Reaching out

Scientists met in Heidelberg and discussed methods of restoring public trust in science

Science and language have come a long way together since the dawn of civilisation. At the academies of ancient Greece, teachers and their students discussed and argued until they came to reasonable explanations for the phenomena of the world. Their debates marked the birth of the natural as well as the social sciences. Since then, science and technology have driven civilisation and fascinated people. During the Renaissance and the enlightenment, it was simply considered a duty

Right at the start, two speakers presented some of science's greatest recent successes. Robin A. Weiss from University College in London showed how biologists and epidemiologists tracked down the cause of AIDS—a disease Weiss described as 'coming out of nowhere'—in record time. Only 5 years after AIDS was first recognised in 1981, the HIV genome was sequenced, Western countries made screening of blood donations for the virus obligatory and the first AZT trials had begun. 'That was a

growing biotech industry—particularly the agricultural industry and the companies involved in the economic exploitation of the human genome—has also raised fears and public mistrust. Maynard Olson, Director of the University of Washington Genome Center in St Louis, MI, sees an increasing politicisation of science that is the legacy of the race between the private and public sectors to decipher the human genome first. 'In a politicised debate,' he described the danger of this development: 'it needs only a short statement to inflict lots of damage.' The problem is further amplified by the strategies biotech companies employ to attract and please shareholders. Olson called PR campaigns and advertisements that claim to make the world free of disease or famine 'an irresponsibility which makes one gag,' and 'which is essentially absurd,' because it evokes public expectations that ultimately cannot be fulfilled.

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of educated society to follow the successes and the debates of scientists in their attempts to explain nature logically.

But it seems that science has lost its language or, at least, its ability to talk to and fascinate the public. 'We don't use dialogue in discourse, we use monologues,' as Carl Djerassi, Professor of Chemistry at Stanford University, put it. Beginning with the environmental movement in the 1960s, people increasingly regarded technological solutions to the problems of a modern society as a curse rather than a blessing. And with some of the health and environmental catastrophes of 20th century technology, scientists moved into the critics' line of fire. As a consequence, potentially beneficial biological technologies have been blocked or slowed down by environmental or consumer concerns.

To find out what went wrong and to find ways of re-establishing a dialogue with the public, the European Molecular Biology Laboratory, the European Molecular Biology Organisation and the Genetics in Europe Open Days organised the 'Developing a New Dialogue' meeting last November. For three days, biological scientists, social scientists, lawyers and representatives of the public and the media met in Heidelberg, Germany, and discussed how best to counter public mistrust in the technological exploitation of biological sciences.

mighty achievement,' Weiss said. 'There are not many discoveries in medicine that translate so quickly into public health.' Nevertheless, at the end of 1999, 33.6 million people were estimated to be infected with HIV—about two-thirds of them in sub-Saharan Africa—and there is still no vaccine in sight to fight this plague.

The other success story, albeit sounding ironic, is the 'saga of BSE', the topic of John Collinge's talk. Collinge, Director of the MRC Prion Unit at the Imperial College in London, demonstrated how biologists came to understand a disease that defied all attempts to explain it based on existing knowledge. Indeed, the discovery by Stanley Prusiner that prions are the disease-causing agent—a true scientific revolution—gave some completely new insights into nature. Prusiner was subsequently awarded the Nobel Prize for his ground-breaking work. But BSE has become a pyrrhic victory for biology. European consumers have lost faith in public health policies as well as in the scientists who sided with the government to dispel public concerns about infected beef, for purely economic reasons. This mistrust now extends to other areas and has already handicapped beneficial plant and stem cell research, as well as gene therapy.

The BSE disaster is not the only reason for the bad reputation that science and technology have recently acquired. The

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Peter N. Goodfellow, Senior Vice-President of Discovery at SmithKline Beecham, was left with the task of defending the role of industry in the modern market society. In his talk about the social costs of better disease treatment, Goodfellow argued that the cost and time taken to develop a new drug are too off-putting for society. 'It's a very expensive business with a very high risk, so the government says "Let the companies make drugs",' he said. So some of the problems Olson addressed result from society's decision to pass the risk on to the pharmaceutical and biotech industry. 'We chose the capitalistic approach, so we get a capitalistic solution,' Goodfellow said. And it does not look as if this is going to change fundamentally, because, as Djerassi pointed out in the following discussion, there is no alternative to the capitalist system.

