

Careful science can help to fight terrorism

Richard Mottram and Clive Cookson

Science and technology are usually seen as western strengths in fighting terrorism. Counterterrorism depends on science – but, at the same time, science generates terrorist risks and could compound the problems terrorism creates.

For a start, scientists, engineers and doctors have played a considerable role as terrorists since the mid-20th century. The high status of these professions may be partly responsible, as modern terrorists are drawn disproportionately from the better-educated sections of societies. But something about the certainties enshrined in many scientific disciplines may also chime with the inflexible philosophy of some terrorist groups. These are professions with ways of thinking that, for a very small minority of their members, seem to help point them towards terrorism.

In addition, inadequately regulated scientific activity and the unconstrained dissemination of scientific knowledge may enhance the terrorist threat in its most severe forms, such as bioterrorism. Balancing traditional scientific freedom and openness with regulatory regimes that are effective on a global basis will be both increasingly important and extremely difficult.

The third problem is that the unconstrained use of scientific and technological solutions in countering terrorism – for example, exploiting developments in sensors and in biometrics, information-handling and communications – could themselves damage the free society we are seeking to sustain. However, a modern society would be negligent if it did not use all the resources of science and technology to counter terrorism. As well as contributing to more effective surveillance and intelligencegathering, science can help strengthen infrastructure and mitigate the effects of an attack, particularly if a nuclear or biological weapon were to be used. And we can expect disciplines such as psychology and the social sciences to contribute more to our understanding of what drives terrorism – and therefore how best to prevent it.

The challenge will be to engage a broad range of scientists in the fight against terrorism, without causing an unhealthy imbalance in the scientific enterprise. For instance, the billions of dollars spent by the US government on biodefence over the past few years may have distracted researchers from the fight against infectious diseases. The risk of a flu pandemic – or the emergence of a lethal new disease – is far greater than of a large-scale bioterrorist attack. While there is some scientific crossover between the expertise needed to fight natural and man-made epidemics, it is important to allocate research resources on a balanced view of the risks we face globally.

One lesson to learn from the episode over Iraqi weapons of mass destruction is the importance of ensuring that intelligence analysis and assessment draw on expert scientific advice – and more broadly on the scepticism at the heart of the scientific method. Experts should never again be frozen out of intelligence assessments whose outcome may make the difference between war and peace, as they were in the runup to the Iraq war.

The west's view of terrorism has been dominated by the attacks of September 11

2001. The Madrid, London and Bali bombings ensured that Islamist terrorism remained the focus of attention in Europe and Australasia, as well as the US. But our thinking about the panoply of terrorist risks should not be narrowly focused on one type of threat. Remember that in the 1990s we worried as much about attacks by alienated individuals and extremist cults, following the Oklahoma bombing and the use of chemical and biological weapons by the Aum Shinrikyo cult in Japan.

If an outrage more terrible than any so far – such as the explosion of a nuclear weapon or release of a genetically engineered pathogen – were to take place, there is no reason to assume that al-Qaeda would be responsible. A small, fanatical western or Russian group is an equally likely culprit. It is worth devoting considerable resources to guard against such a “lowprobability high-consequence event” because its impact would be so devastating. But we must keep the risks in proportion. A pandemic of flu or another lethal disease that would kill many millions of people worldwide is much more likely – a “high-probability, high-consequence event”. And, taking a long-term scientific view, climate change is a vastly greater threat to civilisation than terrorism.

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