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Patent rules should include a defence against monopolies

Although resentment persists against the patenting of genetic knowledge, the breadth of such patenting is of more urgent concern. The time is right for serious political scrutiny of the issue at a global level.

Few issues are likely to receive as much attention at the World Conference on Science to be held in Budapest later this month as access to scientific knowledge. One aspect likely to be high on the agenda will be that of intellectual property rights over scientific knowledge in general, and genetic knowledge in particular. Some will no doubt seek to use the conference to question again whether it is morally acceptable to claim patents over genetic knowledge at all, on the basis that such data should be considered as a product of nature. But the debate should not be diverted from the more immediate question of whether the breadth and nature of some patents allow their owners too extensive control over this key area of technology.

The issue was quite properly highlighted last month in a report on genetically modified crops produced by the Nuffield Council on Bioethics. Although overshadowed by the council's louder message — the "moral imperative" to assure the development of such crops for use in developing countries — the report also warned against the danger that an entire crop might become controlled by a single company. It called on international plant and patent offices "to avoid granting broad patents that could lead to monopoly suppliers".

Few would disagree with this sentiment. One reason for the vigorous backlash against the growth of such crops in Britain, for example, is that concerns about the nature of the technology itself have been magnified by fears that it is being introduced into the market-place largely at the behest of a single US corporation, Monsanto. Such worries find an easy resonance among protest and opposition groups in Third World countries. Bearing in mind strong public concern over monopoly control of food production, it is important that the patent system should not be seen as an agent of such monopolization.

Can excesses be avoided through vigilant application of the current patent system, or is broader political action needed? There is some evidence that current constraints are sufficient, particularly as broad patent claims are highly vulnerable to challenges that the technologies they describe are not truly inventive. This, for example, is the factor that last week allowed critics to prevail against a patent issued by the European Patent Office to a US biotechnology company on the use of stored stem cells from umbilical-cord blood (see page 626).

But there are also dimensions that require political scrutiny, particularly when there are ethical considerations at stake which patent offices are ill-equipped to deal with. One is the question that has been raised by biotechnology critics in the United States of where to draw a dividing line when patenting organisms that contain human cells (see page 626). The US Patent Office itself appears to admit that US legislation is less than clear on this issue. Firm guidelines, ideally resulting from a vigorous political discussion of the consequences, could help to clarify an otherwise muddy area.

This is where the Budapest conference could play a useful role. It would be foolhardy to ask the conference to register broad disapproval of the patenting in principle of sensitive areas of scientific knowledge: too much money is at stake — and too much has already been patented — for such a move to make much sense. But a focused debate on the implications of the breadth of patents currently being issued, the ambiguities and moral uncertainties in current patent legislation, and the political opportunities for addressing both issues (for example, through revisions to the rules of the World Trade Organization) would be welcome. It is to address just such issues that the conference has been organized. Hopefully, delegates will grasp the opportunity presented to them with the commitment and seriousness it requires. □

Boost US infrastructure

Congress should seize a welcome opportunity to strengthen dilapidated university laboratories.

Surprising though it may seem to those in less well-endowed countries, scientists in the United States have good reason to complain of ageing and overcrowded laboratories, obsolescent instruments and daunting costs in maintaining up-to-date specialized facilities. In a biennial survey conducted across the disciplines last year by the National Science Foundation, fully two-thirds of institutions reported overcrowding. And while they said that nearly one-quarter of their research space needed major renovation or replacement, they also said they had put off over $11 billion in such work for lack of funds.

Given a major decline in defence funding in universities, for example, some suffering in the physical sciences, though regrettable, is not surprising. But in the face of these numbers, and in this era of $2-billion jumps in the budget of the National Institutes of Health, it is startling to consider that this agency's main programme for funding such construction is spending just $30 million this year. Similarly, a shared-instrumentation programme delivers only $35 million for costly instruments not covered by individual research grants. To be fair, the $15.6-billion agency also directs some $3 billion to universities in indirect research costs, some of which can be drawn on for construction and instrumentation. But, especially for smaller and poorer schools, these funds hardly meet the sizeable bill for getting projects off the ground and instruments bought.

Senator Tom Harkin (Democrat, Iowa) has the right idea in a bill that would designate $750 million for the National Institutes of Health to spend on construction and renovation at its grantee institutions in the next two years (see page 621). Individual scientists may worry that this would eat into their piece of a finite pie. But that would be short-sighted in a golden age in which the pie is growing considerably every year. For the promise of biomedical research to be realized, its underpinnings have to be maintained. Congress should back Harkin's proposal, while not losing sight of the needs of other sciences too. □

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