Causes of the Industrial Revolution: An Overview

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Eric Hobsbawm did not exaggerate when he opined that "the Industrial Revolution marks the most fundamental transformation of human life in the history of the world recorded in written documents."[1] If one wants to understand the origins of modern society, one has to understand the origins of Britain's Industrial Revolution. Teasing apart the causal factors is no easy task, considering that one has to determine the roles of colonialism, international trade, American slavery, the Scientific Revolution, the Glorious Revolution, environmental factors, population growth, enclosures of farmland, low interest rates, war, and many other things. Nonetheless, in the last hundred years historians have clarified matters immensely, such that it now seems possible to understand at least in broad outlines the causes of Britain's industrialization. In this paper I will survey explanations put forward in four books published between 1948 and 2009: *The Industrial Revolution, 1760-1830* by T. S. Ashton (1948), *The First Industrial Revolution* by Phyllis Deane (1979), *Industry and Empire: From 1750 to the Present Day* by Eric Hobsbawm (1999), and *The British Industrial Revolution in Global Perspective* by Robert C. Allen (2009). Only the last is devoted solely to the question of what caused the Industrial Revolution and why it happened in Britain rather than elsewhere, but the others, written by important scholars, have much to say on the subject. Their explanations of Britain's great economic transformation are fascinating in their own right, but it is also of interest to observe the changes in scholarship over the last sixty years—the changes in emphases, in perspectives, and in scholarly sophistication.

One of the most obvious changes is embodied in Allen's use of the word "global" in his title. While earlier historians, such as Ashton, at least passingly mention events and conditions in non-European parts of the world, they do not emphasize them in the way that recent historians do. Indeed, this generalization applies across the historical discipline as a whole. Under the impetus of modern globalization, i.e. the worldwide impinging of economies, polities, and cultures upon each other, contemporary historians have inaugurated a "transnational" turn in scholarship, which rejects the

[1] Eric Hobsbawm, *Industry and Empire: From 1750 to the Present Day* (New York: The New Press, 1999), xi.

parochialism of national histories in favor of histories that analyze cross-national social movements or anything else that doesn't respect national boundaries and sometimes tends even to undermine them. Allen's book does not quite reach this non-national level, being more like a comparative than a transnational history, but it is clearly influenced by these recent scholarly trends. Ashton's book, by contrast, is decidedly "un-international," i.e. Britain-focused.

It is also less sophisticated and conscientious in its scholarly trappings than Allen's, and recent historiography in general. In part this is because it is a brief overview of the entire Industrial Revolution. Even taking that into account, though, it is relatively "primitive," so to speak, lacking in citations and in the *cautiousness* when making judgments that recent scholarship evinces. It has a breezy confidence that is out of fashion in contemporary history-writing. Current historians have so much literature to consider that they tend to narrow their focus, avoid generalizations, and discuss myriad authors to demonstrate their knowledge. This makes their scholarship more reliable but also, sometimes, less readable. Their works are more "polished," but there is a value in directness and "roughness" too.

For example, Ashton states flatly, "The outstanding feature of the social history of the period [between 1760 and 1830]—the thing that above all others distinguishes the age from its predecessors—is the rapid growth of population" in England and Wales (from six and half million in 1750 to fourteen million in 1831). What explains this growth? Not a rise in the birth rate; "it was a fall of mortality that led to the increase of numbers."[2] What explains the fall of mortality?

> The introduction of root crops made it possible to feed more cattle in the winter months, and so to supply fresh meat throughout the year. The substitution of wheat for inferior cereals, and an increased consumption of vegetables, strengthened resistance to disease. Higher standards of personal cleanliness, associated with more soap and cheaper cotton underwear, lessened the dangers of infection. The use of brick in place of timber in the walls, and of slate or stone instead of thatch in the roofs of cottages, reduced the number of pests.... The

[2] Hobsbawm contests this. See ibid., 22. It may well be that both factors played a role: the birth rate rose and the death rate fell, at least for people of certain ages (infants, for example).

> larger towns were paved, drained, and supplied with running water; knowledge of medicine and surgery developed; hospitals and dispensaries increased....[3]

This brevity and forcefulness contrast with Phyllis Deane's lengthy and cautious discussion of the same topic. Ashton displays similar "breezy confidence" when asking what relationship population growth had to the development of industry. Was it a cause or an effect of the simultaneous economic changes? The obvious answer is "Both," since a rising population made possible greater effective demand and was made possible by greater agricultural and industrial productivity. This is the answer Ashton seems to endorse when he quickly rejects both alternatives (cause or effect) in their one-sided opposition and concludes simply that alongside the population increase occurred an increase of productive land and capital, making possible a rise in the standard of living for most people.

