

Science ; future

Science



Much of what I've said would seem uncontroversial or even platitudinous to the scientifically-attuned audiences here in Newcastle this week. But there's one thing that scientific advisors in any democratic system must not forget. When really big and long-term policies are in contention - whether about nuclear weapons, nuclear power, drug classification, or health risks - political decisions are seldom purely scientific: they involve ethics, economics and social policies as well.

Such discussions should engage all of us, as citizens - and of course our elected representatives. Sometimes this has happened, and constructively too. The dialogue with parliamentarians led, despite divergent ethical stances, to a generally-admired legal framework on embryos and stem cells - a contrast to what happened in the US. And Lisa Jardine has chaired the HFEA, another fine precedent. But we've had failures too: the GM crop debate was left too late - to a time when opinion was already polarised between eco-campaigners on the one side and commercial interests on the other.

Scientists have a special responsibility to engage - though they should accept that on the economic, social and ethical aspects of any policy they speak as citizens and not as experts. But despite many worthy efforts, there are habitual grumbles that such inputs don't have much traction with politicians. For them, the urgent trumps the important. The local trumps the global. And getting re-elected trumps almost everything. Anything that gets headlined in the media, or makes their postbag bulge, will get attention.

It's volume not quality that counts. So scientists might have more leverage on politicians indirectly - by publicising their research and letting the media do the campaigning - rather than by more official and direct channels. This is one reason - over and above the general cultural value of our findings - why " outreach" by scientists is important. And there are special things universities teachers can do. We're privileged to have influence over successive generations of students.

We should try to sensitise them to the issues that will confront them in their careers - indeed, polls show, unsurprisingly, that younger people who expect to survive most of the century, are more engaged and anxious about long-term issues. We fret too much about minor hazards of everyday life: improbable air crashes, carcinogens in food, low radiation doses, and so forth. But the wide public is in denial about two kinds of threats: those that we're causing collectively to the biosphere, and those that stem from the greater vulnerability of our interconnected world to error or terror induced by individuals or small groups.

The issues impel us to plan internationally (for instance, whether or not a pandemic gets global grip may hinge, for instance, on how quickly a Vietnamese poultry farmer can report any strange sickness). And many of them - energy and climate change, for instance, involve multi-decade timescales - plainly far outside the " comfort zone" of most politicians. One issue that should be addressed is whether nations need to give up more sovereignty to new organisations along the lines of IAEA, WHO, etc.

Final message Unlike our 17th century forebears who I cited at the beginning of this talk, we know a great deal about our world - and indeed about what lies beyond. Technologies that our ancestors couldn't have conceived enrich our lives and our understanding. Many phenomena still make us fearful, but the advance of science spares us from irrational dread. We know that we are stewards of a precious "pale blue dot" in a vast cosmos - a planet with a future measured in billions of years, whose fate depends on humanity's collective actions. But all too often the focus is parochial and short term.

We downplay what's happening even now in impoverished far-away countries. And we discount too heavily the problems we'll leave for our grandchildren. We can truly be techno-optimists. But the intractable politics and sociology - the gap between potentialities and what actually happens - engenders pessimism. We need a change in priorities and perspective - and soon - if we are to navigate the challenges of the 21st century: to share the benefits of globalisation, to prioritise clean energy, and sustainable agriculture; and to handle the Promethian challenge posed by ever more powerful technology.

To survive this century, we'll need the idealistic and effective efforts of natural scientists, environmentalists, social scientists and humanists. They must be guided by the insights that 21st century science will offer, but inspired by values that science itself can't provide. And I give the last word to a great scientist who was himself once the president of the BA - the biologist Peter Medawar: The bells that toll for mankind are like the bells of Alpine cattle. They are attached to our own necks, and it must be our fault if they do not make a tuneful and melodious sound.

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