CHAPTER

9 Revolutions of Industrialization

1750–1900

Industrialization: The Global Context

The First Industrial Society
- The British Aristocracy
- The Middle Classes
- The Laboring Classes
- Social Protest

Europeans in Motion

Variations on a Theme: Industrialization in the United States and Russia
- The United States: Industrialization without Socialism
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- After Independence in Latin America
- Facing the World Economy
- Becoming like Europe?

Reflections: History and Horse Races

In mid-2017, Erik Solheim, the Norwegian head of the UN Environment Program, stated that "humanity's advancement in science, technology and industrialization [is] harming the planet, hence the need to reverse course."[1] At the same time, Dr. Lloyd G. Adu Amoah, a prominent professor at the University of Ghana in West Africa, declared: "We need to industrialize, because if we don't, we are not adding value to what the African continent has."[2]

These two statements represent perhaps the most compelling dilemma facing humankind in the twenty-first century. How can we embrace the wealth and improvement in human life universally associated with industrialization, while preserving and protecting this fragile planet that sustains us all? That profound dilemma has its origins in the enormously transformative process of the Industrial Revolution, which took place initially in Europe during the century and a half between 1750 and 1900. Not since the Agricultural Revolution some 12,000 years ago have our ways of living and our relationship to the natural world been so fundamentally altered.

In any long-term reckoning, the history of industrialization is very much an unfinished story. Are we at the beginning of a movement leading to worldwide industrialization, stuck in the middle of a world permanently divided into rich and poor countries, or approaching the end of an environmentally unsustainable industrial era? Whatever the future holds, this chapter focuses on the early stages of an immense transformation in the global condition of humankind.

AP Analyzing Evidence

How is the Industrial Revolution represented in this image? What mood was the artist trying to display? What might some of the most common criticisms of industrialization be?

AP® Continuity and Change

In what ways did the Industrial Revolution mark a sharp break with the past? In what ways did it continue earlier patterns?

Industrialization: The Global Context

The epic economic transformation of the Industrial Revolution took shape as a very substantial increase in human numbers unfolded—from about 375 million people in 1400 to about 1 billion in the early nineteenth century. Accompanying this growth in population was an emerging energy crisis, most pronounced in Western Europe, China, and Japan, as wood and charcoal, the major industrial fuels, became more scarce and more costly. In short, "global energy demands began to push against the existing local and regional ecological limits."[3] In broad terms, the Industrial Revolution marked a human response to that dilemma. It was a twofold revolution—drawing on new sources of energy and new technologies—that combined to utterly transform economic and social life on the planet.

AP® EXAM TIP

Pay close attention to this explanation of the significance of the Industrial Revolution.

In terms of energy, the Industrial Revolution came to rely on fossil fuels such as coal, oil, and natural gas, which supplemented and largely replaced the earlier energy sources of wind, water, wood, and the muscle power of people and animals that had long sustained humankind. It was a breakthrough of unprecedented proportions that made available for human use, at least temporarily, immensely greater quantities of energy. During the nineteenth century, yet another fuel became widely available as Europeans learned to exploit guano, or seabird excrement, found on the islands off the coast of Peru. Used as a potent fertilizer, guano enabled highly productive input-intensive farming practices. In much of Western Europe, North America, Australia, and New Zealand, it sustained the production of crops that fed both the draft animals and the growing human populations of the industrializing world.[4]

AP® EXAM TIP

Remember that human interactions with the environment are always important subjects in this course and are fair game for AP® exam questions.

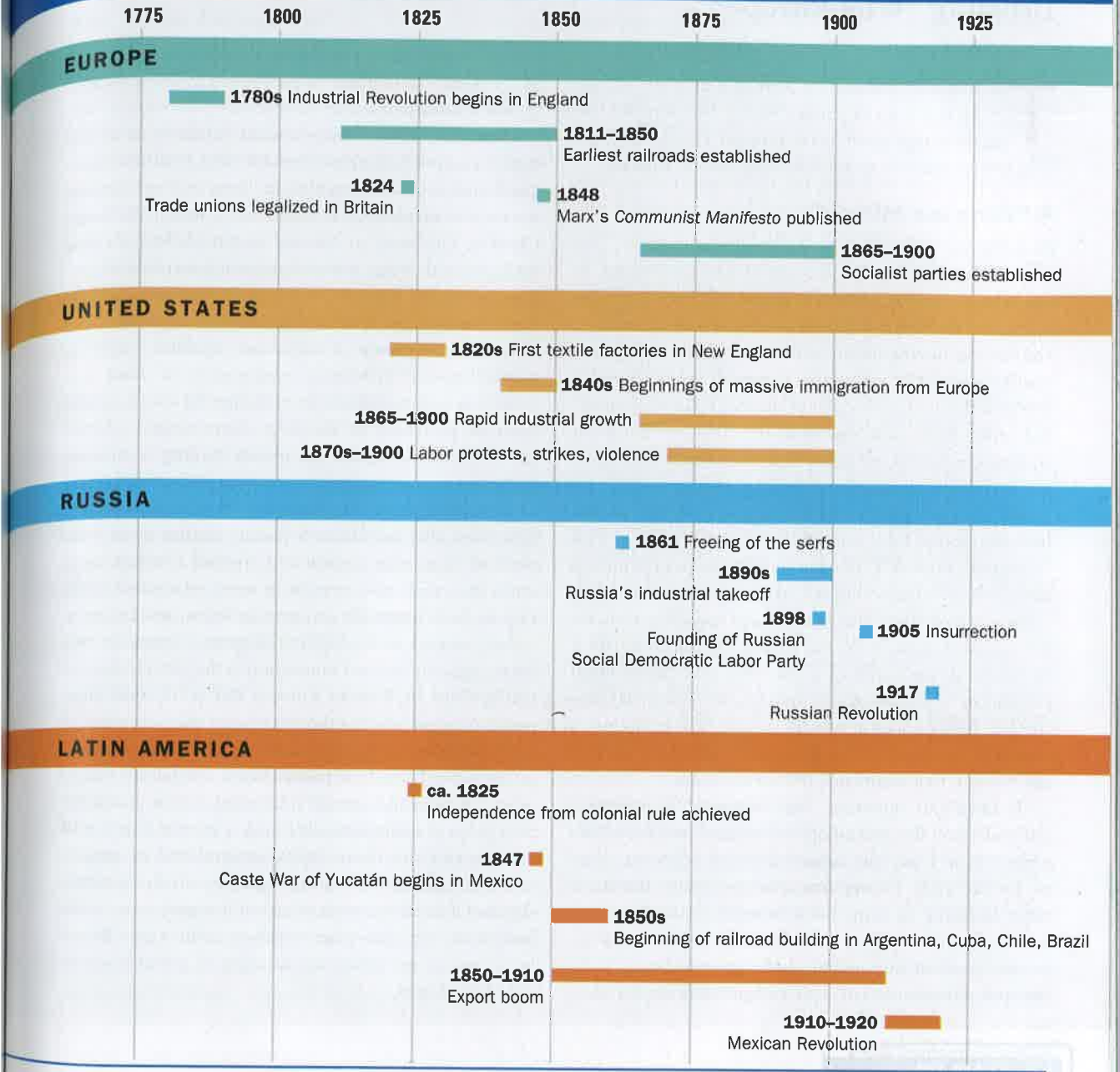
The technological dimension of the Industrial Revolution has been equally significant. Early signs of the technological creativity that spawned the Industrial Revolution appeared in eighteenth-century Britain, where a variety of innovations transformed cotton textile production. It was only in the nineteenth century, though, that Europeans in general and the British in particular more clearly forged ahead of the rest of the world. (See Controversies: Debating "Why Europe?") The great breakthrough was the coal-fired **steam engine**, which provided an inanimate and almost limitless source of power beyond that of wind, water, or muscle and could be used to drive any number of machines as well as locomotives and oceangoing ships. Soon the Industrial Revolution spread beyond the textile industry to iron and steel production, railroads and steamships, food processing, and construction. Later in the nineteenth century, a so-called second Industrial Revolution focused on chemicals, electricity, precision machinery, the telegraph and telephone, rubber, printing, and much more. Agriculture too was affected as mechanical reapers, chemical fertilizers, pesticides, and refrigeration transformed this most ancient of industries. Sustaining this explosion of technological innovation was a "culture of innovation," a widespread and almost obsessive belief that things could be endlessly improved.

