exception. Rees paints a vivid picture of fieldwork through detailed accounts of the publications and conferences around which the infanticide controversy pivots. With concise and lively writing, Rees guides the reader through complex scientific arguments by providing detail while also highlighting the key points that differentiate them from the opposition. For example, Rees provides an in-depth analysis of key articles, such as Sarah Hrdy’s 1974 paper that strongly argued that infanticide was an adaptive strategy, and the critical responses these publications provoked. Rees also focuses on specific conferences, such as the 1982 Wenner-Gren Conference held at Cornell University, which brought scientists from both sides of the controversy together for in-person debates that were later captured in edited volumes.

Interviews with a number of primatologists and anthropologists enrich Rees’s comprehensive knowledge of the published literature. Several of the individuals interviewed played central roles in the infanticide debate, including Sarah Hrdy, Anne Pusey and Bob Sussman. Quotes from these interviews are interwoven within each of the chapters dedicated to the infanticide controversy and particularly in Chapter 5. In addition to adding further complexity to Rees’s analysis, these interviews reflect the positive relationships she has developed with the primatological community. Indeed, Hrdy shares her praise for *The Infanticide Controversy* on its back cover.

Rees’s application of sociological methods in combination with approaches and scholarship from the history and philosophy of science ensures a robust analysis of a significant scientific controversy that intersects with several questions within the history of science. This characteristic of *The Infanticide Controversy* ensures the book will have an impact far beyond the small group of scholars who, like myself, specialize in the history of primatology and animal behaviour studies. Seamlessly, Rees integrates a detailed analysis of debates within primatology regarding the cause of infanticide with broader questions concerning observation, the connection between practice and theory, and the relationship between scientific disciplines and the humanities. The fact that this is accomplished by combining historical, philosophical and sociological approaches makes this book an ideal choice for the HPS classroom as well as the HPS scholar.

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GRAEME GOODAY and JAMES SUMNER (eds.), *By Whose Standards? Standardization, Stability and Uniformity in the History of Information and Electrical Technologies*. History of Technology, Volume 28. Series editor Ian Inkster. London: Continuum, 2008. Pp. xiv + 171. ISBN 978-0-8264-3875-1. £90.00 (hardback).

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This volume of the History of Technology series focuses on standardization, a subject of increasing interest across a range of disciplines. Editors Graeme Gooday and James Sumner have selected a diverse set of articles on standardization in the late nineteenth and twentieth centuries, centreing primarily on electrical and information technologies. The chapters dealing with information technologies demonstrate readily recognizable processes of standardization. Some of the chapters on earlier electrical technologies open out the realm of standardization much more broadly, often stretching our conceptions of the process.

The first essay in the book, addressing the most recent case, is Laura DeNardis’s study of ‘IPv6: standards controversies around the next-generation Internet’. In the early 1990s Internet overseers saw that existing IP addresses would run out without a new addressing system, so they initiated the search for one. DeNardis explores the contest that subsequently emerged between the approach developed by ISO (the International Organization for Standardization), and what became Internet Protocol version 6, a battle waged not over technical issues but over
who would control the standard. The existing US-dominated standards body for the Internet, the IETF (Internet Engineering Task Force) was not willing to cede control to the ISO’s international body, which, in spite of its longer history, had come more recently to the Internet standards arena.

In ‘Standards and compatibility: the rise of the PC computing platform’, James Sumner argues that the story around the PC platform is more complex and subtle than a battle between competing standards:

The PC was not (and is not) a single standard, but a broad constellation of specifications, varying in exactitude, across the levels of hardware, operating software, applications software and user culture. At all of these levels, possibilities exist ranging from conformity, through compatibility and interoperability, to outright rejection (p. 102).

The mechanism of standardization is also different here, with the de facto standard emerging within the market rather than via a committee system. Its sponsorship also shifted from IBM to Microsoft over time. In this case, homogeneity and heterogeneity have coexisted side by side.

Frank Veraart’s ‘Basicode: co-producing a microcomputer Esperanto’ examines yet another approach to standardizing: developing a universal translator among the various dialects of Basic rather than specifying a single standard programming language. The need for this ‘Esperanto’ emerged from the desire of hobbyists in the Netherlands using different hardware and programming languages to exchange software programs by broadcasting them over Dutch radio in the early 1980s. Veraart argues that Basicode was not a failure as it has typically been portrayed. Instead, ‘the technology underwent a distinctive full-circle trajectory from beginnings among enthusiasts, through co-option for mass-audience use by broadcasting professionals, to a final reformulation that firmly restated the original enthusiast ethic’ (p. 131).