But things might change again. Goodfellow pointed out that, as new platform technologies such as genomics and large-scale population screens become available, society will have to pay its share for

regard the media as irresponsible scandal mongers who either ignore science altogether or just distort the truth in their favour. But the media is actually simply doing its job, which is to give the public

given by the scientists. Furthermore, she pointed out that in the GMO debate, scientists are still more trusted than the agricultural industry or governments.

The fact that the public is interested when affected and is able to understand the scientific debate should be a good sign for scientists interested in a dialogue. 'I'm very happy that society is maturing and is not taking everything for granted—not from politics, scientists or Greenpeace,' Stefan Flothmann, a member of the Senior Management Team of Greenpeace Germany, said. The public still holds science in high regard, he continued, certainly higher than industry or politics. 'Nobody from the outside can discredit science,' he said. It is only scientists themselves that can destroy public trust. So admitting mistakes, for instance—a step that many scientists are still reluctant to take—would certainly improve the public's opinion of scientists.

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the development of new drugs too. By looking at genetic and environmental differences between populations pharmaceutical companies expect the identification of new drug targets for numerous diseases. But this would mean giving the private sector access to the medical data of patient collections—'the social costs for better public health'. So far this is out of the question, as the public and politicians are concerned about the protection of privacy and potential abuses by health and life insurance companies. Consequently, Goodfellow asked for a debate on the risks and benefits, and the drafting of appropriate rules of conduct. 'I would make a plea that we take a rational approach to the future,' he said. 'Just because something is possible does not mean it is inevitable. It is up to us to prevent abuse.'

Actually, this approach is already being taken with the population of Iceland. Kari Stefánsson, President and Chief Executive Officer of deCode Genetics, demonstrated how access to family pedigrees, genetic and medical data of Icelanders allowed his company to identify candidate genes for numerous diseases such as stroke, arthritis, psoriasis, asthma and dementia. Iceland is another good example of how co-operation between industry and society can be established—mainly by extensive discussion and dialogue between the public, representatives of the company and the scientists. Indeed, the outcome of such a debate can provide the greatest benefit primarily for those affected. 'Patients have no interest in data protection,' Stefánsson said about the experience with the Icelandic population. 'They are interested in working with the scientists.'

Indeed, 91% of Icelanders in a recent poll support legislation to establish a centralised medical database and give deCode access to the data. But the company and Stefánsson have been labelled as the ugly face of commercialism by the media. Not surprisingly, many scientists

what the public wants, according to Vivienne Parry, a writer and broadcaster for the BBC. A common misunderstanding among scientists is that the public should be interested in science, she said. 'You think the public ought to know what you know,' Parry addressed the scientists. 'Actually, the public doesn't want to know.' Furthermore, the public certainly does not wish to have the same detail of information that a scientist needs. 'You need to provide information as clearly as possible,' Parry advised the forum, 'but you don't need to bore the public to death with Mendelian peas. It's about the broad brush, it's not about the details.'

PABE demonstrated that the public is very well able to follow and understand scientific arguments

But to blame the current trust crisis in science on the public's indifference is certainly not correct either, as Parry pointed out. 'When they want to know, they find out,' she said. 'The public is perfectly able to understand even complex issues.' This is the same result that PABE, the Public Perceptions of Agricultural Biotechnologies in Europe project, found. The project tried to assess what consumers in Europe knew about GM plants and 'GM food' and whether they were able to understand the scientific background. Claire Marris, from the French National Institute for Agricultural Research in Ivry-sur-Seine, who is involved in PABE, demonstrated that the public is very well able to follow and understand the scientific arguments. 'The discussions revealed that people very quickly asked questions that went to the very heart of the scientific problem,' she said. Indeed, it is often not a lack of understanding on the side of the public, Marris explained, but rather a lack of information

Many of the speakers presented more ideas on what scientists can learn from public relations disasters such as BSE or 'GM food' and on how to overcome public mistrust. John Collinge gave the assembly of scientists the advice that they should be open with the public and not get involved in policy making. Maynard Olson invoked as an example the situation in the USA, where research institutions have their own PR departments to sell their science to the public and the media. However, he warned that scientists must get their stories straight to become credible to the public: 'You can't talk out of several sides of your mouth at the same time to the same public.' The most helpful advice, however, might be that which Stefan Flothmann, drawing from Greenpeace's PR experience, gave the forum. Scientists should not rely on the media or anyone else when talking to the public, but instead be open to discussion and arguments, he said. 'One has to generate tolerance as a first step of a debate.'

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