AP® EXAM TIP

Understand the differences between the first and second Industrial Revolutions.

Together, these new sources of energy and new technologies gave rise to an enormously increased output of goods and services. In Britain, where the Industrial

Landmarks for Chapter 9



Revolution began, industrial output increased some fiftyfold between 1750 and 1900. It was a wholly unprecedented and previously unimaginable jump in the capacity of human societies to produce wealth, to extend life expectancies, and to increase human numbers. Furthermore, industrialization soon spread beyond Britain to continental Western Europe and then in the second half of the nineteenth

AP® EXAM TIP

Look closely at these Landmarks and notice connections between the Industrial Revolution and political revolutions of this era.

Debating "Why Europe?"

The Industrial Revolution marked a dramatic change in the trajectory of human history. But why did that breakthrough occur first in Europe? This question has long been a source of great controversy among scholars.

A "European Miracle"

Does the answer lie in some unique or "miraculous" feature of European history, culture, or society? Perhaps, as one scholar recently suggested, Europeans have been distinguished for several thousand years by a restless, creative, and freedom-loving culture with its roots in the aristocratic warlike societies of early Indo-European invaders, which rendered them uniquely open to change and development.[5] But critics have questioned both the claims to European cultural uniqueness and causal links between industrialization and developments of the distant past.

Or should we focus more narrowly on the period between about 1400 and 1800 for the origins of this "European miracle"?[6] During those centuries distinctive new forms of landowning and farming practices emerged, especially in Britain, which made land and labor available for capitalist agriculture and enabled the accumulation of wealth in the hands of a few. Was this "agricultural revolution" a prelude to the subsequent "industrial revolution"? Or perhaps it was the Scientific Revolution, a distinctly European event that generated a new view of the cosmos, that stimulated industrialization.

It turns out, however, that industrial technologies derived from the workshops of artisans and craftsmen rather than from the laboratories of scientists. And so by the early twenty-first century, many historians were thinking in terms of a broader cultural pattern, an eighteenth-century "Industrial Enlightenment" in which scientific methods and a general belief in an ordered universe mixed with commitment to the ideas of "progress" and human improvement to foster technological innovation.

And what about Europe's many relatively small and highly competitive states? Perhaps their rivalries stimulated innovation and provided an "insurance against economic and technological stagnation," which the larger Chinese, Ottoman, or Mughal empires lacked. In their struggles with other states, European governments desperately needed revenue, and to get it, European authorities developed an unusual alliance with their merchant classes. Small groups of merchant capitalists might be granted special privileges, monopolies, or even tax-collecting responsibilities in exchange for much-needed loans or payments to the state. Governments granted charters and monopolies to private trading companies, and states founded scientific societies and offered prizes to promote innovation. European merchants and other innovators after the fifteenth century became more independent from state control and enjoyed a higher social status than their counterparts in more established civilizations. Such internally competitive semi-capitalist economies, coupled with a highly competitive system of rival states, arguably fostered innovation in the new civilization taking shape in Western Europe. But at the same time, nearly constant war and the destruction that accompanied it also served as a long-term drain on European resources.

Britain especially benefited from several advantages of the "European Miracle," including a spirit of innovation, a lot of easily accessible coal, a growing consumer market, plentiful cheap capital accumulated in agriculture and trade, and its island geography, which frequently shielded it from the worst effects of Europe's wars. It also had a relatively high-wage workforce, which gave British businesses an extraordinary incentive to invent labor-saving technologies.

AP® EXAM TIP

As always in world history, when a process "goes global" like the Industrial Revolution, pay attention to the social, economic, and political consequences.

century to the United States, Russia, and Japan. In the twentieth century it became a genuinely global process. More than anything else, industrialization marks the past 250 years as a distinct phase of human history.

In the long run, the Industrial Revolution unarguably improved the material conditions of life for much of humankind. But it also unarguably wrought a mounting impact

The "Great Divergence"

But was Europe alone destined to lead the way to modern economic life? To many world historians, such views are both Eurocentric and deterministic; they also fly in the face of much recent research. Historians now know that India, the Islamic world, and especially China had experienced times of great technological and scientific flourishing. For reasons much debated, all of these flowerings of creativity had slowed down considerably or stagnated by the early modern era, when the pace of technological change in Europe began to pick up. But these earlier achievements certainly suggest that Europe was not alone in its capacity for technological innovation.

Nor did Europe enjoy any overall economic advantage as late as 1750. Recent scholars have found rather "a world of surprising resemblances" among major Eurasian societies during the eighteenth century. Economic indicators such as life expectancies, patterns of consumption and nutrition, wage levels, general living standards, widespread free markets, and prosperous merchant communities suggest "a global economic parity" across the major civilizations of Europe and Asia.[7] Thus Europe had no obvious economic lead, even on the eve of the Industrial Revolution. So much for the "European miracle"!