So how does Ashton explain the Industrial Revolution? "If we seek—it would be wrong to do so—for a single reason why the pace of economic development quickened about the middle of the eighteenth century, it is to this [lowering of interest rates] we must look. The deep mines, solidly built factories, well-constructed canals, and substantial houses of the industrial revolution were the products of relatively cheap capital."[4] Low interest rates are not the only explanation he gives, but they have primacy. They resulted from the nationwide accumulation of savings, due largely to the fact that after the Glorious Revolution the ranks of the wealthy and middle class swelled and the rich got richer—and the rich have a higher propensity to save than spend. Thus, Britain's supply of capital increased throughout the eighteenth century—as did that of labor, due in part to population growth.

Ashton also emphasizes a factor of whose importance recent scholars have come to doubt: enclosures. He argues that the agricultural revolution that supposedly happened in the eighteenth century, which improved the land's productivity, was made possible in large part by "the creation of new units of administration in which the individual had more scope for experiment; and this meant the parcelling out and enclosure of the common fields, or the breaking up of the rough pasture and waste which had previously contributed little to the output of the village." Enclosures had been going on

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[3] T. S. Ashton, *The Industrial Revolution, 1760-1830* (Westport, CT: Greenwood Press, 1986), 4, 5. This is a reprint of the 1948 edition.

[4] Ibid., 9, 10.

for centuries; their importance, Ashton thinks, consisted in that they made it easier to bring about changes of method in farming. For example, enterprising landowners introduced four-course crop rotation, the growing of turnips, the Rotherham plow, the production of grain and cattle rather than of sheep, and cultivation by tenants on large-scale holdings. Gradually, the horse was substituted for the ox, and wheat was grown instead of rye or oats. At the same time, Ashton thinks, enclosures drove many peasants off the land, "freeing" them to serve as industrial laborers. (He shares this belief with Karl Marx, although, being a conservative, he puts a positive spin on it.) All these processes facilitated the Industrial Revolution.[5]

Among the other factors Ashton highlights are the dismantling of feudal regulations on economic activity in the seventeenth and eighteenth centuries, and the momentous improvements in means of transport that occurred between 1760 and 1830. He calls this the "canal era," but roads too were vastly improved—both by the government and by wealthy individuals—greatly reducing the cost of transporting coal, iron, timber, and other heavy commodities.[6] He acknowledges the Scientific Revolution as laying the foundation for the many brilliant inventions that swept the land, from Hargreaves' spinning jenny to Watt's steam engine, but he denies that trade with non-European countries played a significant role in precipitating England's economic transformations. The volume of such trade, he notes, was minor in comparison to the volume of trade with Europe. Ashton's conservative liberalism is revealed in his celebration of individual entrepreneurs over monopolistic organizations like the East India Company, and in his virtual ignoring of colonialism and slavery as possible contributors to the Industrial Revolution.

Phyllis Deane's *First Industrial Revolution*, being a synthesis of much scholarship, is less partisan on many points than Ashton's book. Deane also revises some of Ashton's emphases in the light of new empirical work. For example, while she agrees "there is no doubt that enclosure extended the area of productive land in England," she is careful not to exaggerate the movement's importance. In the late eighteenth and early nineteenth centuries, enclosure of millions of acres of common pasture and waste helped make possible the land's ability to feed a rapidly growing population, but Deane refuses to take a stand on the question of enclosures' responsibility for the introduction of "new techniques of large-scale farming, mechanization, stockbreeding, land drainage

[5] Ibid., 18-21, 45.
[6] Ibid., 59.

and scientific experiment."[7] More precisely, she thinks enclosure was a necessary but not a sufficient condition for introducing these techniques. She also is skeptical that enclosing lands released an army of laborers into urban areas where they could work for industrialists, in part because some of the new agricultural techniques required more, not less, labor. Still, she concedes that *some* surplus labor was released for use in industry. The agricultural revolution was also important, she argues, in providing much of the capital that was needed to finance industrialization and to keep it going through a long period of wars. It is significant that many of the funds that financed the Industrial Revolution came from landowners.

