

The exile of the Maroons, Chopra writes, “occurs within the framework of slavery and emancipation, on the one hand, and British expansionism and consolidation, on the other” (193). She shows very clearly how the ambitions of colonial officials eager to end the slave trade, or to advance the cause of antislavery more generally, overlapped with the desire to consolidate British power over imperial frontiers like Nova Scotia and Sierra Leone. This book will be read with great interest by historians of slavery and emancipation, historians of the Atlantic world, and by a wider public interested in the political and military ferment of the age of Atlantic revolutions.

Padraic X. Scanlan
London School of Economics and Political Science
p.x.scanlan@lse.ac.uk

GILLIAN COOKSON. *The Age of Machinery: Engineering the Industrial Revolution, 1770–1850. People, Markets, Goods: Economics and Societies in History*. Woodbridge: Boydell Press, 2018. Pp. 288. \$25.95 (paper).
 doi: 10.1017/jbr.2018.126

The clue is in the title. This is an excellent book that explores the place of textile machines—primarily woolen and cotton—and the “engineers” who built them during the period associated with the British Industrial Revolution. The result is one of the best expositions, in recent times, of the nitty gritty detail and context that guided this development. Gillian Cookson does not shy from the mundane that predominantly informed such technological development. Indeed, rather than coining haughty terms to describe British ingenuity she emphasizes the local context, the series of micro-innovations, the small workshops and artisanal centrality to the expansion of machinery. Unlike recent historians, she underlines the importance of early, pre-factory textile engineering. This is primarily, although not exclusively, a history of the now-forgotten north Englishmen who lie at the heart of engineering the Industrial Revolution. The development of these machines was slower than the textile industry as it continued to draw from traditional methods to find new ways to make and do things. Yes, you get the history of Richard Arkwright’s water-powered factory, James Hargreaves’s spinning jenny, and Samuel Crompton’s mule, but the real emphasis is upon the vital role of other, less remembered, men. Unfortunately, they were covered in grease and lived rough lives and just are not proper guests at the table of World-Historical Change.

Cookson is particularly on guard against anachronisms and building the future into the past. Here she is particularly critical of economic history texts that, she concludes, tell us very little of how technology really evolved. Instead, it was a wide community-based endeavor characterized by casual work and subcontracting. Textile machines did not suddenly appear and radically change production. Instead they fed into existing systems and integrated with traditional social labor. Each process in the production, say, of yarn invited different solutions. For example, the development of slubbing—preparing the fiber for spinning—was, arguably, more important than was the actual mechanization of spinning the fiber. The process worked differently for cotton, wool, and flax. This is a complicated history that took place over a long period of time and was driven by specific locations and distinct community contexts. To tell this history, Cookson has scoured every fragment of available sources to gain a glimpse into this crucial, but all-too-often forgotten, world. It was, as she shows, these relatively uneducated gritty men of limited capital who spearheaded engineering achievements during this period. This was a revolution driven not by an “Industrial Enlightenment” and the new sciences,

but by traditional skills and practices. The notion of an Industrial Enlightenment is not only ahistorical, but it dismisses the very people who birthed the machinery of industrialization.

Location was everything. The wet north provided ideal water power and, later, easily accessible coal. The introduction of the factory system was far from overnight and took an array of different forms. Innovation came in the planning as much as in the technology of these manufacturing spaces. The large increase in yarn supply put immense pressure on the putting-out system that, in turn, led to organizational innovation. Within this context, as Cookson shows, machinery was created not to overcome cheap wages but to improve quality and quantity. While the creation of mechanized spinning was much faster than the development of power looms—hence the number of handlooms increased between 1820 and 1834—there was no specialized textile engineering trade prior to 1800. Cookson describes in detail the role of different materials and the problematic transportation of machines and parts. This last issue explains why so many new machine makers and, indeed, textile factories grew up along the canal-carved landscape of the north Midlands, Lancashire, and Yorkshire. The makers of these machines represented a whole gamut of skilled trades. If you want to know what role and status carpenters, whitesmiths, blacksmiths, plain smiths, millwrights, and clockmakers held, this is the book for you. It seems, for example, that clockmakers were of limited significance and were primarily used, originally by Arkwright, to make his single set of iron or brass gears via their gear cutters. However, these skills mutated into machine making in general and were carried out by men who began to specialize in such work, while many mechanically skilled men involved in making textile machinery simply made clocks as a hobby.

Cookson emphasizes the changing language that accompanied the development of the textile-machine-building industry. As such, it is often hard to categorize the makers of machines in a sector so in flux. The term *engineer* disguises more than it reveals when it is applied in this period. It was during the 1820s and 1830s that machine tools developed enough to have a massive impact upon various shop-floor operations, providing a level of precision that made interchangeable parts a real option. This drove further integration under one roof. This, of course, changed production processes, sourcing, and organization—driving the path to fully developed factories. Likewise, the term *entrepreneur* when applied to this period is an anachronism, for it had not yet been borrowed from the French. Yes, machine makers were enterprising and versatile, but they were not heroic individualistic entrepreneurs as so much of the historiography claims. By the mid-nineteenth century the production of cotton machines centered in Manchester and that of flax machinery in Leeds. Much of the necessary metal came from forges in a district around Wortley in South Yorkshire, between Sheffield, Barnsley, and Penistone. These forges combined to act more like a cartel than a group of individual manufacturers competing with one another.

Cookson goes on to illuminate the role of religious belief, machine breaking, patents, and clashes between those who supported protectionism and those who supported free trade (flow of machines and labor abroad)—but that is all beyond a short book review. This is a rich, extremely well-researched and well-argued book that sheds valuable light on the evolution of textile machine technology during the British Industrial Revolution.

William J. Ashworth
University of Liverpool
W.J.Ashworth@liverpool.ac.uk