Trade and Empire

But if there was little that was economically distinctive within Europe itself, perhaps it was the spoils of empire and the benefits of global trade after 1500 that allowed Europeans to accumulate the wealth that funded industrial enterprises back home. European empires provided access to an abundance of raw materials—timber, fish, maize, potatoes, slave-produced sugar and cotton—far more than that of other early modern empires. Moreover, these empires generated a global economy that funneled the trade of the world through Europe, offering access to the raw materials and markets of the planet. Demand for Asian goods, including porcelain and especially cotton cloth, also spurred manufacturers in Europe to produce similar items, while production for overseas markets further sparked industry in Europe. The new wealth spawned a growing middle class in Europe whose members bought the products of the Industrial Revolution. As one scholar has put it, "The industrial revolution . . . emerged from the exploitive advantages Europe was already gaining in the world's markets."[8] So rather than something distinctive about European society, perhaps it was Europe's increasing engagement with the wider world that sparked industrialization.

Many or most of these factors likely played some role in Europe's industrialization. But in considering the "Why Europe?" question, historians confront the relative importance of internal and external factors in explaining historical change. Was industrialization primarily spurred by some special combination of elements peculiar to Western Europe, or were broader global relationships of greater significance? Arguments giving great weight to internal features of European life seem to congratulate Europeans on their good fortune or wisdom, while those that contextualize it globally and point to the unique character of European imperial trade and exploitation are rather more critical. Furthermore, the former seem to imply a certain long-term inevitability to European prominence, while the latter see the Industrial Revolution as more of a surprise, the outcome of a unique conjuncture of events . . . in short, luck.

QUESTIONS TO CONSIDER

1. How might your understanding of the Industrial Revolution change if you subscribed to the "European Miracle," the "Great Divergence," or the "Trade and Empire" school of thought?
2. How does this overview of the "Why Europe?" debate shape your understanding of the Industrial Revolution?

on the environment. The massive extraction of nonrenewable raw materials to feed and to fuel industrial machinery—coal, iron ore, petroleum, and much more—altered the landscape in many places. Sewers and industrial waste emptied into rivers, turning them into poisonous cesspools. In 1858, the Thames River running through London smelled so bad that the British House of Commons had to suspend its session. Smoke

AP® Contextualization

Drawing on your prior knowledge about Europe, explain why historians might consider Europe an unlikely place for the Industrial Revolution to have begun.

Producing Gas from Coal Coal was central to the Industrial Revolution. An early industrial process in Britain involved the burning of coal to produce "coal gas," used for public lighting. This image from 1822 shows that process in action at one such production facility in London. Those who stoked the furnaces often developed various lung diseases and died early. (Print Collector/Getty Images)

AP® Analyzing Evidence

How does the image illustrate the social and economic changes that took place during the Industrial Revolution?

AP® DIGGING DEEPER

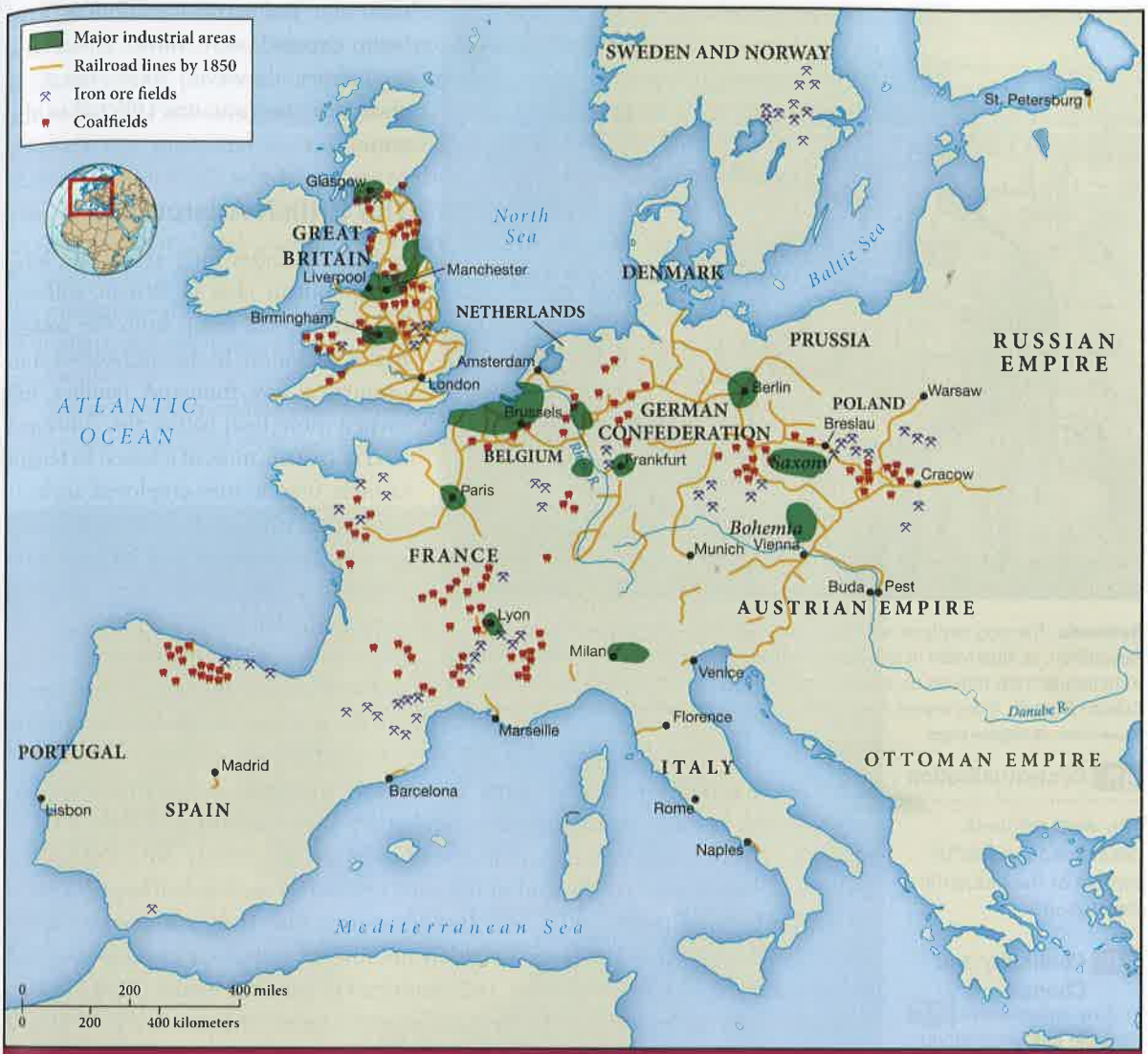
The classical liberalism of Adam Smith and John Stuart Mill, both Englishmen, provided the ideological impetus for the growth of industrial capitalism. Both believed that individuals, unencumbered by the state, should have the liberty to do with their wealth and their lives as they please.

from coal-fired industries and domestic use polluted the air in urban areas and sharply increased the incidence of respiratory illness. (See the opening image to this chapter.) For many historians, the Industrial Revolution marked a new era in both human history and the history of the planet that scientists increasingly call the Anthropocene, or the "age of man." More and more, human industrial activity left a mark not only on human society but also on the ecological, atmospheric, and geological history of the earth.

