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EDITORIAL

## Sanctions

It is almost a year since sanctions were imposed by the United States, Japan and some countries of Western Europe, following the Pokhran explosions. While the sanctions were primarily targetted at laboratories associated with strategic research programmes, there have inevitably been some effects felt by institutions largely concerned with basic research. For example, the Tata Institute of Fundamental Research (TIFR) in Mumbai is almost exclusively devoted to 'blue sky' research, but is funded directly by the Department of Atomic Energy (DAE). The historical association of TIFR and the DAE, of course, dates back to the days of Homi Bhabha. This relationship has been a very fruitful one, with the TIFR budgets being insulated from the many uncertainties faced by institutions outside the DAE umbrella. Unfortunately, connection with the DAE now means that even scientists doing basic biology, chemistry or physics (mathematicians, fortunately are apparently immune to the effects of sanctions) face great difficulties in getting chemicals and equipment from several overseas sources. Even the Tata Memorial Hospital, which is exclusively devoted to cancer therapy, appears to be suffering because of its DAE connection. Sanctions have also led to completely unacceptable behaviour on the part of several companies which refuse to provide warranty replacements for expensive equipment which has already been paid for. The official position (understandably) has been that sanctions are having no effect. In reality, however, there will be pockets of scientists whose individual researches are being affected by the non-availability of materials.

There is little doubt that sanctions are a knee jerk reaction to the nuclear explosions. Are wide ranging sanctions justifiable? How do we minimize the impact of sanctions? These questions should be broadly addressed. It does not help to say that sanctions do not exist or that they are without any effect on our scientific research. Even more importantly we must assess our own response to countries and companies which have proceeded to impose restrictions on the flow of materials and sometimes, even on the travel of scientists. Several months after the explosions a group of American high-energy physicists from Fermilab were denied permission by the US Department of Energy to attend a conference at TIFR, an action clearly inconsistent with the norms of international scientific exchange. What has been really surprising is the complete silence of Western scientific bodies to actions which are intended to curb free, unfettered international scientific discourse. Even the voice of individual scientists has been strangely muted. A notable exception was an editorial in *Science* (1999, 283, 184) by Irving A. Lerch which did conclude: 'The efforts of government officials to slow this engine of exchange under the disguise of preventing weapons technology transfers threaten debilitating consequences for science here and abroad'. The present indifference of international unions and scientific societies is in marked contrast to their apparently activist stances in the past. Many of these bodies have always been the most vocal in their protest, when there has been the slightest indication that freedom of travel to scientific meetings has been curbed. Most notably, during the apartheid era, the scientific unions invariably dominated by the West, were foremost in demanding the entry of South African scientists (white, of course) to conferences in India. The countries that are the foremost proponents of sanctions are also the very same countries which have no difficulty in shipping scientific equipment and chemicals to many countries possessing nuclear weapons (and research capabilities in this area).

What have our scientific bodies been doing to build pressure in the international scientific community against sanctions? From the public record at least, nothing seems to be happening. The Indian Science Congress played host in January at Chennai, to Bruce Alberts, the President of the US National Academy of Sciences (NAS). Whether the position of the NAS on sanctions was probed or not is unclear. There have been no public statements on this issue, which are intended to give the feeling that Indian scientific bodies are going to lobby vigorously with their counterparts elsewhere. The Indian National Science Academy which holds a unique position in representing this country on international unions has a special responsibility in coordinating efforts to rally support in the international scientific community against sanctions, which affect research in all areas, indiscriminately. At the same time we must also carefully evaluate the pros and cons of many international exchange programmes that we have with the countries imposing sanctions. It is also time that efforts are made to help those Indian scientists, whose work is affected, by some collective action.

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