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## Revolution without progress

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| Laurent Heyberger. Revolution without progress. Metascience, 2020. halshs-04303169

**HAL Id: halshs-04303169**

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Submitted on 23 Nov 2023

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Article Sub-Title	Barbara Hahn: Technology in the industrial revolution. Cambridge: Cambridge University Press, 2020, 225pp, £18.99 PB	
Article CopyRight	Springer Nature B.V. (This will be the copyright line in the final PDF)	
Journal Name	Metascience	
Corresponding Author	Family Name	<b>Heyberger</b>
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	Given Name	<b>Laurent</b>
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Schedule	Received
	Revised
	Accepted

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Footnote Information
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2 **Revolution without progress**

3 **Barbara Hahn: Technology in the industrial revolution. Cambridge:**  
4 **Cambridge University Press, 2020, 225pp, £18.99 PB**

5 **Laurent Heyberger<sup>1</sup>**

6  
7 © Springer Nature B.V. 2020

8 This book proposes an excellent and updated approach to the history of the indus-  
9 trial revolution for undergraduate students and for anyone else who wants an intel-  
10 ligent introduction to this topic. On this very classic subject, Barbara Hahn proposes **AQ1**  
11 to go beyond the age-old question: Why did England industrialize before France?  
12 and instead to ask why did certain machines appear at specific times and places  
13 rather than others. In other words, she wants to take into account local—and, of  
14 course, global—contingencies within the multiple factors that explain the appear-  
15 ance of machines. Thus, this is an essay whose synthetic and pedagogical value in  
16 no way sacrifices the subtlety of historical reasoning.

17 Since the nineteenth century, the received wisdom concerning industrialization  
18 and mechanization is quite simple: thanks to the genius of some individual inven-  
19 tors, mechanization created industrialization and thus “[the] mythological version  
20 of the industrial revolution is as simple as a family tree of machinery” (186). A first  
21 wave of mechanization in the weaving sector (John Kay) broke the link that had  
22 bound spinning and weaving activities within English—and more broadly Euro-  
23 pean—rural families for centuries. The resulting technological bottleneck in the  
24 weaving sector was liberated thanks to the genius of a small number of inventors in  
25 the domain of spinning (Hargreaves, Arkwright, Crompton, et al.)

26 This classic vision of the industrial revolution also implies a direct and simplistic  
27 link between the advent of capitalist thought (Adam Smith) and free trade on the one  
28 hand and the birth of efficient steam engines (Watt) on the other, the former creating  
29 the economic conditions for the introduction of the latter.

30 Questioning this vulgate inherited from the nineteenth century, which has become  
31 a part of the “self-identity of Britons” (186), is the main theme of this brilliant syn-  
32 thesis by Barbara Hahn. The naïve celebrations of the triumph of industry so com-  
33 mon in the nineteenth century offer superficial representations, while here the author

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34 introduces the reader into the “black box” of the industrial revolution, illuminating  
35 it down to the last technical detail, but always with the concern to contextualize and  
36 explain technical changes by economic, social, demographic and political factors  
37 (chapter 2, “Myths and Machines”). Thus, she situates her account halfway between  
38 an internalist and a contextualist approach (Hughes 1983).

39 For each of the three elements of the classic definition of the industrial revolution  
40 given by Landes (1969; mechanization of tasks, separation of production and  
41 consumption, development of regular flows of products and standardized character-  
42 istics of objects), Barbara Hahn emphasizes some particularly important points that  
43 shed light on the question of the emergence of mechanization [the choice of energy  
44 sources, the role of demand—see Lemire (1991), and finally the role of US cot-  
45 ton plantations]. She enriches this analysis with recent advances in historiography  
46 by placing it in a global context and in the “longue durée” [chapter 1, “Sugar and  
47 Spice”, see Parthasarathi (2011)]. Thus, the reader is returned to the seventeenth-  
48 century world of cotton (Riello 2013) before being plunged back into the techno-  
49 logical black box of mechanization (chapter 2), before zooming in on “Cottonop-  
50 olis” (i.e. Manchester, chapter 3). The reader then revisits the social and political  
51 struggles around the question of mechanization, notably Luddism (chapter 4 “Power  
52 and the People”), before ending with the appearance of “the Vertical Mill” (chap-  
53 ter 5), an integrated model of production, although not the only and ultimate model  
54 of production.