The First Industrial Society

Wherever it took hold, the Industrial Revolution generated, within a century or less, an economic miracle, at least in comparison with earlier technologies. The **British textile industry**, which used 52 million pounds of cotton in 1800, consumed 588 million pounds in 1850, as multiple technological innovations and factory-based production vastly increased output. Britain's production of coal likewise soared from 5.23 million tons in 1750 to 68.4 million tons a century later.[9] Railroads crisscrossed Britain and much of Europe like a giant spider web (see Map 9.1). Most of this dramatic increase in production occurred in mining, manufacturing, and services. Thus agriculture, for millennia the overwhelmingly dominant economic sector in every civilization, shrank in relative importance. In Britain, for example, agriculture generated only 8 percent of national income in 1891 and employed fewer than 8 percent of working Britons in 1914. Accompanying this vast economic change was an epic transformation of social life. "In two centuries," wrote one prominent historian, "daily life changed more than it had in the 7,000 years before."[10] Nowhere were the revolutionary dimensions of industrialization more apparent than in Great Britain, the world's first industrial society.

The social transformation of the Industrial Revolution both destroyed and created. Referring to the impact of the Industrial Revolution on British society, historian Eric Hobsbawm wrote: "In its initial stages it destroyed their old ways of living and left them free to discover or make for themselves new ones, if they could and knew how. But it rarely told them how to set about it."[11] For many people, it was an enormously painful, even traumatic process, full of social conflict, insecurity, and false starts even as it offered new opportunities, an eventually higher standard of living, and greater participation in public life. The human gains and losses associated



MAPPING HISTORY

Map 9.1 The Early Phase of Europe's Industrial Revolution

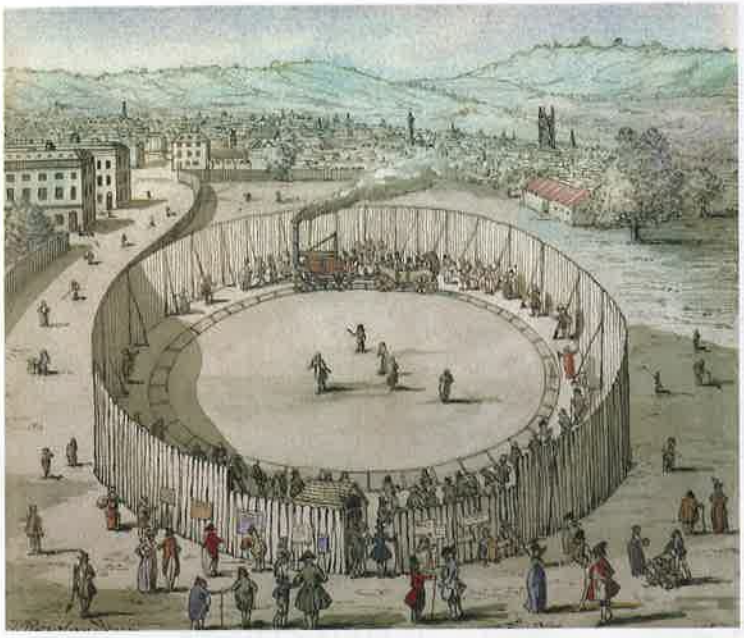
From its beginning in Great Britain, industrialization had spread by 1850 across Western Europe to include parts of France, Germany, Belgium, Bohemia, and Italy.

READING THE MAP: Which industrialized regions are most far removed from sources of coal and iron?

INTERPRETING THE MAP: Note the relationship between sources of coal and iron, railways, and industrialized regions. Then identify regions where the addition of further railway lines might facilitate industrialization.

AP® Analyzing Evidence

Based on your observations, what is the relationship between areas of natural resources and the growth of industrial centers?



Railroads The popularity of railroads, long a symbol of the Industrial Revolution, is illustrated in this early nineteenth-century watercolor that shows a miniature train offered as a paid amusement for enthusiasts in London's Euston Square. (*Richard Trevithick's Railroad, Euston Square in 1809*, by Thomas Rowlandson [1756-1827]/Science Museum, London, UK/Bridgeman Images)

AP® Contextualization

Why were railroads considered a powerful symbol of the Industrial Revolution?

AP® Continuity and Change

How did industrial production transform the social position of England's aristocratic class?

AP® EXAM TIP

Pay attention to changes in British society due to the Industrial Revolution, because they will also occur throughout the industrialized world.

with the Industrial Revolution have been debated ever since. Amid the arguments, however, one thing is clear: not everyone was affected in the same way.

The British Aristocracy

Individual landowning aristocrats, long the dominant class in Britain, suffered little in material terms from the Industrial Revolution. In the mid-nineteenth century, a few thousand families still owned more than half of the cultivated land in Britain, most of it leased to tenant farmers, who in turn employed agricultural wage laborers to work it. Rapidly growing population and urbanization sustained a demand for food products grown on that land. For most of the nineteenth century, landowners continued to dominate the British Parliament.

As a class, however, the British aristocracy declined as a result of the Industrial Revolution, as have large landowners in every industrial society. As urban wealth became more important, landed aristocrats had to make way for the up-and-coming businessmen, manufacturers, and bankers, newly enriched by the Industrial Revolution. By the end of the century, landownership had largely ceased to be the basis of great wealth, and businessmen, rather than aristocrats, led the major political parties. Even so, the titled nobility of dukes, earls, viscounts, and barons retained great social prestige and considerable personal wealth. Many among them found an outlet for their energies and opportunities for status and enrichment in the vast domains of the British Empire, where they went as colonial administrators or settlers. Famously described as a "system of outdoor relief for the aristocracy," the empire provided a cushion for a declining class.

The Middle Classes

Those who benefited most conspicuously from industrialization were members of that amorphous group known as the middle class. At its upper levels, this middle class contained extremely wealthy factory and mine owners, bankers, and merchants. Such rising businessmen readily assimilated into aristocratic life, buying country houses, obtaining seats in Parliament, sending their sons to Oxford or Cambridge University, and gratefully accepting titles of nobility from Queen Victoria.

