

Lives of the Philadelphia Engineers: Capital, Class, and Revolution, 1830–1890. By *Andrew Dawson*. Aldershot, U.K.: Ashgate, 2004. xii + 302 pp. Tables, illustrations, appendix, bibliography, notes, index. Cloth, \$99.95. ISBN: 0-754-63396-9.

Reviewed by Greg Galer

The title of this book is a bit deceiving, since it is not about engineers, at least not in the modern American sense. The author's British origins explain his use of the term "engineer," which would have been understood by a nineteenth-century American audience but would mislead today's American readers. A more accurate title for today's American readers would replace "engineers" with "industrialists."

Andrew Dawson does an admirable job of recognizing and moving beyond the extensive, well-respected work on Philadelphia industry by Philip Scranton and others as he attempts, and largely succeeds, to paint a comprehensive picture of industrial leaders in nineteenth-century Philadelphia. His notes and bibliography demonstrate that he has explored and grappled with the existing literature while utilizing a wealth of primary sources to examine the lives of people who built the industrial and business community of this important city from a different perspective. In fact, Dawson's sources require special comment. His bibliography, which is extensive and thorough, includes manuscript collections, periodicals, and volumes of nineteenth-century classics, current, well-respected studies, and sources that are less well known. The list would constitute an invaluable aid to Ph.D. candidates preparing for exams.

Rather than dive into the shop-floor life of industrial Philadelphia, Dawson takes on the broader culture of Philadelphia industrialists: their politics, social organizations, religion, and socioeconomic origins. He assembles reasonably well-rounded portraits of these men but gives short shrift to the issues of industry itself by providing few details about daily activity within the shops. However, for the most part, these lapses do not significantly affect his argument.

The book pursues two major themes. The first, suggested by the title, is the “revolutionary nature” of the Philadelphia industrialists. By this Dawson means their support of free labor and their opposition to slavery. The second theme is an evaluation of the model of flexible production proposed by several scholars, including Charles Sabel, Michael Piore, Jonathan Zeitlen, Philip Scranton, and John Brown, who used Philadelphia’s industries in marshaling supportive arguments for this paradigm.

Dawson takes issue with the model, which most scholars have recognized as a nuanced antidote to Alfred Chandler’s emphasis on volume production and lower unit cost in accounting for the rise of modern industrial production. Proponents of the flexible model argue that Philadelphia’s industrialists, with their lower volume production of specialized goods, demonstrated that Ford-like mass production is not the only model of American industry. Dawson respectfully sets out their arguments, saving most of his criticism for the conclusion, where, in a departing volley, he attempts to sink the model, or more aptly, to cripple it.

So how does Dawson differ from the flexible-model proponents? Whereas they emphasize the cooperation that existed among the Philadelphia industrialists, Dawson highlights the “hierarchy and power relationships within and between firms.” He argues that Philadelphia manufacturing was controlled by the most powerful industrialists, rather than representing a joint effort by the majority of businesses. The character of the city’s industry was shaped by friction between interest groups and classes, and not, as the flexible-production theorists would have it, by cooperation among family-run companies.

This argument interfaces with the theme of Philadelphia industrialists acting as antislavery “revolutionaries” in the years before the Civil War, a position that fit into the northern ideology of free labor. Dawson concludes that the cooperative model glosses over the nuances of the free-labor concept and ignores the changing nature of production within Philadelphia industry. Although the city underwent the same trends that affected other cities—the downgrading of skills and an increasing division of labor—the impact there was more subtle than in areas that concentrated on volume production. Even in Philadelphia shops, which turned out a lower

volume of more specialized products, owners tried to limit their dependence on highly skilled and knowledgeable workmen by emphasizing, for example, the drafting office as a nexus of information. Some producers also standardized components. Authors like John K. Brown, in his work on the Baldwin Locomotive Company (*The Baldwin Locomotive Works, 1831–1915: A Study in American Industrial Practice*, 1995), recognize the manufacturers' efforts to minimize hierarchical divisions. While Brown sees standardization as an element of the flexible system, Dawson views it as a move toward greater uniformity, blurring the lines between the flexible-system model and Chandler's emphasis on mass production. Dawson reminds us that every time we try to create theoretical models we inevitably diminish some of the nuances that make the stories of real people so interesting and so difficult to write about in a comprehensive manner.

Dawson even adds some subtle touches to the story of Frederick Winslow Taylor, considered by many to be the father of scientific management. Dawson points out that Taylor developed many of his theories in Philadelphia in the very types of shops that are the subject of his analysis. While Taylor's methods were not ultimately embraced in Philadelphia, his methodology grew naturally out of its industrialists' struggles to succeed in the face of growing competition. Taylor also fits nicely into Dawson's enlightening statistical analysis of the social origins of workshop culture. Workshop owners, he demonstrates, rarely started out as immigrants or emerged from the other poor populations represented on the shop floor. While some workers of humble origins eventually came to own small shops, they rarely gained a foothold in the upper hierarchy of owners, whose power base resided in a small number of men who headed the largest shops, such as Matthias Baldwin and William Sellers. Taylor's apprenticeship as a machinist despite his upper class background made him a misfit within the social system, keeping him out of the ownership class and separating him from workers on the shop floor.

Throughout, Dawson elucidates and clarifies existing arguments. For example, he points out that industrialists were neither conservative nor politically inactive. They promoted a protectionist, socially active agenda by proxy, relying on professional politicians rather than serving in office themselves. He also indicates that

industrialists were not in complete accord on every matter, pointing out that “cohesion should not be confused with homogeneity” (p. 109). Although they held many beliefs in common and at times worked cooperatively, these men were not the unified, kin-connected bloc described by some authors. For example, Dawson explores subtle differences within this group such as between artisan mechanics and mercantile mechanics. Shop owners’ common membership in social and political clubs demonstrates a shared ideology but did not hinder free thinking and competition among them.

Nor were capitalists a conservative, proslavery monolith. By differentiating merchants from the industrial class, Dawson reveals the cracks in the “capitalist” bloc. While merchants typically fit the conservative mold described by authors such as Eric Foner, industrialists in fact worked actively and effectively against slavery. While acknowledging in his conclusion that the numerous “farmers, independent artisans, and smaller masters” formed the core of the Republican Party, Dawson argues they were not politically dominant. The industrialists, or “engineers,” drove the revolt against slavery. This argument may turn out to be the one with the greatest impact. While business historians may be interested in Dawson’s interpretation of the debate over forms of production, other historians are likely to pay attention to this new view of industrialists’ antebellum role in opposing slavery.

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