

Inform and engage

In August this year, the same month that marked the sixtieth anniversary of the atomic bombing of the Japanese cities of Hiroshima and Nagasaki, Joseph Rotblat died. Rotblat was part of the Manhattan project that created the atomic bomb, but became prominent in the years after the war as a champion of the Pugwash organization, which advocates nuclear disarmament.



THE DETONATION OF THE SECOND ATOMIC BOMB, OVER NAGASAKI, JAPAN, ON 9 AUGUST 1945.

Rotblat was not alone among the Manhattan project physicists in subsequently opposing the nuclear weapons he had helped to create. Project leader Robert Oppenheimer, on the other hand, is judged to have been more ambivalent on the moral issues surrounding the project. Oppenheimer still fascinates, not least for his passion for poetry that peppered the historical record with such quotes as “I am become death, the destroyer of worlds”, on the occasion of the first, ‘Trinity’, test of the atomic bomb in July 1945. The latest exploration of Oppenheimer’s story, focusing on events in the run-up to that first detonation of an atomic weapon, takes the form of an opera, *Doctor Atomic*, composed by John Adams — it is reviewed on page 74 of this issue.

The days of the Manhattan project are long gone. In more recent years, the public imagination has been exercised by the murderous threat of nanotechnology’s ‘grey goo’, but that has since given way to debates on the use of human stem cells and cloning techniques, and on climate change. The ethical eye seems no longer focused on physics. Perhaps the modern physicist can rest easy?

Hardly. That no nuclear bomb has been used in conflict since Hiroshima and Nagasaki rests in part with the efforts of Rotblat and others like him, in disseminating information and provoking debate. The Cold War arms race is over, but the proliferation of nuclear weaponry is an ongoing issue, and one that should remain firmly in the public consciousness. There is as yet no scheme to police adequately the distribution of the world’s nuclear material, but the effort continues — highlighted now by the award of this year’s Nobel Peace Prize to Mohamed ElBaradei and the International Atomic Energy Agency.

It is unrealistic and unhelpful to wish that the ‘Pandora’s box’ of atomic arms had never been opened. Science can’t be done on that basis. It might be that it is simply impossible to guess the eventual application of a line of research. In the case of the Manhattan project, of course, there was a very specific goal — to create the atom bomb before Nazi Germany did — and how different the course of history might have been had it failed.

Physicists might no longer be in the spotlight, but it is no less important that the voice of science be heard. In 2004, Nobel Prize-winning physicists and physicist members of the US National Academy of Sciences were among

more than 60 scientists who signed a petition for the restoration of scientific integrity to decision-making in the Bush administration. With the recent calling of novelist Michael Crichton to give expert testimony to the US Senate on climate change, we cannot, unfortunately, feel satisfied that the issue is resolved. But it has been raised, and the campaign continues — championed in particular by the Union of Concerned Scientists, chaired by physicist Kurt Gottfried.

Rotblat was a particularly energetic and committed campaigner. In 1995 he shared the Nobel Peace Prize with the Pugwash organization. He concluded his acceptance speech by echoing the words of the 1955 Russell–Einstein manifesto (which effectively created Pugwash): “Above all, remember your humanity.” Humanity is about creativity, about searching for knowledge. It’s also about responsibility — a responsibility that is best exercised in striving to inform the policy makers and engage with public debate.