In his contribution, Andrew Russell addresses ‘Standardization across the boundaries of the Bell system, 1920–38’. As a monopoly, AT&T could readily standardize internally. The Bell system also, however, became involved in cross-boundary standardizing to shape things important to their system but not fully contained within it, working through various industrial standardizing committees including an ad hoc joint-standards committee formed among industries with a stake in inductive interference (telephone, railway and power transmission); and a standardizing committee focused on washers, which could be used as slugs for pay telephones. Generalizing beyond these specific cases, Russell highlights the work of standardizing committees as part of ‘the cooperative social network that sustained the American style of competitive managerial capitalism’ (p. 49).

The other two articles on electrical standards move into the realm of what the editors refer to as ‘soft’ standards. Chris Otter examines ‘Perception, standardization and closure: the case of artificial illumination’. This article considers not the competition among different specifications or standards for the same product, but that among different technical approaches to gain the same end – illumination. In particular, he focuses on user visual perceptions of what type of light (e.g. the blue light of electricity or the yellow light of gas lighting) is desirable for different uses, arguing that the eventual triumph of electrical light for most uses in the developed world was by no means a foregone conclusion, nor is it universal even now.

In ‘Morality, locality and “standardization” in the world of British consulting electrical engineers, 1880–1914’, Stathis Arapostathis examines the role and identity of consulting electrical engineers in building municipal electrical systems. Here, the profession of consulting electrical engineers was standardized, rather than the components and processes of electrification itself. Manufacturers would have preferred the latter, but that would have limited the scope of consulting electrical engineers, who sought to protect their role and status. Moreover, from municipalities’ point of view, consulting engineers with broad professional discretion could take local, financial, moral, and national issues into account.
The final paper of the volume is an outlier in many respects. Karen Sayer’s ‘Battery birds, “stimulighting” and “twilighting”: the ecology of standardized poultry technology’, focuses on chickens and eggs in mid-twentieth-century Britain, with electrical lighting coming in only tangentially, as a mechanism for standardizing egg production. Here eggs were the target of standardization. While egg marketing rhetoric and images increasingly emphasized ‘natural’ farming methods, the demand for fresh eggs of standard sizes all year round led to standardizing the way laying chickens were farmed. Although it detracts from the unity of the collection around information technology and electrical technology, this piece provides a fascinating glimpse of what happens when living organisms are standardized.

While this book does not deal with metrological standardization, more central to history of science, it adds value by challenging how we understand standardization in the realm of technology and industry. It should be read by all those interested in processes of standardization.

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JENNIFER KARNS ALEXANDER, The Mantra of Efficiency: From Waterwheel to Social Control. Baltimore: The Johns Hopkins University Press, 2008. Pp. xvii + 233. ISBN 978-0-8018-8693-5. £33.50 (hardback).
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Should we celebrate or regret the drive to efficiency that has motivated so many human endeavours? That is the question that animates Jennifer Karns Alexander’s ambitious book. Juxtaposing cases drawn from across two hundred years, two continents and four countries, Alexander does not provide a definite answer to this bedevilling question at the heart of technological modernity. Instead, she explores how efficiency has always been double-faced, both a boon and a threat to freedom. Similarly, she shows how the concept is curiously doubled internally, with theories of efficiency variously emphasizing the importance of balance and stasis as well as the potential for growth and dynamism. Armed with this pair of contradictory notions, Alexander compiles an album of alternative ‘greatest hits’ drawn from the industrial and post-industrial history of efficiency in Europe and the United States, which augments, rather than repeats, the arguments made in substantial previous studies of work, machines and modernity such as Anson Rabinbach’s The Human Motor (New York, 1990) and Sigfried Giedion’s Mechanization Takes Command (New York, 1948).

The six historical case studies range across disciplines and national boundaries, with two taken from the UK, two from the US, and one each from France and Germany. Alexander starts with a detailed examination of a set of waterwheel experiments carried out by John Smeaton in England in the 1750s and at the Franklin Institute in Philadelphia in 1830, arguing that these different approaches to measuring the waterwheels’ action demonstrate the way in which efficiency could be an abstract, philosophical topic or a highly practical one. The second chapter examines the thought of Gérard-Joseph Christian, director of the Conservatoire des arts et métiers in Paris in the early nineteenth century. Christian believed that efficient machines could effect social as well as technological transformations, freeing people from servitude to machines and enabling them to do other, more interesting work. The third chapter compares the contrasting views of Charles Darwin and the economist Alfred Marshall. While Darwin stated that natural selection was an efficient process, but not one that could be deliberately managed or achieved, Marshall argued that business managers could deliberately organize their enterprises to maximize efficiency. In a