Deane gives much more attention to colonialism, slavery, and trade with non-European countries than Ashton does. English plantations in the West Indies had extended the range of commodities English merchants could sell to Europeans in exchange for foreign timber, silk for the textile trade, pitch and hemp for ships and buildings, high-grade iron for the metal trade, etc. Thus, West Indian products such as sugar, tobacco, cotton, indigo, and dyewoods, produced by slaves on plantations (and exchanged in the West Indies for captured Africans), allowed Britain to expand its international trade and accumulate capital with which to fund industry. (Raw cotton, too, was *directly* involved in Britain's industrialization, as we'll see momentarily.) International trade was also important in that it provided poor, less-developed countries with the purchasing power to buy British goods, and in its causing the growth of large towns and industrial centers. "It was the growth of really big towns like London, Liverpool, Manchester, Birmingham, and Glasgow that directly stimulated the large-scale investments in *transport* which were such an important feature of the early stages of the British industrial revolution."[8] All these towns, especially Liverpool and Glasgow, owed much of their growth to foreign trade.

Among other preconditions for industrialization were what Deane calls the "transport revolution" and the "demographic revolution," but, having mentioned these already, we will proceed to the industry that sparked the explosion, viz. the cotton industry. Ashton places little emphasis on it, but Deane appreciates its significance. (The other early industry she considers almost as important was iron production.) One reason for the decisive role of cotton is that it used factors of production with which

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[7] Phyllis Deane, *The First Industrial Revolution* (New York: Cambridge University Press, 1979), 44.

[8] Ibid., 71.

Britain was amply supplied. It was labor-intensive, for example, and the skills it required, such as the weaver's skill, were abundant. It also used the labor of women and children, which made for an extra-abundant and cheap labor force. Moreover, the demand for cotton was highly elastic; i.e., small changes in price had large effects on the quantity demanded. In addition, it helped that there was already a high demand for cotton goods made in India, which were of better quality than those from Britain. For these and other reasons, mechanical inventions in the late eighteenth century that permitted greater output of cotton at a cheaper price and with a higher quality were quickly adopted by industrialists. An epochal consequence of these inventions was that they made feasible and desirable the concentration of workers in large factories. Deane quotes W. W. Rostow on the long-term implications of the growth of the cotton industry: "Industrial enterprise on this scale had secondary reactions on the development of urban areas, the demand for coal, iron and machinery, the demand for working capital and ultimately the demand for cheap transport, which powerfully stimulated industrial development in other directions."[9]

One can cull from Deane's book a list of miscellaneous other factors that led to the Industrial Revolution. The development of the steam-engine and the iron industry had major implications, both cost-saving and demand-increasing, for producers' goods industries in general. Abundant cheap labor "promoted new investment and so maintained technical progress which, by economizing in both capital and labour [and thus making possible higher profits even as prices fell], generated a cumulative self-reinforcing expansion in economic activity."[10] In the sphere of finance, Britain was lucky to have, by the mid-eighteenth century, the most sophisticated system of money and banking in Europe, which allowed capital to be efficiently directed to promising business ventures. It should be clear by now, in any case, that *The First Industrial Revolution* is, on the whole, a measured and fair overview of the main scholarly trends at the time of its writing. Its particular "slant," if it has one, is merely *synthesis*.

Eric Hobsbawm's *Industry and Empire* consists of synthesis as well, but it is not quite as "neutral" a book as Phyllis Deane's: Hobsbawm is a Marxist, so his interpretations tend to reflect that position. Nevertheless, so respectable and scholarly a historian is, naturally, broad-minded and not overly partisan. His book, being an economic and social history of Britain since 1750, has a much larger subject-matter than the question of

[9] Ibid., 94.
[10] Ibid., 144.

what caused the Industrial Revolution, but his views on that topic are insightful and worth considering. Right away he states two things: first, that integral to British industrialization was the country's place in a world economy dominated by Europe; second—and here his Marxism is evident—that a satisfactory explanation cannot invoke only exogenous factors such as climate, geography, or biological change in the population, or only political conditions, or only historical accidents like the discovery of the Americas. All these explanations still leave open the question of why the revolution did not occur earlier, e.g. at the end of the seventeenth century, or in some other place in Europe that shared the particular property—such as large coal deposits—that supposedly gave Britain its advantage. Instead, we have to examine, first and foremost, the nature of Britain's economic conditions and institutions in the mid-eighteenth century.[11]

