An unreliable history

Simon Mitton

Stephen Hawking: A Life in Science. By Michael White and John Gribbin. *Viking: 1992. Pp. 304. £16.99. To be published in June in the United States by New American Library at $23.*

STEPHEN Hawking has been poorly served by this biography, which mixes good popular science with flawed history. Hawking's achievements in physics are clearly remarkable, his battle against a crippling disease is inspirational, and even now the success of *A Brief History of Time* is inexplicable. This is an intensely interesting story; sadly, the target is missed.

Hawking's research has principally dealt with the very early Universe, the physics of black holes and the search for a unified theory of everything. His intriguing discoveries include such counter-intuitive concepts as the notion that 'mini' black holes can evaporate. In 1974, this breakthrough, now known as the Hawking effect, showed that quantum physics and general relativity could give new information on the workings of the Universe. As White and Gribbin explain, the work on exploding black holes then led Hawking to concentrate on the singularity that led to the birth of our Universe. By the mid-1970s, he was firmly established as one of the leading physicists of his generation.

Since then, Hawking and his school have searched for a unified theory in which all of physics would be described by a single set of equations. The 'end of physics' is sought in the first glimmer of our Universe, a scrunched-up opportunity space with numerous hidden dimensions. This is serious physics, which could have a profound influence on gravitational physics and cosmology.

Many of those who bought *A Brief History of Time* have not read it because it is difficult. White and Gribbin succeed in giving a clearer description of the physical Universe that interests Hawking. The chapters devoted to modern physics are done well and they capture the excitement of scientific investigation of the most fundamental kind. With the biography entirely stripped out, the remaining material would make a book of the sort that James Jeans was writing in the 1930s or Paul Davies today: a good story to get through in one evening, with plenty to talk about the next day.

The problems arise with the biographical element and the supporting structure. It is all too clear that the authors were working with inadequate and poorly researched material. The quotations attributed to Hawking, his family and most of his collaborators are largely taken from existing sources, such as the television programme *Master of the Universe* and interviews given to launch *A Brief History of Time*. New material is based on a few interviews with people (including myself) mainly outside the penumbra. Some of this is little more than tittle-tattle, such as small incidents on train journeys from London to Cambridge, Hawking's undergraduate pranks, subjective statements about Hawking, and his tangle with a college bursar over the charge for a room.

Hawking — Making hard physics a required purchase.

More seriously, the book contains many errors. We are told that Maxwell wrote his equations "in order to explain radio waves which had recently been discovered". In fact, Maxwell's equations were published in 1864, and in 1879 Helmholtz suggested to Hertz the experiments that led to the detection of radio waves in 1888. In the biography of a man who, like Maxwell, is searching for unification of the forces, this error is unfortunate. And what are we to make of the statements that the Hawking family are lifelong members of the Labour party, when a page is devoted to describing his painting "VOTE LIBERAL" graffiti?

The authors resort to the literary device of fiction based on fact because of the absence of new evidence about Hawking. In a distortion of the Oxford of the 1960s, clichés abound: dukes' daughters in ball gowns, lazy days punting, "hung-over young men and occasional women" at breakfast. Scholarships were not offered by the university, and the financial element of college awards was nominal. Instead of searching out the examination Hawking sat, the authors invent a "typical question".

Cambridge gets the same treatment. It is very unlikely that only the final chapter of Hawking's thesis saved him from failure to be awarded a PhD. It is false to say that the role of a college fellow "has changed little since Sir Isaac Newton's time" and that the duties of fellows are minimal apart from research. I do not believe that Hawking regards physics as a "perfect displacement activity", and he is not head of his department.

The time axis of this book is punctuated by news flashes that demand knowledge of British history: we are told that as Hawking thinks, in 1982, peace protesters are on Greenham Common, just in case we cannot locate the event in spacetime. Some of this too is sheer invention. This book describes a walk I never made, during which a car I never saw pulled up, and I never ate tea and biscuits for lunch.

Hawking wrote a book that changed popular science publishing. As a result, booksellers are much more confident about displaying science books. To be on the bestseller list for three years is a stupendous achievement. A chance is missed here to explain why the book has sold so well. If I had acquired the rights I would have been pleased with sales at one per cent of those achieved so far. What is it that pushes a product into the 'must have' category? How can hard physics be a required purchase? For answers to these and other questions we must await a more reliable biography. □

Simon Mitton is a science publisher at Cambridge University Press and a fellow of St Edmund's College, University of Cambridge, Cambridge CB3 0BN, UK.