

## Alternative toxicity tests

SIR — Your correspondents (*Nature* 341, 680; 1989 and 353, 489; 1991) have described plans for replacing the LD<sub>50</sub> toxicity test with the "fixed-dose procedure" first advocated by the British Toxicology Society, which avoids using death of the animals as an endpoint, and instead relies on the observation of clear signs of toxicity developed at one of a series of fixed dose levels. This welcome development, promising revisions of international guidelines, has taken a decade to reach fruition, partly because of the time needed for the worldwide evaluation prompted by the British society.

In Germany, there is parallel interest in a procedure, originally suggested by Professor Gerhardt Zbinden, that would make still more economical use of animals in toxicity testing. This method also uses a series of fixed dose levels, but makes use of a smaller group size of three per dose range and a sequential testing strategy that requires at each dose level a decision either to stop further testing or to proceed at a higher or lower dose level. Validation tests now under way suggest that the "acute toxic class" procedure requires an average of only 7.5 animals per test, compared with 17.5 per test in the fixed dose procedure — and many more in the LD<sub>50</sub> test.

Laboratories in the United States and Japan are collaborating in tests of the procedure. We hope that, in due course, EC and OECD guidelines will be further revised so as to accommodate it.

**Horst Spielmann**

*Institut für Veterinärmedizin  
des Bundesgesundheitsamtes,  
Postfach 33 00 13,  
D-1000 Berlin 33, Germany*

## Hungary's plans

SIR — Your recent articles on Hungarian science (*Nature* 355, 669–672; 1992) give a one-sided picture. This may be due to simplification, preconceptions or a lack of information. After almost 50 years of military and political confrontation, it takes time to change prejudices both in the West and in the East. So let me draw the other side of the picture.

A recent study by the Organisation for Economic Co-operation and Development (OECD) noted that "there is a strong tradition of respect and support for knowledge and science in Hungary". We have a great many qualified people, who are well respected at international conferences and research laboratories. Following the collapse of the Soviet system, the state of technology transfer

is relatively poor, but the OECD study applauds the plans of universities to set up "Fraunhofer-like" institutions and technology centres close to their campuses. OECD also remarks on Hungary's efforts to change its international orientation. In 1991 alone, the government signed an agreement on cooperation with the European Space Agency, became a full member of COST, started project-level participation in some EUREKA projects and successfully used the PHARE assistance programme for improving its scientific infrastructure. The OECD study noted that "this cooperation constitutes the most efficient vehicle for integrating Hungarian researchers in international networks".

Several years ago, Hungary set up new competitive funds for financing research and development, "important tools for stimulating and guiding the research effort", the OECD study says. Moreover, the academy, which has played a very important role even in the past 40 years, continues to work for the improvement of Hungarian science. According to the OECD study, "recent and planned . . . reforms make it fully independent from the government and enlarge its scientific constituencies . . . Significant actions recently taken or being planned are going in the right direction."

**Lajos Nyíri**

*National Committee for Technological  
Development,  
H-1052 Budapest,  
V. Martinelli ter 8, Hungary*

## Fetal tissue

SIR — Leonard Hayflick (*Nature* 356, 652, 1992) points out that many of the people who support the current US ban on the use of federal funds for transplantation of aborted fetal tissue into patients may be benefactors of research that he and others have conducted using normal human fetal cell strains. This begs the more relevant question, which is whether or not such people would have supported this research if they knew that it depended on the intentional destruction of the 'donors'. Hayflick does not clarify whether his own work, or earlier work, relied on the use of intentionally aborted fetal tissue or whether the same work was, or could have been, carried out with tissue obtained from spontaneous abortions.

The failure to make such a distinction suggests that he misunderstands the objections raised by those of us who support the administration's ban. We believe that the means of death of the individuals from whom the organs, tissue or cells are obtained is morally relevant, regardless of the age of the 'donor'. We

object to the use of tissue derived from induced abortion because of the way in which it is obtained.

The most effective argument against the notion that we can somehow separate the practice of abortion from the utilization of its 'products' is presented by Hayflick who suggests benefactors are in no position to raise moral objections. In other words, there is a link between the acquisition and subsequent use of the tissue. But the existence of benefit does not undermine the basis for objecting to the manner in which the research was conducted, and if informed that the benefit depends on an immoral practice, many of us would forgo the benefit.

However, Hayflick raises an interesting point. As a society, it is not clear how we can raise any meaningful objections to the exploitation of fetal life for any purpose (commercial or other) as long as we maintain the policy that such individuals are expendable. We find ourselves in the ironic position of valuing the human fetus as a contributor to society but not as a member with protectable interests.

**Keith A. Crutcher**

*Department of Neurosurgery,  
William Everson*

*Department of Obstetrics and Gynecology,  
University of Cincinnati Medical Center,  
Cincinnati, Ohio 45267-0515, USA*

## No politics please

SIR — I have long considered *Nature* to be the preeminent source of news on contemporary scientific issues. Feeling the need for neoconservative doctrine, I would consult a journal, such as *The Economist*, specializing in such material. I was therefore dismayed to read in the Opinion section of *Nature* (356, 92; 1992) a political commentary calling for an immediate free trade agreement between Canada and Mexico. The notion that such an agreement would be beneficial for Canada ignores the massive deindustrialization experienced by Canada following the recent agreement with the United States. Furthermore, the writer seems to be unaware that Mexico is governed by a dictator. An unqualified belief in the benefits of free trade, irrespective of the political legitimacy of the Mexican government, betrays a faith unlikely to be shaken by unpleasant facts. A scientific journal should not be a forum for the sort of unsustainable assertions which seem to gain credibility through repetition: acclamation is not proof of worth.

**Paul Cumming**

*Montreal Neurological Institute  
and Hospital,  
3801 rue University,  
Montreal, Quebec, Canada H3A 2B4*