Far more numerous were the smaller businessmen, doctors, lawyers, engineers, teachers, journalists, scientists, and other professionals required in any industrial society. Such people set the tone for a distinctly **middle-class society** with its own values and outlooks. Politically they were liberals, favoring constitutional government, private property, free trade, and social reform within limits. Their agitation resulted in the Reform Bill of 1832, which broadened the right to vote to many men of the middle class, but not to middle-class women. Ideas of thrift and hard work, a rigid morality, "respectability," and cleanliness characterized middle-class culture. According to Samuel Smiles's famous book *Self-Help*, an enterprising spirit was what distinguished the prosperous middle class from Britain's poor. The misery of the poorer classes was "voluntary and self-imposed—the results of idleness, thriftlessness, intemperance, and misconduct."[12]

Women in such middle-class families were increasingly cast as homemakers, wives, and mothers, charged with creating an emotional haven for their men and a refuge

AP Causation

What was the effect of industrial production on England's middle class?

AP Continuity and Change

What changes in middle-class gender roles and family dynamics occurred during the Industrial Revolution?

The Industrial Middle Class This late nineteenth-century painting shows a prosperous French middle-class family, attended by a servant. (*Family Reunion at the Home of Madame Adolphe Brisson, 1893*, by Marcel André Baschet [1862–1941]/Château de Versailles, France/Bridgeman Images)

AP Continuity and Change

In what ways does this painting reflect changes to society and gender brought about by industrialization? What features in the painting help illustrate the newfound prosperity of middle-class families?

from a heartless and cutthroat capitalist world. They were also expected to be the moral centers of family life, the educators of "respectability," and the managers of household consumption as "shopping"—a new concept in eighteenth-century Britain—became a central activity for the middle classes. An **ideology of domesticity** defined homemaking, child rearing, charitable endeavors, and "refined" activities such as embroidery, music, and drawing as the proper sphere for women, while paid employment and the public sphere of life outside the home beckoned to men.

AP® EXAM TIP
You must know how the Industrial Revolution changed gender roles beginning in the early nineteenth century.

Male elites in many civilizations had long established their status by detaching women from productive labor. The new wealth of the Industrial Revolution now allowed larger numbers of families to aspire to that kind of status. With her husband as "provider," such a woman was now a "lady." "She must not work for profit," wrote the Englishwoman Margaretta Greg in 1853, "or engage in any occupation that money can command."[13] Employing even one servant became a proud marker of such middle-class status. But the withdrawal of middle-class women from the labor force turned out to be only a temporary phenomenon. By the late nineteenth century, some middle-class women began to enter the teaching, clerical, and nursing professions, and in the second half of the twentieth century, many more flooded into the labor force. By contrast, the withdrawal of children from productive labor into schools has proved a more enduring phenomenon as industrial economies increasingly required a more educated workforce.

As Britain's industrial economy matured, it also gave rise to a sizable **lower middle class**, which included people employed in the growing service sector as clerks, salespeople, bank tellers, hotel staff, secretaries, telephone operators, police officers, and the like. By the end of the nineteenth century, this growing segment of the middle class represented about 20 percent of Britain's population and provided new employment opportunities for women as well as men. In just twenty years (1881–1901), the number of female secretaries in Britain rose from 7,000 to 90,000. Almost all were single and expected to return to the home after marriage. For both men and women, such employment represented a claim on membership in the larger middle class and a means of distinguishing themselves clearly from a working class tainted by manual labor. The mounting ability of these middle classes to consume all manner of material goods—and their appetite for doing so—were among the factors that sustained the continuing growth of the industrializing process.

The Laboring Classes

AP® EXAM TIP
How the Industrial Revolution affected the lower classes—for better and worse—is a very important topic in AP® World History.

The overwhelming majority of Britain's nineteenth-century population—some 70 percent or more—were neither aristocrats nor members of the middle classes. They were manual workers in the mines, ports, factories, construction sites, workshops, and farms of an industrializing Britain. Although their conditions varied considerably and changed over time, it was the **laboring classes** who suffered most and benefited least from the epic transformations of the Industrial Revolution. Their efforts to accommodate, resist, protest, and change those conditions contributed much to the texture of the first industrial society.

The lives of the laboring classes were shaped primarily by the rapid urbanization of the industrial era. Liverpool's population alone grew from 77,000 to 400,000 in the first half of the nineteenth century. By 1851, a majority of Britain's population lived in towns and cities, an enormous change from the overwhelmingly rural life of almost all previous civilizations. By the end of the century, London was the world's largest city, with more than 6 million inhabitants.

These cities were vastly overcrowded and smoky, with wholly insufficient sanitation, periodic epidemics, endless row houses and warehouses, few public services or open spaces, and inadequate and often-polluted water supplies. This was the environment in which most urban workers lived in the first half of the nineteenth century. By 1850, the average life expectancy in England was only 39.5 years, less than it had been some three centuries earlier. Nor was there much personal contact between the rich and the poor of industrial cities. Benjamin Disraeli's novel *Sybil*, published in 1845, described these two ends of the social spectrum as "two nations between whom there is no intercourse and no sympathy; who are ignorant of each other's habits, thoughts and feelings, as if they were dwellers in different zones or inhabitants of different planets."

AP® Causation

How were the lives of the laboring masses negatively impacted by the Industrial Revolution?

AP® Causation

How does this image reveal the consequences of the rapid urbanization that occurred in industrial cities? To what extent were these consequences class specific?

The industrial factories to which growing numbers of desperate people looked for employment offered a work environment far different from the artisan's shop or the tenant's farm. Long hours, low wages, and child labor were nothing new for the poor, but the routine and monotony of work, dictated by the factory whistle and the needs of machines, imposed novel and highly unwelcome conditions of labor. Also objectionable were the direct and constant supervision and the rules and fines aimed at enforcing work discipline. In addition, the ups and downs of a capitalist economy made industrial work insecure as well as onerous.

In the early decades of the nineteenth century, Britain's industrialists favored girls and young unmarried women as employees in the textile mills, for they were often willing to accept lower wages, while male owners believed them to be both docile and more suitable for repetitive tasks such as tending machines. A gendered hierarchy of labor emerged in these factories, with men in supervisory and more skilled positions, while women occupied the less skilled and

The Urban Poor of Industrial Britain This 1866 political cartoon shows an impoverished urban family forced to draw its drinking water from a polluted public well, while a figure of Death operates the pump. (Sarin Images/Granger, NYC – All rights reserved)

ZOOMING IN

The English Luddites and Machine Breaking

If you do Not Cause those Dressing Machines to be Remov'd Within the Bounds of Seven Days . . . your factory and all that it Contains Will and Shall Surely Be Set on fire . . . it is Not our Desire to Do you the Least Injury, But We are fully Determin'd to Destroy Both Dressing Machines and Steam Looms.[14]

Luddites smashing a loom.

