September 11 and Science

Watching the attack on the World Trade Center unfold, it was clear that some basic rules of politics and security have been changed irreversibly. We have all mentally rerun the footage of the callous use of an aeroplane as a terrorist bomb and the collapse of the twin towers, yet we remain in disbelief that it did actually happen. Now, we wait for the next phase, unsure if the counter-attack against the Taliban regime in Afghanistan will provoke another terrorist atrocity. Writing this editorial early in October, I am aware that subsequent events may have altered some of these concerns. This alone is a small personal indication of the great uncertainty that September 11 has generated.

It would appear that the scientific community escaped relatively unscathed, although, without any doubt, some have lost friends and acquaintances. This is tragic. But there is another—less immediate—fallout from the attack against the World Trade Center and the Pentagon that has an impact on science. Shortly after the attacks, I read an article by Richard Dawkins in *The Guardian* newspaper in which he concluded that religion had created the fanatics that carried out this, as well as other, terrorist actions. The response from the religious correspondent in the same paper was that it was rather the fault of technology in making such a horrendous attack possible. This mutual finger pointing is only a reminder of the continuing and expanding distrust between science and religion. As life scientists, we are well aware that advances in our area are challenging for those who adhere to fixed values and September 11 has not improved the situation. If there is an escalated reaction to terrorist attacks using the latest technologies, then the further demonisation of science will be refuelled as happened after Hiroshima. Those who complain about GMOs, those who would like to see all work on stem cells banned, those who are against globalisation will again find a common

enemy in science and technology. And if the spectre of biological terrorism or warfare becomes a reality, then we biologists will inevitably be criticised for having contributed to our own doom. It will necessarily have consequences for our work and for the way we exchange information, whether we like it or not. Scientists might be asked to review their research to ensure that they are not unwittingly adding to the danger of biological weapons in the hands of terrorists—something that would clearly run against the free dissemination of information that is so important for our work.

The world has held its breath before and waited for a descent into chaos. In the early 1960s, when the Cuban Missile Crisis brought us to the brink of World War III, Leo Szilard, an emigrant biophysicist, flew to Geneva announcing that he was the first refugee from America! At that time, scientists indeed felt that the links between the USA and Europe would undoubtedly be interrupted by a war. The dependence of European molecular biology on its American counterpart was a matter of great concern, and subsequently, European life scientists undertook measures, including the establishment of EMBO, to minimise the possible negative effects if the normal transatlantic communications were interrupted.

In these recent weeks we have again felt the same sense of mutual isolation. Meetings all over the world are being cancelled, and, if not, the absence of invited speakers is commonplace. Scientists who are already overburdened with international commitments are re-examining their priorities and eventually find that staying at home might be a sensible choice right now. If this attitude prevails then real damage will be inflicted on science. We need to meet in order to have our latest results challenged and to learn of the developments in other, competing or contributing, laboratories. Well-established scientists can survive without this external stimulus, and email will convey the most essential messages. But those at an earlier

stage in their careers will suffer from such isolation. The transatlantic shuttle, in both directions, is an enriching component of many careers and the chance to see and hear a leading scientist can be an inspiration and an opportunity to organise a post-doctoral position. If this movement is diminished, we will all become parochial. Cultural differences will be exaggerated and local 'heroes' will become the only role models for the more isolated scientific communities. This is not a good scenario.

But the threat of isolation as a consequence of the terrorist attacks against the USA is only the latest element in a trend that has been going on for a while. Speaking to colleagues from Israel, I learnt that they have been losing contacts that were essential for their community. Again the pattern is the same: scientists have a tendency to cancel international meetings where they might be at risk.

We must remember that we are a global community. This is a pleasurable aspect of our profession, but it also carries a responsibility. We must recognise this and make an extra effort at this time to carry on as before. We need to keep our engagements, send people from our laboratories to international meetings, or to attend them ourselves. We should not allow the recent events to limit our choice of venues for meetings, but should go ahead and plan them as we would have before. If not, we will suffer as a community and this will be a further subtle, but profound victory for the warmongers. See you at the check-in gate!

We would like to congratulate Leland Hartwell, Fred Hutchinson Cancer Research Center in Seattle, and EMBO members Tim Hunt, ICRF in South Mimms, UK and Paul Nurse, ICRF in London, UK, for receiving this year's Nobel Prize in medicine.

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