The workshop of a new society

The industrial revolution gave an utterly new shape to Britain's economy, its population, its cities and its society. But not quite as fast as is supposed

1670–1850

BRITAIN'S industrial revolution was more than that. In most senses, it was a revolution of society too. A mainland population of maybe 6m–7m in 1700 was put at 10.7m by the first official census in 1801, 20.9m in 1851 and 37.1m by 1901. A nation of countrymen went to town. Agriculture's share of male employment fell between 1700 and 1850 from about 60% to about 25%; industry's rose from under 20% to around 50%. And as industrialists built steam-powered factories near the markets, the one Briton in six living in town in 1700 became by 1850 one in two.

The industrial change, however, was neither as swift nor as complete as is often thought. Tradition describes a roaring take-off between 1770 and 1830, driven by a handful of technological innovations, such as textile machinery and James Watt's improved steam engines; and, hey presto, Britain is "the workshop of the world". In fact, the process had begun in the 17th century and was still incomplete in the 1830s, by when only a few industries—mining, metal-working, textiles, brewing—had taken to "factory" methods.

Technological change, important as it was, was not the be-all and end-all. Nor yet did it start with the machine-builders. They depended on earlier advances in iron technology that enabled that industry to produce, in quantity, better and cheaper iron goods such as components for the new machines or for structural use. And, from around 1670, other factors were at work.

One was the development of coal as a fuel, as the cost of wood rose. Next, the growth of thriving rural industries, supplementing farm incomes, which laid the basis for a skilled industrial workforce. Third, the increasing commercialisation of manufacturing, to meet rising demand for cheaper cloth and metal goods from the growing urban elites in Britain and mainland Europe, and from British colonies.

Britain was helped too by easy access to the sea, political stability and light regulation of trade, finance and industry. It also developed a highly specialised workforce, speeding up the development of new products and processes. Industrial output, according to one modern estimate, rose by 0.7% a year between 1700 and 1760, by 1.3% in the 1760s and 1770s, 2.0% in the 1780s and 1790s, and 2.8% between 1800 and 1830.

Work changed, and more than that, as manpower and water power gave way to steam and machines, and rural craftsmanship to urban factories manned by unskilled labour. For some, work vanished. Rural weavers put up a desperate fight for their jobs, marching, petitioning Parliament and burning mills and machinery such as Daniel Burton's textile factory in Middleton, Lancashire, in 1812, but all in vain.

The new factory workers who took their place were mostly unskilled, and earned less than the craftsmen had. Yet for the many men, women and children who flocked to the factory gate, the pay on offer was better than they had earned as farmhands or servants. And as one skill died, new ones were needed: those of tool- or machine-builders, or—almost a new class—foremen.

One aspect of factory life was universally hated by the workforce. Considerations of productivity and safety led employers to regulate all aspects of life in the factory: working hours, breaks and movement inside "the works". Many workers resisted what they saw as infringements of individual freedom, and some of the traditions of the small workshops survived for a while. Employers had to fight hard for the demise of "Saint Monday", when men went to the pub after work on Saturday and did not return until Tuesday morning, disrupting production in spite of (or by) their frantic efforts to catch up by the end of the week.

The clergy and the good-hearted middle classes worried much about their inferiors' morality, as men and women in the mass flocked into the new workplaces. Some industrialists tried to prevent workmen entering parts of the factory where women worked—without much success. In time, awkward-squad parts of the middle class began to worry about the employers' social morality too:

Mrs Gaskell's "North and South" offers an early illustration.

Outside "the works" too, conditions altered greatly. Overcrowding, in jerry-built housing in the much-polluted new towns, brought ill-health; at its worst, the devastating cholera epidemics of 1831–32, 1848 and 1854–55. Despite efforts by some employers, charities and eventually local authorities, improvement was slow before the end of the 19th century. Yet a new, mass urban society was born, and not all of its life was the misery depicted by writers from Dickens to D.H. Lawrence. Our deprived Victorian ancestors were quite good at enjoying themselves.

The most obvious beneficiaries of the industrial revolution were the new "barons" such as the Whitbreads in brewing, the Guests in iron or the Strutts in the cotton industry. But the landed classes too profited, from mineral royalties, rises in urban land values and their own investment in industrial concerns. The greatest gainers, though, were the working class, whose living standards rose from 1820 onwards, after 70 years of stagnation. This rise accelerated between 1870 and 1900, when real wages, consumption and life expectancy all rose sharply.

Simultaneously, new forms of leisure emerged, which became synonymous with the British working class: football matches, social clubs, seaside resorts. By 1900, the ordinary Briton was better paid, fed, clothed, housed, educated, perhaps amused and certainly better represented in politics, than his forefathers could have dreamed of.

Not everyone was content. Lawrence was soon to pour out his ample bile on the machine world. In 1933, J.B. Priestley lamented that it was "as if the country had devoted a hundred years of its life to keeping gigantic sooty pigs. And the people who were choked by the reek of the sties did not get the bacon." Actually, they got quite a lot. Whether that was a fair share is a separate story.

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