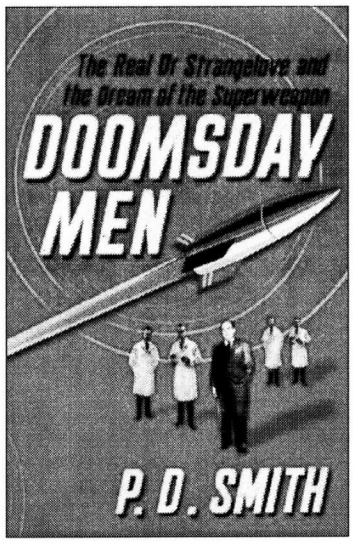
BOOK: DOOMSDAY MEN: THE REAL DR STRANGELOVE AND THE DREAM OF THE SUPERWEAPON

Talk of megadeath grips and disturbs

Doomsday Men relates the grim story of increasing barbarism during the 20th century, associated with scientific advancement and the pursuit of superweapons. Its author, an honorary research fellow at UCL, has been researching and writing about the relationship between science and literature for some time. Smith demonstrates in detail that weapons development springs from a deep well of culture, as well as politics. Science fiction and fact ran consistently close throughout the 20th century and cross-fertilised each other.



Goethe's tale *Faust* suggested that knowledge is worthless—even dangerous—without self-knowledge. At the end of the 19th century there was enormous public support for science because it offered hope of material progress for mankind. Smith argues that, like Faust, scientists gained terrible knowledge during the 20th century, at great cost: designing weapons of mass destruction, they sacrificed much of the idealism about science in the service of humanity.

Many others have written about the horrors of the First World War, but Smith focuses on the scientists involved. He graphically describes Fritz Haber's obsessional research into battlefield uses of lethal gases, later fictionalized by André Malraux in his novel *The Walnut Trees of Altenburg* and by Tony Harrison in his play *Square Rounds*. Many thousands of soldiers and civilians died, painfully but fairly quickly, while some survived to suffer the rest of their days. It is little wonder that Haber's wife Clara became distressed enough to commit suicide. Otto Hahn too decided to work on chemical warfare, supported by Lise Meitner who told him: 'If you don't do it, someone else will'; false reasoning since repeated many times.

Smith reports: 'By the end of the war a total of 75 000 people—scientists and service personnel—were engaged in chemical weapons development.' He quotes a journalist for the *Boston Herald*, writing in 1916, to indicate public reaction to the misuse of science: 'Today we stand horror-stricken before the evidence of inhumanities only made possible through scientific advancement...Chemistry, you stand indicted and shamed before the Bar of History! You have prostituted your genius to fell and ogreish devices...You have turned killer and run with the wolf pack.'

At the turn of the 20th century, the dream of scientific mass murder found expression in novels and stories about biological weapons by writers including Simon Newcomb, Jack London and M P Shiel. In the 1930s reality imitated fiction when Japan set up Unit 731, a research and production complex covering more than two square miles. Here the fiercely nationalistic doctor Shiro Ishii developed and tested biological and chemical agents on thousands of Koreans.

The firebombing of cities like Dresden and Tokyo late in the Second World War inspired Kurt Vonnegut's novel *Slaughterhouse Five*. As prisoners of war, Vonnegut and other GIs had to collect corpses after the Dresden raid. What they found in basements resembled 'a streetcar full of people who'd simultaneously had heart failure. Just people sitting there in their chairs, all dead. A firestorm is an amazing thing. It doesn't occur in nature. It's fed by tornadoes that occur in the midst of it and there isn't a damn thing to breathe. We had no idea that our side was capable of such indiscriminate destruction.' It was, Vonnegut said, 'a total calamity of civilization.' Since 1980, the use of incendiary bombing on civilian targets has been prohibited under international law.

Science fiction writers had imagined atomic bombs long before scientists thought them possible. At the start of the 20th century a succession of stories, from H G Wells, Edward

Bulwer-Lytton, Frederick Soddy and others, speculated about both peaceful and military uses of 'atomic energy' released from ordinary matter.

It was only in the run-up to the Second World War that physicists began to understand the process of nuclear fission. Motivated by fear that the Germans might produce a nuclear bomb, an international team of leading scientists, mathematicians and engineers was secretly brought together, during the war, at Los Alamos and other American sites. The scale of the Manhattan Project dwarfed all previous scientific collaborations with the military. Within a few years it had produced two successful bomb designs and Hiroshima and Nagasaki were destroyed.

According to Joseph Rotblat, who worked at Los Alamos during the war, the vast majority of scientists there were not bothered by moral scruples: 'they were quite content to leave it to others to decide how their work would be used.' Immediately after the war, scientists split into two camps: the majority who opposed further development of nuclear weapons and a minority who became pawns in the Cold War. Prominent among the latter were Edward Teller and Harold Urey, who went on to invent America's H-bomb.

In his autobiography [1], Teller reflects on the petition that his friend Leó Szilárd asked him to circulate among atomic scientists at Los Alamos in July 1945, recording for the president their moral objection to the use of atom bombs: 'Today, half a century after these events, I have reached three conclusions about that important matter. First, Szilárd was right. As scientists who had worked on producing the bomb, we bore a special responsibility. Second, Oppenheimer was right. We did not know enough about the political situation to have a valid opinion. Third, what we should have done but failed to do was to work out the technical changes required for demonstrating the bomb over Tokyo and submit that information to President Truman.'