55 This clear and redundancy-free plan, which skillfully varies the scales of analy-  
56 sis, allows us to apprehend certain fundamental historical realities. First of all, the  
57 role of systems and networks in the changes that took place in British society and  
58 the British economy from the 1770s to the 1840s, and the fact that mechanization  
59 was initially aimed at innovation and quality, not at reducing costs or lowering the  
60 prices of the textiles produced, as this was only the case with Paisley shawls at the  
61 beginning of the nineteenth century. Another interesting feature of the book is how  
62 it interrogates a certain number of pairs of objects or systems too often presented  
63 as successive or exclusive historical entities: handlooms *versus* powerlooms, the  
64 putting-out system *versus* the factory system, domestic weaving *versus* factory spin-  
65 ning, voluntary labor *versus* forced recruitment, and its exploration of key terms  
66 like hybridity; the hybridity of markets, hybridity of fibers used in the textile indus-  
67 try, hybridity of the energy used for mechanization (water *versus* coal), etc. It is  
68 also clear that, from an economic point of view, “industrialization fulfilled the old  
69 dreams of mercantilism while its heralds glorified free trade” (178).

70 From a pedagogical perspective, the interest of this book lies first of all in its abil-  
71 ity to explain synthetically to undergraduates a complex and multidimensional reality  
72 and to make intelligible violent debates over the causes of the industrial revolution and  
73 mechanization [among others, the debate over the role of the high wages of English  
74 workers in the wake of mechanization, see Allen (2009) *versus* Humphries and Weis-  
75 dorf (2015), or the debate over the role of institutional changes]. Barbara Hahn also  
76 takes the time to explain the shift in meaning of certain notions or words that might  
77 seem timeless to neophytes (capitalism, plantation, factory system, manufacture, etc.),  
78 to show the historicity of evident truths that, moreover, do not go without saying (the  
79 place of American cotton in the British economy in the first half of the nineteenth cen-  
80 tury, the long-term place of coal in the British economic and technological systems,

81 etc.) all the time resisting any temptation for teleology. In short, this is a book that  
82 teaches us to think. Hahn provides very enlightening partial conclusions along the way,  
83 complemented by a short bibliography with relevant references at the end of each chap-  
84 ter. Finally, her specific examples, from the “Callico Madams” (chapter 1) to John Mar-  
85 shall’s grandiose vertical mill (chapter 5), give substance to technical changes that are  
86 sometimes difficult to conceive, especially for young readers immersed in the digital  
87 world of the twenty-first century.

88 The only criticism I can offer concerns the author’s evocation of the birth of the  
89 consumer society in terms of an improvement in nutritional intake, acquisition of  
90 clothes, watches, Wedgwood porcelain, etc., and even the boom in seaside tourism,  
91 which began to benefit some workers (or farmers) as early as the 1840s. She interprets  
92 these changes as an improvement in the living standards and living conditions of the  
93 working classes due to industrialization. But, although she quotes a reference by John  
94 Komlos, she forgets that, as with mechanization, there is no teleology in terms of living  
95 standards and that reality here can also be multidimensional. Hahn does not mention  
96 the works of new anthropometric history [Floud et al. (1990) and Cinnirella (2008), in  
97 particular] which have nevertheless shown that, with the exception of Saxony, British  
98 industrialization was accompanied by a significant decline in biological living stand-  
99 ards (measured by stature) during the first half of the nineteenth century. This is just  
100 one consequence, among many, of the anarchic growth of British cities during industri-  
101 alization and increasing inequalities between their inhabitants. Although the results of  
102 anthropometric history are still being debated, the author could have at least mentioned  
103 this important area of economic history. But this flaw does not detract from the many  
104 qualities of this very fine work.

105

## 106 References

- 107 Allen, Robert C. 2009. *The British Industrial Revolution in Global Perspective*. Cambridge: Cambridge Uni-  
108 versity Press.
- 109 Cinnirella, Francesco. 2008. Optimists or pessimists? A reconsideration of nutritional status in Britain, 1740–  
110 1865. *European Review of Economic History* 12–3: 325–354.
- 111 Floud, Roderick, Kenneth Wachter, and Annabel Gregory. 1990. *Height, health and history. Nutritional sta-*  
112 *tus in the United-Kingdom, 1750–1980*. Cambridge: Cambridge University Press.
- 113 Hughes, Thomas P. 1983. *Networks of Power: Electrification in Western Society, 1880–1930*. Baltimore:  
114 Johns Hopkins University Press.
- 115 Humphries, Jane, and Jacob Weisdorf. 2015. The Wages of Women in England, 1260–1850. *Journal of Eco-*  
116 *nomic History* 75–2: 405–447.
- 117 Landes, David S. 1969. *Unbound Prometheus: Technological Change and Industrial Development in West-*  
118 *ern Europe from 1750 to the Present*. Cambridge: Cambridge University Press.
- 119 Lemire, Beverly. 1991. *Fashion’s Favorite: The Cotton Trade and the Consumer in Britain, 1660–1800*.  
120 Oxford: Oxford University Press.
- 121 Parthasarathi, Prasannan. 2011. *Why Europe Grew Rich and Asia Did Not: Global Economic Divergence,*  
122 *1600–1850*. Cambridge: Cambridge University Press.
- 123 Riello, Giorgio. 2013. *Cotton: The Fabric That Made the Modern World*. Cambridge: Cambridge University  
124 Press.

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