preoccupations, largely with monetary and fiscal matters (and with endless recalculations of the likely strength of the parliamentary opposition to the Maastricht Treaty). To be sure, it will help the economy in general if interest rates are reduced, even if there will have to be higher taxes early in 1993 to pay for them. But the government should be even more concerned with removing present British impediments to modernity.

This is not to suggest that the government should again take a hand in the ownership and management of industry, but that it should exert its potentially powerful influence on the way in which British industry is managed, or mismanaged. After a decade in which British academic researchers were upbraided for their supposed indifference to economic imperatives, it is high time that British industry's managers were required to shoulder responsibility for the neglect of innovation (there are exceptions) and their preoccupation with the next half-year's bottom line rather than the long-term welfare of their enterprises (and of those who work in them). The government itself has direct responsibility for education and training in modern skills, in management as well as technology, but has neglected them. Will it now do better?

The government could also exert a beneficial influence on the temper of the British reaction to the events of the past few weeks, which has been tinged to an unhealthy degree with chauvinism, even xenophobia. While there are good reasons for asking that the Maastricht Treaty should not come into force without important (and negotiable) changes in the way in which the European Communities' democratic, administrative and legal institutions function, those in Britain now yearning for a return to the simplicities of island independence should more often be reminded of the heavy price in collective impoverishment that would have to be paid for that claustrophobic condition. The British prime minister, whose policy was to put Britain "at the heart of Europe", and who happens to be the current president of Europe, might say these things more often than he does. Whether they would lose votes is arguable, but does not public responsibility require no less? □

Gene patents

The decision of the US Patent Office not to protect gene fragments is welcome, but questions remain.

Now for the good news! The rejection last week by the US Patent Office of the application by the US National Institutes of Health (NIH) for patents covering more than 2,000 human genes identified by cDNA cloning is thoroughly welcome (see *Nature* **359**, 263; 1992). For the past year, the possibility that researchers might obtain a licence for the exclusive exploitation of a gene which has not even been fully characterized, but merely made identifiable by means of a length of cDNA typically a few hundred bases long, has been the source of consternation in the human genome community. (The European Science Foundation is the research organization most recently to speak out against the prospect.) For the time being at least, the threat has faded.

Why does (or did) it matter? The simple explanation is that the description of the nucleotide sequence of the human genome must necessarily be an international venture. So much is plain from the mere sight of the list of authors at the head of almost any research article in the field (see, for example, *Nature* **359**, 380; 1 October 1992). Moreover, it is exceedingly difficult to understand how the venture could succeed without the free exchange and publication of information. NIH's original explanation of its application for patent protection for the 2,000 gene fragments was that free access to its information could be assured only in such a way. US patent law would indeed provide for that. But patent law elsewhere is different, and does not provide for a period of twelve months after publication during which patent applications are still possible. The unwelcome result of the NIH application was to persuade others to apply for patents first and to make data available only afterwards. That inhibition may now have been removed.

That, at least, is the reasonable expectation. Although NIH plans to appeal against the ruling by the Patent Office, and is talking as if it is confident of the outcome, there seems little room for further argument over the chief grounds on which the patent application was turned down. The best hope now is that the Patent Office will appreciate the need for a speedy resolution of the appeal, the mere existence of which may persuade others working in this field not to make their data publicly available. Indeed, a swift determination could be invaluable. When first announced, the mere possibility that it might be possible to patent even fragments of human genes seemed an affront to commonsense. The whole business has served to heighten public anxiety about the supposedly innate wickedness of geneticists. If the outcome of the appeal were to clarify what the Patent Office considers valid under the existing legislation, NIH's adventure may yet prove to have been worthwhile.

The question remains of where to draw the line on gene patents. The US Patent Office appears to have decided against NIH on the grounds that its purported inventions were "obvious". The question of the "utility" of the gene sequences is given only scant attention, but would no doubt have provided a further hurdle at which the application would have fallen. For what use, in itself, is the nucleotide structure of a gene when nothing is known of its function, in normalcy and disease? One might as well expect to be able to patent the knowledge of the umpteenth digit in the decimal representation of the quantity π. On the other hand, if a person has identified a gene and shown how it may be used for some practical purpose, the spirit of patent law suggests that he or she should be entitled to protection. That would, for example, apply when a method had been developed for using the knowledge of the gene to treat an inherited disease (as familial hypercholesterolaemia is now routinely dealt with). Those in the US Congress planning to amend the law so as to clarify the position should follow that rubric and not attempt to make patentable the next clutch of sequences of unknown function. □