to ascertain whether there is toxicity or not."

—ELIOT MARSHALL

REFERENCES

1. "Form 10-K: Annual Report. . . for the fiscal year ended December 31, 1988" (Pharmatec, Inc., Alachua, FL, 1988), pp. 2 and 59.
2. M. E. Brewster *et al.*, *Neurosci. Let.* **87**, 277 (1988).

Neural Interfacing

I would like to clarify some statements made in Sarah Williams' 4 May article about our research (Research News, p. 555).

We make no claim to have been able to stimulate "individual neurons." While this may be possible with our device, our initial experiments were not designed to test this. In the pilot study, we demonstrated recording from, and stimulation of, peripheral nerves. We believe that we were able to *record* action potentials from individual neurons. However, there is a big difference between stimulating and recording. Current work is focused on determining how selective the devices are in both of these modes.

Our "next step" will not be the design of a device that can communicate, "through an implanted radio transceiver, with the outside world." This is a long-term goal. We are involved in the gradual development of the neural interface device itself and do not expect to see it clinically applied in less than a decade. Even at that point, we do not envision the use of "40 chips implanted from the elbow on down," but rather the initial use of only a few implanted devices to control a simple prosthesis.

I would also like to emphasize that the holes in the silicon were not drilled "with a laser," but with a high-performance plasma-etching process developed for this purpose. Laser drilling is not practical for use in the devices we are designing for a number of reasons, including difficulty in alignment to on-chip microelectronic devices. Such alignment calls for tolerances on the order of ± 1 micrometer. The development of such basic technologies is what is important in our present work, which is funded by the Department of Veterans Affairs.

Attempts to fabricate and use such neural interfaces are not new. Since the early 1960s experiments have been conducted along these lines, but only recently have fabrication techniques been developed that allow devices to survive in the body for extended

periods. Interfacing to the nervous system will undoubtedly be done sooner or later, with or without this project. The only claim we make is that we are doing our best to achieve this goal.

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Engineering Design

There is nothing wrong with pointing out that U.S. competitiveness problems in manufactured goods are caused in part by high interest rates, poor manufacturing practices, trade laws, labor costs, labor-management issues, and the like (Philip H. Abelson, "The lost U.S. excellence in manufacturing," Editorial, 13, Apr., p. 125). However, to omit engineering design as a major contributor is like blaming everyone but the architect for a bad building or everyone but the editor for a bad magazine. U.S. firms that have met the competitiveness issue successfully (for example, Xerox, Hewlett-Packard, Carrier, and parts of General Electric) have done so by dramatic reformation of their engineering design practices. Competitive product quality, cost, and market timeliness derive primarily from engineering design. In fact, exclusive focus on other issues (financial, legal, and especially manufacturing) is a major reason some firms do not make the changes necessary to reform their design processes and practices. Besides, it is not clear that we ever had "excellence" in manufactured goods; perhaps we just had very little competition and so could get away with neglecting our engineering design infrastructure, including education and research as well as industrial practice. No more.

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Global Warming Questions

The 30 March editorial "Uncertainties about global warming" by Philip H. Abelson (p. 1529) puzzled me in several ways.

Why should attention be concentrated on the global average warming, to the exclusion of other appreciable effects of the $CO_2 + CH_4$ increase indicated by the models of James Hansen *et al.*, S. Manabe *et al.*, and others, such as the poleward shift of rainfall?

Why should the definition of caution in the face of uncertainty be the preservation of existing economic patterns—of benefit to the older and the richer, rather than the reduction of risk to the environment and resources—of benefit to the younger and the poorer?

Why should climatic computer models be rigorous before action is undertaken? It is my perception from what technological history I've read that if mankind had always insisted on its wise men being rigorous, we'd still be living in caves and facing 40-year life expectancies.

Why should adverse balances of trade reduce the chances of lesser developed countries' contributing to the increase of CO_2? Low-grade resources (lignite, peat, and rain forests) are widespread in these countries. Why wouldn't these countries imitate Ireland and build power plants to burn peat, despite its being much more expensive than imported coal and oil (especially since the labor-intensive activity of peat-digging helps relieve unemployment)?

How do biomass techniques help reduce CO_2 increase? Today vigorous burning of biomass has put three lesser developed countries (Brazil, Indonesia, and Colombia) in the top ten of atmospheric CO_2 contributors.

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Unscrambling an Egg

In M. Mitchell Waldrop's article "Spontaneous order, evolution, and life" (Research News, 30 Mar., p. 1543), he "roughly paraphrased" the Second Law of Thermodynamics as "you can't unscramble an egg." An egg can be unscrambled, and the Second Law violated, by feeding it to a hen.

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