When he decided not to circulate the petition, what Teller actually told Szilárd was: 'I have no hope to clear my conscience. The things we are working on are so terrible that no amount of protesting or fiddling with politics will save our souls.' Was this simply prevarication?

Before going on to tell the interlinked stories of science, culture and politics chronologically, Smith opens his book with the story of an NBC radio broadcast of its popular programme *University of Chicago Round Table*. Gathered around the table on 26 February 1950 were scientists Szilárd, Harrison Brown, Hans Bethe and Frederick Seitz discussing the possibility of an H-bomb. Bethe estimated that the bomb blast would be 1000 times as powerful as that of an A-bomb, enough to destroy the world's biggest cities, such as New York. Szilárd's fertile imagination took the awful prediction further; he described how to build an H-bomb that would produce radioactive fallout sufficient to kill all life on Earth. This candid talk among scientists shocked and frightened people around the world. For the first time, but not for the last, Americans at home felt vulnerable to direct and devastating attack. Thereafter the possibility of a nuclear holocaust became hard to ignore.

All weapons of mass destruction invented in the 20th century were, Smith shows, 'inspired by a desperate dream, one that was shared by a whole culture'. Military strategy based on deterrence through strength was based on a crazy logic, typified by this Harold Urey statement to *Time* magazine: 'I value my liberties more than I do my life.' It became possible to imagine a country that, faced with conventional military defeat, might resort to using a doomsday weapon—one that would destroy all life on Earth.

A fascinating chapter near the end of Smith's book discusses influences on Kubrick's 1964 film *Dr Strangelove, or How I Learned to Stop Worrying and Love the Bomb*. In a brilliant comic portrait, Peter Sellers personifies a sinister alliance of science and power politics. Four people are detectable in the complex Strangelove character: Wernher von Braun, the German rocket scientist; Herman Kahn, the Cold War military strategist; Edward Teller; and mathematician John von Neumann. 'As Stanley Kubrick later realized, a dark sense of humour was essential to those who had to live with the bomb.'

Considering the role of scientists associated with the bomb, Smith quotes Eugene Wigner: 'Writing in the *New York Times*, Wigner admitted that the scientists' biggest "failure of insight" was not in physics but in understanding politics and human

nature. Like fictional saviour scientists, they had naïvely expected "atomic weaponry to do away with international conflict". Many scientists were convinced that the terrible reality of atomic superweapons would force nations to resolve their disputes and work for world peace. As Wigner put it: "Any other outcome seemed utterly irrational." Today such faith in humanity's rationality seems naïve.'

Well before the First World War, American popular fiction gave birth to 'a cult of made-in-America superweapons and ecstatic visions of America defeating evil empires, waging wars to end all wars, and making the world eternally safe for all democracy.' Already in the 21st century we've seen the destructive power of war in Iraq, Afghanistan and Lebanon. Terrorist attacks, some using sophisticated weapons, continue to happen all over the world.

Doomsday Men is a gripping but disturbing read, from which my review could only select extracts. What it highlights for me is the unavoidable social responsibility that scientists carry for their work and the constant danger that scientists may be reduced to being little more than 'tools of war.'

Smith concludes with a warning: 'Weapons of mass destruction have not gone away. Today, cold war tensions may have faded from the public mind and the media may be preoccupied with global warming, but the weapons are still out there, and the doomsday men are still at work developing new ones.'

Reference

[1] Edward Teller (with Judith Shoolery) 2001 *Memoir: a Twentieth Century Journey in Science and Politics* (Oxford: The Perseus Press)

Peter Campbell

WE RECOMMEND

Doomsday Men: the Real Dr Strangelove and the Dream of the Superweapon

P D Smith

Rating: ★★★★★ Excellent

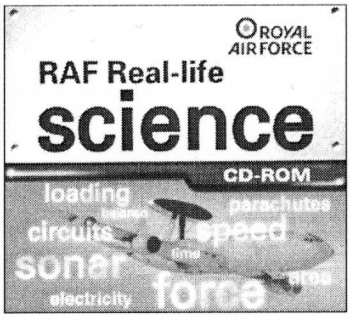
Price: £20.00

Details: Published 2007 by Allen Lane, 553 pp, including extensive notes and index
ISBN 978 0 7139 9815 3 (hardback)

CD: RAF REAL-LIFE SCIENCE

Physics activities get linked to real life

This is a CD from the UK's Royal Air Force. It's free, seems to cover just physics, as far as I can make out, and it features quite a lot of careers material aimed at both girls and boys. There are four missions on the CD, linked to four RAF personnel who lead you through the tasks as well as discussing their roles.



The missions cover circuits, air resistance and speed, moments, and waves. There's a little bit of scene setting where one of the personnel tells you about the mission. Then you perform a fairly simple task. There's a fact file that you can open if you need help. These are short and to the point. After succeeding with the basic mission you can go on to a more advanced one.

There are a number of worksheets included on the CD, plus further instructions for doing the practical activities that complement the missions. There's also a set of certificates, which is quite a nice touch, for those who have successfully completed part of a mission. As well as the ones on the CD, there are more missions in a similar vein online at http://target.raf.mod.uk/Students/Science/Default.aspx.

The usefulness of this CD is a limiting factor. You could lift some of the activities out and use them in front of your class, but they don't last very long and