As it turns out, Britain in 1750 was well-prepared for industrialization. A landholding peasantry had already disappeared in much of England, as had subsistence agriculture. "The country was not merely a market economy—one in which the bulk of goods and services outside the family are bought and sold—but in many respects it formed a single national market. And it possessed an extensive and fairly highly developed manufacturing sector and an even more highly developed commercial apparatus."[12] The average income probably increased substantially in the first half of the century, so that effective demand rose. Britain's domestic market therefore was gradually and stably expanding—and this stability proved important in years when foreign demand fluctuated wildly or collapsed. However, it was foreign demand, Hobsbawm argues, that provided the real spark for the Industrial Revolution. If anything, he emphasizes its role even more than Phyllis Deane does.

What explains the explosive expansiveness of Britain's export industries in the late eighteenth and early nineteenth centuries? Two things: the capture of other countries' export markets, and the destruction of domestic competition in particular countries. That is, war and colonization led to Britain's industrial development. This brings us to the third major factor Hobsbawm discusses (after the domestic and foreign markets): *government*. Britain was lucky in that its government, unlike France's, subordinated foreign policy entirely to economic interests. Its eventual control of nearly all Europe's overseas colonies thus proved of enormous economic benefit. Incidentally, the wars in

[11] Eric Hobsbawm, *Industry and Empire*, 13-16.
[12] Ibid., 17.

which it won all these colonies contributed *directly* to technological innovation and industrialization by virtue of the government's demand for guns, ships, cannon, and other such iron-built items. The figures on colonial trade that Hobsbawm quotes are striking: in 1700, Britain's colonial trade constituted 15 percent of its total commerce; in 1775 it was about a third.

In short, "our [i.e., Britain's] industrial economy grew out of our commerce, and especially our commerce with the underdeveloped world." But what exactly explains that statement? Phyllis Deane has already given much of the answer: the cotton industry was integrally connected to international, and especially to colonial, commerce. Until 1770, Hobsbawm notes, over 90 percent of British cotton exports went to colonial markets, mainly Africa.[13] (Later on, India assumed immense importance.) At times in the eighteenth and nineteenth centuries cotton penetrated the markets of Europe and the U.S., but wars and native competition always ended that expansion of the industry, and it returned to some region of the undeveloped world. While in its day it was the best in the world, Hobsbawm is surely right that it was not competitive advantage that explained the preeminence of Britain's cotton industry but "a monopoly of the colonial and underdeveloped markets which the British Empire, the British Navy and British commercial supremacy gave it."[14]

On other matters, Hobsbawm dissents from the views of Ashton and Deane. For example, while they date the Industrial Revolution from about the 1760s, he dates it from the 1780s. One can argue, however, that the perennial debate among scholars over when exactly the revolution began and ended is not of much consequence. More substantive is the historians' disagreement over the importance of the iron industry during the first phase of industrialization. Deane and Ashton consider it to have been, even early on, of almost comparable importance to cotton, whereas Hobsbawm argues that, like coal, "it did not undergo its real industrial revolution until the middle decades of the nineteenth century, or about fifty years later than cotton; for while consumer goods industries possess a mass market even in pre-industrial economies, capital goods industries acquire such a market only in already industrializing or industrialized

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[13] Exports from Britain's somewhat backward cotton industry vastly expanded after 1750, giving the industry the impetus that culminated in its "industrialization" in the 1780s.

[14] Ibid., 32, 36. His next sentence is, "Its [i.e., Britain's cotton industry's] days were numbered after the First World War, when the Indians, Chinese and Japanese manufactured or even exported their own cotton goods and could no longer be prevented from doing so by British political interference."

ones."[15] (He does not deny, however, that far-reaching technical innovations occurred in the iron industry during the eighteenth century, such as the smelting of iron with coke instead of charcoal and the inventions of puddling and rolling.) On the question of whether low interest rates triggered the Industrial Revolution—which Ashton effectively answered in the affirmative—Hobsbawm follows Deane in not even dignifying it with an answer. This is one issue on which recent empirical research has apparently refuted traditional historiography.