Between 1811 and 1813, this kind of warning was sent to hundreds of English workshops in the woolen and cotton industry, where more efficient machines, some of them steam-powered, threatened the jobs and livelihoods of workers. Over and over, that threat was carried out as well-organized bands of skilled artisans destroyed the offending machines, burned buildings, and on occasion attacked employers. These were the Luddites, taking their name from a mythical Robin Hood–like figure, Ned Ludd. A song called "General Ludd's Triumph" expressed their sentiments: "These Engines of mischief were sentenced to die / By unanimous vote of the Trade / And Ludd who can all opposition defy / Was the Grand executioner made."

So widespread and serious was this Luddite uprising that the British government sent 12,000 troops to suppress it, more than it was then devoting to the struggle against Napoleon in continental Europe. And a new law, rushed through Parliament as an "emergency measure" in 1812, made those who destroyed mechanized looms subject to the death penalty. Some sixty to seventy alleged Luddites were in fact hanged, and sometimes beheaded as well, for machine breaking.

In the governing circles of England, Luddism was widely regarded as blind protest, an outrageous, unthinking, and futile resistance to progress. It has remained in more recent times a term of insult applied to those who resist or reject technological innovation. And yet, a closer look suggests that the Luddites deserve some sympathy as an understandable response to a painful transformation of social life when few alternatives for expressing grievances were available.

At the time of the Luddite uprising, England was involved in an increasingly unpopular war with Napoleon's

photo: Chronicle/Alamy

"lighter" jobs that offered little opportunity for advancement. Nor were women welcome in the unions that eventually offered men some ability to shape the conditions under which they labored.

Thus, unlike their middle-class counterparts, many girls and young women of the laboring classes engaged in industrial work or found jobs as domestic servants for upper- and middle-class families to supplement meager family incomes. But after marriage, they too usually left outside paid employment because a man who could not support his wife was widely considered a failure. Within the home, however, many working-class women continued to earn money by taking in boarders, doing laundry, or sewing clothes in addition to the domestic and child-rearing responsibilities long assigned to women.

France, and mutual blockades substantially reduced trade and hurt the textile industry. The country was also in the early phase of an Industrial Revolution in which mechanized production was replacing skilled artisan labor. All of this, plus some bad weather and poor harvests, combined to generate real economic hardship, unemployment, and hunger. Bread riots and various protests against high prices proliferated.

Furthermore, English elites were embracing new laissez-faire, or free market, economic principles, which eroded customary protections for the poor and working classes. Over the previous several decades, many laws that had regulated wages and apprenticeships and prohibited certain laborsaving machines had been repealed, despite repeated workers' appeals to Parliament to maintain some minimal protections for their older way of life. A further act of Parliament in 1799 had forbidden trade unions and collective bargaining. In these circumstances, some form of direct action is hardly surprising.

At one level, the Luddite machine-breaking movement represented "collective bargaining by riot," a way of pressuring employers when legal negotiations with them had been outlawed. And the issues involved more than laborsaving machines. Luddites also argued for price reductions, minimum wages, and prohibitions on the flooding of their industry by unapprenticed workers. They wanted to return to a time when "full fashioned work at the old fashioned price is established by custom and law," according to one of their songs. More generally, Luddites sought to preserve elements of an older way of life in which industry existed to provide a livelihood for workers, in which men could take pride in their craft, in which government and employers felt some paternalistic responsibility to the lower classes, and in which journeymen workers felt some bonds of attachment to a larger social and moral order. All of this was rapidly eroding in the new era of capitalist industrialization. In these ways, the Luddite movement looked backward to idealized memories of an earlier time.

And yet in other ways, the rebels anticipated the future with their demands for a minimum wage and an end to child labor, their concern about inferior-quality products produced by machines, and their desire to organize trade unions. At the height of the Luddite movement, some among them began to move beyond local industrial action toward a "general insurrection" that might bring real political change to the entire country. In one letter from a Luddite in 1812, the writer expressed "hope for assistance from the French emperor [Napoleon] in shaking off the yoke of the rottenest, wickedest, and most tyranious government that ever existed." He continued, "Then we will be governed by a just republic."

After 1813, the organized Luddite movement faded away. But it serves as a cautionary reminder that what is hailed as progress claims victims as well as beneficiaries.

QUESTIONS

To what extent did the concerns of the Luddites come to pass as the Industrial Revolution unfolded? How does your understanding of the Luddites affect your posture toward technological change in our time?

Social Protest

For workers of the laboring classes, industrial life "was a stony desert, which they had to make habitable by their own efforts."[15] Such efforts took many forms. By 1815, about 1 million workers, mostly artisans, had created a variety of "friendly societies." With dues contributed by members, these working-class self-help groups provided insurance against sickness, a decent funeral, and an opportunity for social life in an otherwise-bleak environment. Other skilled artisans who had been displaced by machine-produced goods and forbidden to organize in legal unions sometimes wrecked the offending machinery and burned the mills that had taken their jobs. (See Zooming In: The English Luddites and Machine Breaking, page 400.) The class

AP® EXAM TIP

Understand how the condition of the laboring classes led to political reforms and the development of economic ideologies.

consciousness of working people was such that one police informer reported that "most every creature of the lower order both in town and country are on their side."[16] Others acted within the political arena by joining movements aimed at obtaining the vote for working-class men, a goal that was gradually achieved in the second half of the nineteenth century. When trade unions were legalized in 1824, growing numbers of factory workers joined these associations in their efforts to achieve better wages and working conditions. Initially their strikes, attempts at nationwide organization, and threat of violence made them fearful indeed to the upper classes. One British newspaper in 1834 described unions as "the most dangerous institutions that were ever permitted to take root, under shelter of law, in any country,"[17] although they later became rather more "respectable" organizations.

Socialist ideas of various kinds gradually spread within the working class, challenging the assumptions of a capitalist society. Robert Owen (1771–1858), a wealthy British cotton textile manufacturer, urged the creation of small industrial communities where workers and their families would be well treated. He established one such community, with a ten-hour workday, spacious housing, decent wages, and education for children, at his mill in New Lanark in Scotland.

AP® EXAM TIP

You may see AP® exam questions on Marx's economic theories and their application in later world history.

Of more lasting significance was the socialism of **Karl Marx** (1818–1883). German by birth, Marx spent much of his life in England, where he witnessed the brutal conditions of Britain's Industrial Revolution and wrote voluminously about history and economics. His probing analysis led him to conclude that industrial capitalism was an inherently unstable system, doomed to collapse in a revolutionary upheaval that would give birth to a classless socialist society, thus ending forever the ancient conflict between rich and poor. (See Working with Evidence, page 423, for the various expressions of a socialist tradition inspired by Marx.)

AP® Contextualization

In what situations would the ideas of Karl Marx have the most appeal among the lower classes?

