he seems unaware of the vast amount of literature that has argued for a much more fluid division between these two groups.

The most significant contribution of the book is its examination of popularizers of race science. Lorimer argues that far too much attention in the secondary literature has focused on the role of famous historical actors such as the anatomist Robert Knox (1791–1862) and the scientific naturalist Thomas Huxley (1825–1895) in shaping the research programme of British race science. However, popular writers such as John G. Wood (1827–1889) and Edward Clodd (1840–1930) had much larger readerships, and therefore likely had a larger influence on Victorians' notions of race. Although this is an important historiographical point, it would have been helpful to see more examples of these popularizers' writings. Overviews of various figures are provided, but there are few illustrative examples of their ideas from the primary texts. Nevertheless, despite these criticisms, Lorimer raises some interesting issues regarding the conception of race science and race relations in Victorian Britain, and his book is a welcome contribution to the secondary literature.

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Michel Janssen and Christoph Lehner (eds.), **The Cambridge Companion to Einstein**. New York: Cambridge University Press, 2014. Pp. xvi + 562. ISBN 978-0-521-82834-5. £65.00 (hardback).
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This book brings together fourteen essays by philosophers of science and historians on various aspects of the writings of Albert Einstein. The first ten essays deal with Einstein's contributions to physics, and with various philosophical implications of them. The next three address some of Einstein's more directly philosophical writings and the impact of his work on the twentieth-century philosophy of science. The final essay is on Einstein's political writings. In the introduction, Michel Janssen and Christoph Lehner give a brief overview of Einstein's life and career to provide some context for this collection of essays, and highlight some themes addressed more fully in the individual contributions.

In the first chapter Jürgen Renn and Robert Rynasiewicz discuss Einstein's 'Copernican revolution'. They argue that Copernicus laid the basis for a complete overhaul of the traditional astronomical world view, and that Einstein's achievements during 1905 can be described in terms of such revolutionary Copernican processes. Next, John D. Norton, in a chapter entitled 'Einstein's special theory of relativity and the problems in the electrodynamics of moving bodies that led him to it', points out that modern readers turning to Einstein's famous 1905 paper on special relativity may not find what they expect. The title, 'On the electrodynamics of moving bodies', gave no inkling that it would develop an account of space and time that would topple Newton's system. It contains Einstein's analysis of simultaneity, probably the most celebrated conceptual analysis of the century. Norton points out that this approach leaves us with the curious idea that special relativity arrived because Einstein took the trouble to think hard enough about what it means to be simultaneous. It explains how Einstein extracted the theory from electrodynamics, indicating the subsidiary roles played by both experiments and Einstein's conceptual analysis of simultaneity.

A.J. Kox writes about 'Einstein on statistical physics'. He points out that Einstein's work in this area was guided by a strong conviction that atoms really exist, and by the insight that the study of fluctuations of physical quantities can lead to valuable new knowledge. Michel Janssen's chapter is entitled 'No success like failure …' and deals with Einstein's quest for general relativity, from 1907 to 1920. He indicates that Einstein was ready to extend the principle to arbitrary motion. He felt strongly that there can only be relative motion, as is evidenced by his opening remarks in a series of lectures in Princeton in 1921, published in heavily revised form the following year. Janssen quotes Einstein's explanation that we can only conceive of motion as relative motion; as far as purely geometrical acceleration is concerned, it does not matter from the point of view of which body we talk about it. Christopher Smeenk, in 'Einstein's role in the creation of relativistic cosmology', highlights

Einstein's 1917 paper 'Cosmological considerations in the general theory of relativity', rightly regarded as the first step in modern theoretical cosmology. Perhaps the most striking novelty introduced by Einstein was the very idea of a cosmological model, an exact solution to his new gravitational-field equations that gives a global description of the universe in its entirety. Einstein's foray into cosmology was a final attempt to guarantee that a version of 'Mach's principle' holds.

In the following chapter, 'Einstein, gravitational waves, and the theoretician's regress', Daniel J. Kennefick indicates that perhaps Einstein thought that general relativity was a 'difficult' theory, because all of his early calculations of the theory's predictions involved approximate, rather than exact, solutions. This sort of approximation technique presents a particular problem in physics, by forcing us to ask how we know that the solution to a set of approximate equations is actually numerically close to a genuine solution of the full theory. Kennefick examines how Einstein struggled with this problem, as well as pointing out certain ways in which his solutions gave rise to further controversy and debate in the decades after his death. Tilman Sauer's chapter is entitled 'Einstein's unified field theory program'. His contribution is an attempt to characterize Einstein's work on a unified field theory from four perspectives, by looking at its conceptual, representational, biographical and philosophical dimensions. Christoph Lehner tackles 'Einstein's realism and his critique of quantum mechanics'. He explains that Einstein's reservations were increasingly seen as the stubborn metaphysical prejudice of an old man who could not adapt any more to the demands of modern physics.

Don Howard's chapter addresses 'Einstein and the development of twentieth-century philosophy of science'. He notes that the special and general theories of relativity, through their challenge to both scientific and philosophical orthodoxy, made vivid the need for a new kind of empiricism whereby one could defend the empirical integrity of the theory of relativity against challenges, which came mainly from the defenders of Kant. Philipp Frank – a dissenter from central points of right-wing Vienna circle doctrine – deserves particular mention for his more accurate reading of Einstein's position on such issues as the place of convention in scientific theory. Thomas Ryckman searches for the relationship between belief and science in his chapter, 'A believing rationalist'. As he notes, Einstein's philosophical method started on the historic ground of positivism, heavily under the influence of Mach. The end point of Einstein's philosophical odyssey lay in his conversion to a 'rationalistic realism'.

Michael Friedman's chapter is entitled 'Space, time, and geometry'. He argues that Einstein's theories of relativity – especially the general theory – exerted a profound influence on twentieth-century philosophy of geometry, and that this story began (as do so many episodes in twentieth-century thought) with the refutation of Kant. Robert Schulmann closes the book with his chapter, 'Einstein's politics'. He confirms that, as a political figure, Einstein is very difficult to assess. He never engaged systematically in the activities of any political party and remained throughout his life above the political fray. The idiosyncratic cast of his political thinking further complicates the issue.

Overall, the book is an important work of reference, and discusses Einstein as seen through multiple lenses: scientific, philosophical and historical. It is indispensable for anyone who wants to discover more about Einstein.

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Milena Wazeck, **Einstein's Opponents: The Public Controversy about the Theory of Relativity in the 1920s**. Translated by Geoffrey S. Koby. Cambridge: Cambridge University Press, 2014. ISBN 978-1-107-01744-3. £65.00/$99.00 (hardback).
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Who is a real, genuine scientist? For reasons that have been studied in depth, Albert Einstein became and still partly remains the icon of science itself. Opposing Einstein is, to a large extent, the same as opposing science, and rejecting the theory of relativity has become synonymous