With each of these authors we have observed ever-greater rigor, sophistication in scholarship, and reliance on empirical data,[16] as well as greater emphasis on Britain's integration into the world economy. These trends are arguably taken further in Robert Allen's work *The British Industrial Revolution in Global Perspective*. Not only does Allen focus on the global context; he also incorporates the relatively new field of environmental history. The main argument of his book is that the reason why industrialization happened in Britain rather than elsewhere was the unique combination of high wages (compared to other countries) and cheap energy. In China, for example, energy was expensive and labor was cheap, so it made no sense to use inventions like the steam engine and the coke blast furnace that substituted coal and capital for labor. That is, industrialization was *profitable* in Britain and unprofitable everywhere else; that is why it happened there. "The prices that governed these profitability considerations," Allen argues, "were the result of Britain's success in the global economy after 1500, so the Industrial Revolution can be seen as the sequel to that first phase of globalization."[17]

England's high wages of the seventeenth and eighteenth centuries, a consequence of vigorous economic growth, were important also in that they ensured high levels of consumption and education, as manifested in literacy and numeracy. Likewise, they point to a pertinent difference between the England of 1750 and the England of 1450, which helps explain why the Industrial Revolution did not happen earlier despite the presence even then of relatively high wages: the Scientific Revolution had led to the "Industrial Enlightenment" of the eighteenth century (in addition to making possible new technology on the basis of insights relating to atmospheric pressure and time-

[15] Ibid., 49.

[16] In a short paper we cannot convey the thoroughness with which Hobsbawm treats empirical records.

[17] Robert Allen, *The British Industrial Revolution in Global Perspective* (New York: Cambridge University Press, 2009), 2.

keeping). As Joel Mokyr defines it, the Industrial Enlightenment was "that part of the Enlightenment that believed that material progress and economic growth could be achieved through increasing human knowledge of natural phenomena and making this knowledge accessible to those who could make use of it in production."[18] By analyzing the biographies of 79 inventors of the eighteenth century, Allen shows that social and economic links existed between intellectuals and producers, "the *savants* and the *fabricants*," indeed that the social circles of shopkeepers, proto-industrialists, artisans, and the wealthy were permeated by "scientific writers, tinkerers, engineers, lecturers, and experimental philosophers." He thereby demonstrates the soundness and significance of Mokyr's conception of the Industrial Enlightenment as contributing to the Industrial Revolution. More generally, the decline of superstition and rise of a scientific worldview seems to have been a precondition of Britain's industrialization.

As stated above, environmental history has a major role in Allen's book. He uses it to explain not only the course of the Industrial Revolution but also the success of England's early modern economy. To summarize his argument very briefly, the Black Death of the mid-fourteenth century slashed England's population. England's comparative advantage had already been the production of wool, but with the post-plague reversion of millions of acres of arable land to pasture, sheep had more nutritious diets, which made their wool grow to greater length. Long wool was better suited to making worsted cloth, which was the material of the "new draperies" whose export benefited from the commercial revolution of early modern Europe. The very important export of draperies and other woollen fabrics caused London, their export point, to grow in the seventeenth century, and it continued to grow as trade with the Americas, Africa, and Asia expanded. London's growth encouraged the rise of coal mining, and eventually the application of coal to more and more industrial technologies. "Metal refining and fabricating industries, among others, took off and provided a basis for economic development outside of London." Given the presence of cheap coal in northern Britain, wages could rise rapidly in that region—ultimately converging with London levels—without hurting the international competitiveness of industries there. High wages meant high demand, which further stimulated economic growth. Allen sums it all up in one sentence: "The success of the British economy was,

[18] Quoted in ibid., 239.

thus, due to long-haired sheep, cheap coal and the imperial foreign policy that secured a rising volume of trade."[19]

Coal was important not only as a source of cheap energy but also for its "technological spin-offs," the steam engine and the railway. Without the coal industry, after all, there would have been no point in inventing the steam engine—which by the late eighteenth century was used in cotton mills—and so "scientific discoveries would not have flowered into the technology of the Industrial Revolution."[20] The French invented technologies too, for example in paper production, but they were not as transformative as the steam engine and cheap iron. They did not lead to widespread mechanization and globalization. The difference between France and Britain, according to Allen's rather simplified account, is just that the latter was luckier in its geology. Only after British engineers in the mid-nineteenth century had made the steam engine more fuel-efficient, so that it consumed less coal, did it become profitable for other countries with less abundant supplies of coal to use it—and they did so.