In Marx's writings, the combined impact of Europe's industrial, political, and scientific revolutions found expression. Industrialization created both the social conditions against which Marx protested so bitterly and the enormous wealth he felt would make socialism possible. The French Revolution, still a living memory in Marx's youth, provided evidence that grand upheavals, giving rise to new societies, had in fact taken place and could do so again. Moreover, Marx regarded himself as a scientist, discovering the laws of social development in much the same fashion as Newton discovered the laws of motion. His was therefore a "scientific socialism," embedded in these laws of historical change; revolution was a certainty and the socialist future was inevitable.

It was a grand, compelling, prophetic, utopian vision of human freedom and community—and it inspired socialist movements of workers and intellectuals amid the grim harshness of Europe's industrialization in the second half of the nineteenth century. Socialists established political parties in most European states and linked them together in international organizations as well. These parties recruited members, contested elections as they gained the right to vote, agitated for reforms, and in some cases plotted revolution.

In the later decades of the nineteenth century, such ideas echoed among more radical trade unionists and some middle-class intellectuals in Britain, and even more so in a rapidly industrializing Germany and elsewhere. By then, however, the British working-class movement was not overtly revolutionary. When a working-class political party, the **Labour Party**, was established in the 1890s, it advocated a reformist program and a peaceful democratic transition to socialism, largely rejecting the class struggle and revolutionary emphasis of classical Marxism. Generally known as "social democracy," this approach to socialism was especially prominent in Germany during the late nineteenth century and spread more widely in the twentieth century, when it came into conflict with the more violent and revolutionary movements calling themselves "communist."

Improving material conditions during the second half of the nineteenth century helped move the working-class movement in Britain, Germany, and elsewhere away from a revolutionary posture. Marx had expected industrial capitalist societies to polarize into a small wealthy class and a huge and increasingly impoverished proletariat. However, standing between "the captains of industry" and the workers was a sizable middle and lower middle class, constituting perhaps 30 percent of the population, most of whom were not really wealthy but were immensely proud that they were not manual laborers. Marx had not foreseen the development of this intermediate social group, nor had he imagined that workers could better their standard of living within a capitalist framework. But they did. Wages rose under pressure from unions; cheap imported food improved working-class diets; infant mortality rates fell; and shops and chain stores catering to working-class families multiplied. As English male workers gradually obtained the right to vote, politicians had an incentive to legislate in their favor, by abolishing child labor, regulating factory conditions, and even, in 1911, inaugurating a system of relief for the unemployed. Sanitary reform considerably cleaned up the "filth and stink" of early nineteenth-century cities, and urban parks made a modest appearance. Contrary to Marx's expectations, capitalist societies demonstrated some capacity for reform.

Further eroding working-class radicalism was a growing sense of nationalism, which bound workers in particular countries to their middle-class employers and compatriots, offsetting to some extent the economic and social antagonism

The Socialist Threat The growth of a socialist movement was immensely threatening to many elements of the established order in Europe. This image from a British Conservative Party poster in 1909 shows a demonic socialist figure strangling a pure female image of Great Britain, wearing a belt labeled "prosperity." (Pictorial Press LTD/Alamy)

AP® Analyzing Evidence

What social classes would have been most likely to support the propaganda image above?

AP® EXAM TIP

Understand how governments in Western Europe responded to Marx's ideas.

between them. When World War I broke out, the "workers of the world," far from uniting against their bourgeois enemies as Marx had urged them, instead set off to slaughter one another in enormous numbers on the battlefields of Europe. National loyalty had trumped class loyalty.

Nonetheless, as the twentieth century dawned, industrial Britain was hardly a stable or contented society. Immense inequalities still separated the classes. Some 40 percent of the working class continued to live in conditions then described as "poverty." A mounting wave of strikes from 1910 to 1913 testified to the intensity of class conflict. The Labour Party was becoming a major force in Parliament. Some socialists and some feminists were becoming radicalized. "Wisps of violence hung in the English air," wrote Eric Hobsbawm, "symptoms of a crisis in economy and society, which the [country's] self-confident opulence . . . could not quite conceal."[18] The world's first industrial society remained dissatisfied and conflicted.

AP® Contextualization

How could nationalism lessen the potential for socialist revolutions in some countries?

It was also a society in economic decline relative to industrial newcomers such as Germany and the United States. Britain paid a price for its early lead, for its businessmen became committed to machinery that became obsolete as the century progressed. Latecomers invested in more modern equipment and in various ways had surpassed the British by the early twentieth century.

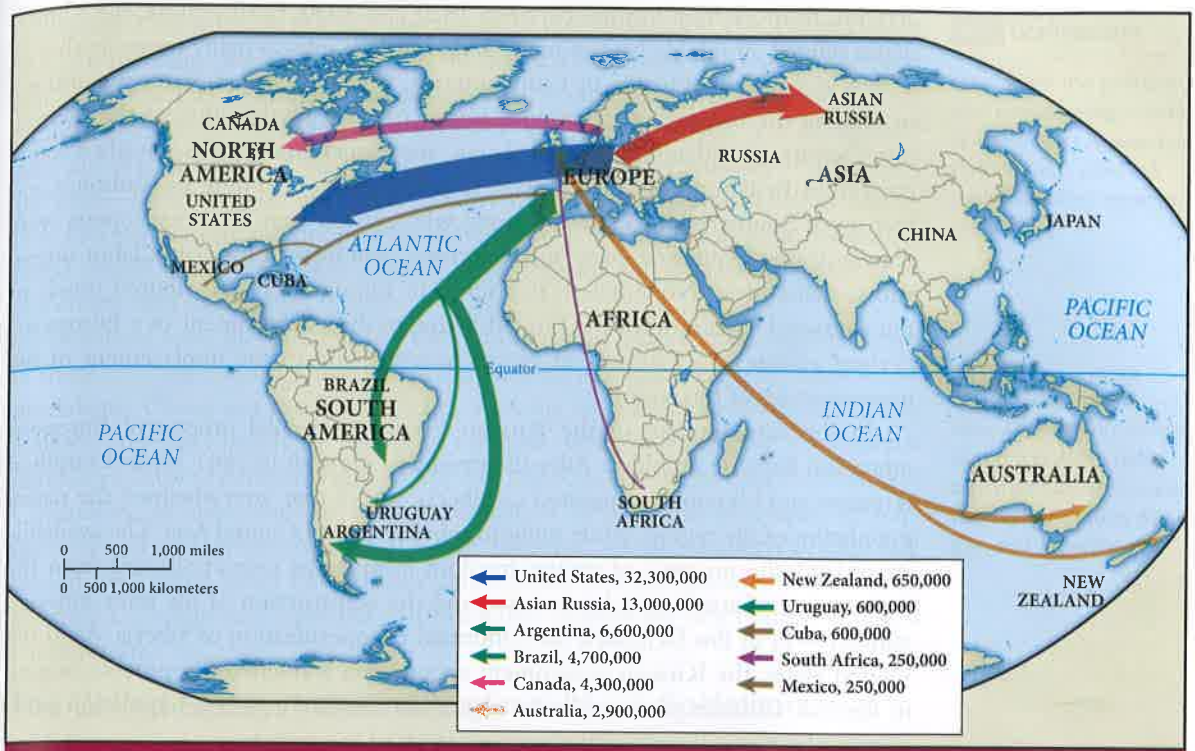
Europeans in Motion

AP® EXAM TIP

Understand the different patterns of migrations initiated by the Industrial Revolution.

