

# ACKNOWLEDGEMENTS

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As always, I must acknowledge a debt to the staff of *New Scientist* magazine, who together constitute a fearsome hive mind. And speaking of hive minds, I gained numerous sources and insights through the people I follow on Twitter. They are too numerous for a complete rundown, but a few come to mind and are worth following if you want to continue the explorations begun in these pages. It seems somehow wrong to reduce these hi-tech monikers to old-fashioned patterns of ink on paper, but I am particularly grateful for unwitting help from @AliceBell, @AtheneDonald, @cgseife, @KieronFlanagan, @sciencebase, @sciencecampaign, @sciencegoddess, @tomstandage, @WilliamCB, @xmalik and @ZoeCorbyn.

My immediate family have put up with a catastrophically distracted husband and father over the past year or so; it is only right that I thank them for their patience and support. But I can't promise that it won't happen again.

Michael Brooks  
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## NOTES AND SOURCES

### PROLOGUE

- p. 3 'the Merlins of the Cold War': M. Schrage, 'Physicists' Reign Is Likely to End', *Los Angeles Times*, 3 October 1991.
- p. 3 What followed, according to historian Steven Shapin: S. Shapin, *Never Pure: Historical Studies of Science as if It Was Produced by People with Bodies, Situated in Time, Space, Culture, and Society, and Struggling for Credibility and Authority* (Johns Hopkins University Press, 2010). Shapin points to Robert Merton, who has analysed this further. 'A passion for knowledge, idle curiosity, an altruistic concern with the benefit to humanity, and a host of other special motives have been attributed to the scientist,' he says in *The Sociology of Science: Theoretical and Empirical Investigations* (University of Chicago Press, 1973). Merton argues that these are not the natural values of the individual scientists, but of the institutions in which they worked – which demanded the same stance from their employees.
- p. 3 'The Stone Age may return on the gleaming wings of Science,' warned Winston Churchill: Speech at Fulton, Missouri, 5 March 1946, published in *Maxims and Reflections* (Eyre & Spottiswoode, 1947), p. 164.
- p. 3 Another of Churchill's pronouncements: Address to the Royal College of Surgeons, 10 July 1951, collected in *Stemming the Tide:*

- Speeches 1951 and 1952* (Cassell, 1953), p. 91. It is interesting that Churchill's pre-war pronouncements about science come across as much more positive. 'The scientific utilisation, by liquefaction, pulverisation and other processes, of our vast and magnificent deposits of coal, constitutes a national object of prime importance,' he said in a Parliamentary debate in April 1928. Talking about Fritz Haber's invention of an ammonia synthesis method in 1918 (the invention was crucial for the production of explosives and fertilisers), Churchill said, 'It is a remarkable fact, and shows on what obscure and accidental incidents the fortunes of possibly the whole world may turn in these days of scientific discovery.'
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- p. 4 'very much the image of science that the high-ups in the Royal Society wanted to put across': T. Boon speaking in *Mad and Bad: 60 Years of Science on TV*, Pioneer Productions for BBC, first broadcast 15 December 2010. Timothy Boon's book *Films of Fact: A History of Science in Documentary Films and Television* (Wallflower, 2007) is a treasure trove of material on British science's relationship with the BBC in the post-war period. Boon cites various memos and communications where science establishment figures try to influence broadcast subjects away from the 'perils and dilemmas' angle that so obviously interested the journalists of the time: 'Can we sometimes forget war and atomic weapons, industrial advance or productivity ... and say something more of the history and growth of science, of the great solution wrought by the introduction of the experimental method ... ?' Or, 'The evil wrought by science springs, not from any intrinsic evil in science itself, but from its misuse by men who do not really understand what science is ...'
- p. 4 'You scientists, you kill half the world, and the other half can't live without you': This is from Episode 6 of *A for Andromeda*, which was written by Fred Hoyle and John Elliott and first broadcast in 1962. Hoyle was, in fact, a great scientist as well as a great science fiction writer, but he was not one to toe the party line. That may account for his being passed over for the 1983 Nobel Prize. As one obituarist put it, 'why Hoyle was not included in this award remains a mystery hidden in the confidential documents of the Royal Swedish Academy' (obituary available at <http://www.guardian.co.uk/news/2001/aug/23/guardianobituaries.spaceexploration>).
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## CHAPTER 1

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