Allen also has much to say about the agricultural revolution. In the standard narrative, to which the other authors we have considered (including Hobsbawm) essentially subscribe, "enclosure of open fields and the replacement of peasant cultivation by capitalist farming" were largely responsible for the agricultural revolution, i.e. the revolution in the land's productivity. "These changes," Allen continues in his description of the narrative, "increased output and (in Marxist accounts) reduced farm employment. The extra output made it possible to feed a larger urban or proto-industrial population and so fostered the growth of manufacturing. Institutional change in the countryside caused the growth of the city and propelled the economy forward."[21] Allen concedes there is some truth to this narrative, but he thinks causation ran more strongly in the opposite direction, from expansion of cities (resulting from international trade) to increased agricultural productivity. That is, the process involved more "pull" than "push." In the seventeenth and eighteenth centuries, as the growth of international trade was precipitating the expansion of cities and improvements in the urban standard of living, farmers, whose incomes began to stagnate, felt left out of the economic boom. Many sold their land and moved to London, a process that facilitated the growth of large estates. Others invested in

[19] Ibid., 111, 130.
[20] Ibid., 157.
[21] Ibid., 78.

productivity improvements, whether by increasing crop and livestock yields or by farming with fewer people, which was done by "amalgamating small holdings into large farms and enclosing open field arable and converting it to pasture."[22] Both landlords and well-off farmers did this. —Notwithstanding these minor corrections to the standard narrative, it seems that the four authors we have reviewed agree on the fundamentals, that a revolution in agricultural productivity that coincided, at least in the long run, with depopulation of the countryside was an essential foundation of Britain's Industrial Revolution.

A peculiar thing about that world-historic event is that no matter how much one studies it, there remains something mysterious about it. There are so many factors to take into consideration that true understanding always seems out of reach. In this short paper we have barely been able to gesture at such understanding, but at least we have seen how some of the historiography has evolved. It is true that the four books discussed here focus, perhaps a bit too much, on economic history, saying little about the cultural and intellectual context. This charge is least justified, however, with regard to *The British Industrial Revolution in Global Perspective*. As we have seen, Allen considers the Industrial Enlightenment to have been important in undermining a culture of superstition and exalting science instead; he is interested in the social and intellectual circles in which inventors moved. "Scientific lectures," he notes, "were popular in eighteenth-century England, as were books explaining the discoveries of Newton and other natural philosophers. The hoi polloi became familiar with the discoveries of science and with the scientific worldview.... This worldview was conducive to the improvement of technology."[23] More than any of the other authors, Allen appreciates the positive lesson of postmodernism, that the cultural and intellectual environment influences what happens in society and even the economy. In fact, Allen's book is an intriguing synthesis of technological history—he discusses in minute detail the functioning of the most significant inventions associated with the Industrial Revolution—economic history, environmental history, and cultural history. The latter is mostly ignored by the other three books, although Deane mentions "changes in entrepreneurial attitudes to innovation," quoting Samuel Johnson's sardonic comment that "The age is running mad after innovation. All the business of the world is to be done in a new way: men are to be hanged in a new way; Tyburn itself is not safe from

[22] Ibid.
[23] Ibid., 241.

the fury of innovation."[24] Insofar as the three earlier authors (Ashton, Deane, and Hobsbawm) ignore the cultural and intellectual environment of Britain's industrialization, that is surely a flaw in their works.

All four authors rely largely on secondary sources, although, again, this is least true of Allen, who uses many contemporary drawings of eighteenth-century inventions and quotations from writers of the day. Ashton's and Deane's books are introductions to the subject, so they make no apologies for relying on secondary sources; Hobsbawm's is an introduction not only to the Industrial Revolution but to British economic history as a whole from 1750 to the present. The main difference between the four studies summarized here is probably their growing *comprehensiveness*, from Ashton's little 1948 book (111 pages) to Allen's incorporation of at least four different fields of study. In this sense, Allen's is probably the best work to emulate—although Hobsbawm's thorough familiarity with 250 years of history, as well as his writing style, are remarkable. In any event, after reading these four works and contemplating the path of historiography from the 1940s to the present, one is left with a sense of satisfaction at the state of historical scholarship today. It does not degenerate, as some things in human culture do; it ascends.[25]

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[24] Deane, *The First Industrial Revolution*, 123.

[25] [That's a nice positive note to end on, but it isn't entirely true. See my paper critiquing contemporary historiography, at https://www.wrightswriting.com/scholarship.]