Europe's Industrial Revolution prompted a massive migratory process that uprooted many millions, setting them in motion both internally and around the globe. Within Europe itself, the movement of men, women, and families from the countryside to the cities involved half or more of the region's people by the mid-nineteenth century. More significant for world history was the exodus between 1815 and 1939 of fully 20 percent of Europe's population, some 50 to 55 million people, who left home for the Americas, Australia, New Zealand, South Africa, and elsewhere (see Map 9.2). They were pushed by poverty, a rapidly growing population, and the displacement of peasant farming and artisan manufacturing. And they were pulled abroad by the enormous demand for labor overseas, the ready availability of land in some places, and the relatively cheap transportation of railroads and steamships. But not all found a satisfactory life in their new homes, and perhaps 7 million returned to Europe.[19]

This huge process had a transformative global impact, temporarily increasing Europe's share of the world's population and scattering Europeans around the world. In 1800, less than 1 percent of the total world population consisted of overseas Europeans and their descendants; by 1930, they represented 11 percent.[20] In particular regions, the impact was profound. Australia and New Zealand became settler colonies, outposts of European civilization in the South Pacific that overwhelmed their native populations through conquest, acquisition of their lands, and disease. By the end of the nineteenth century, New Zealand's European population,



MAPPING HISTORY

Map 9.2 European Migration in the Industrial Age

The Industrial Revolution not only transformed European society but also scattered millions of Europeans to the far corners of the world.

READING THE MAP: Which continent received the fewest European migrants?

INTERPRETING THE MAP: Which regions of the world were most affected by European emigration? Which regions were little affected? How might you explain the variations?

AP® Causation

What aspects of the Industrial Revolution facilitated the migration of Europeans to other parts of the world?

based on immigration of free people, outnumbered the native Maori by 700,000 to 40,000. Smaller numbers of Europeans found their way to South Africa, Kenya, Rhodesia, Algeria, and elsewhere, where they injected a sharp racial divide into those colonized territories.

But it was the Americas that felt the brunt of this huge movement of people. Latin America received about 20 percent of the European migratory stream, mostly from Italy, Spain, and Portugal, with Argentina and Brazil accounting for some 80 percent of those immigrants. Considered "white," they enhanced the social weight of the European element in those countries and thus enjoyed economic advantages over the mixed-race, Indian, and African populations.

In several ways the immigrant experience in the United States was distinctive. It was far larger and more diverse than elsewhere, with some 32 million newcomers

arriving from all over Europe between 1820 and 1930. Furthermore, the United States offered affordable land to many and industrial jobs to many more, neither of which was widely available in Latin America. And the United States was unique in turning the immigrant experience into a national myth—that of the melting pot. Despite this ideology of assimilation, the earlier immigrants, mostly Protestants from Britain and Germany, were anything but welcoming to Catholics and Jews from Southern and Eastern Europe who arrived later. The newcomers were seen as distinctly inferior, even "un-American," and blamed for crime, labor unrest, and socialist ideas. Nonetheless, this surge of immigration contributed much to the westward expansion of the United States, to the establishment of a European-derived culture in a vast area of North America, and to the displacement of the native peoples of the region.

In the vast domains of the Russian Empire, a parallel process of European migration likewise unfolded. After the freeing of the serfs in 1861, some 13 million Russians and Ukrainians migrated to Siberia, where they overwhelmed the native population of the region, while millions more settled in Central Asia. The availability of land, the prospect of greater freedom from tsarist restrictions and from the exploitation of aristocratic landowners, and the construction of the trans-Siberian railroad—all of this facilitated the continued Europeanization of Siberia. As in the United States, the Russian government encouraged and aided this process, hoping to forestall Chinese pressures in the region and relieve growing population pressures in the more densely settled western lands of the empire.

Variations on a Theme: Industrialization in the United States and Russia

AP® EXAM TIP
Be prepared to compare examples of industrialization that were state sponsored with those that were not.

Not for long was the Industrial Revolution confined to Britain. It soon spread to continental Western Europe, and by the end of the nineteenth century it was well under way in the United States, Russia, and Japan. The globalization of industrialization had begun. Everywhere it took hold, industrialization bore a range of broadly similar outcomes. New technologies and sources of energy generated vast increases in production and spawned an unprecedented urbanization as well. Class structures changed as aristocrats, artisans, and peasants declined as classes, while the middle classes and a factory working class grew in numbers and social prominence. Middle-class women generally withdrew from paid labor altogether, and their working-class counterparts sought to do so after marriage. Working women usually received lower wages than their male counterparts, had difficulty joining unions, and were accused of taking jobs from men. Working-class frustration and anger gave rise to trade unions and socialist movements, injecting a new element of social conflict into industrial societies.

Nevertheless, different histories, cultures, and societies ensured that the Industrial Revolution unfolded variously in the diverse countries in which it became

established. Differences in the pace and timing of industrialization, the size and shape of major industries, the role of the state, the political expression of social conflict, and many other factors have made this process rich in comparative possibilities. French industrialization, for example, occurred more slowly and perhaps less disruptively than did that of Britain. Germany focused initially on heavy industry—iron, steel, and coal—rather than on the textile industry with which Britain had begun. Moreover, German industrialization was far more highly concentrated in huge companies called cartels, and it generated a rather more militant and Marxist-oriented labor movement than in Britain.

Nowhere were the variations in the industrializing process more apparent than in those two vast countries that lay on the periphery of Europe. To the west across the Atlantic Ocean was the United States, a young, vigorous, democratic, expanding country, populated largely by people of European descent, along with a substantial number of slaves of African origin. To the east was Russia, with its Eastern Orthodox Christianity, an autocratic tsar, a huge population of serfs, and an empire stretching across all of northern Asia. By the early twentieth century, industrialization had turned the United States into a major global power and had spawned in Russia an enormous revolutionary upheaval that made that country the first outpost of global communism.

AP® Comparison

How might the political and social backgrounds of the United States and Russia have affected their industrial development?

AP® Comparison

How were the outcomes of the Industrial Revolution similar in Europe, the United States, Russia, and Japan?

The United States: Industrialization without Socialism

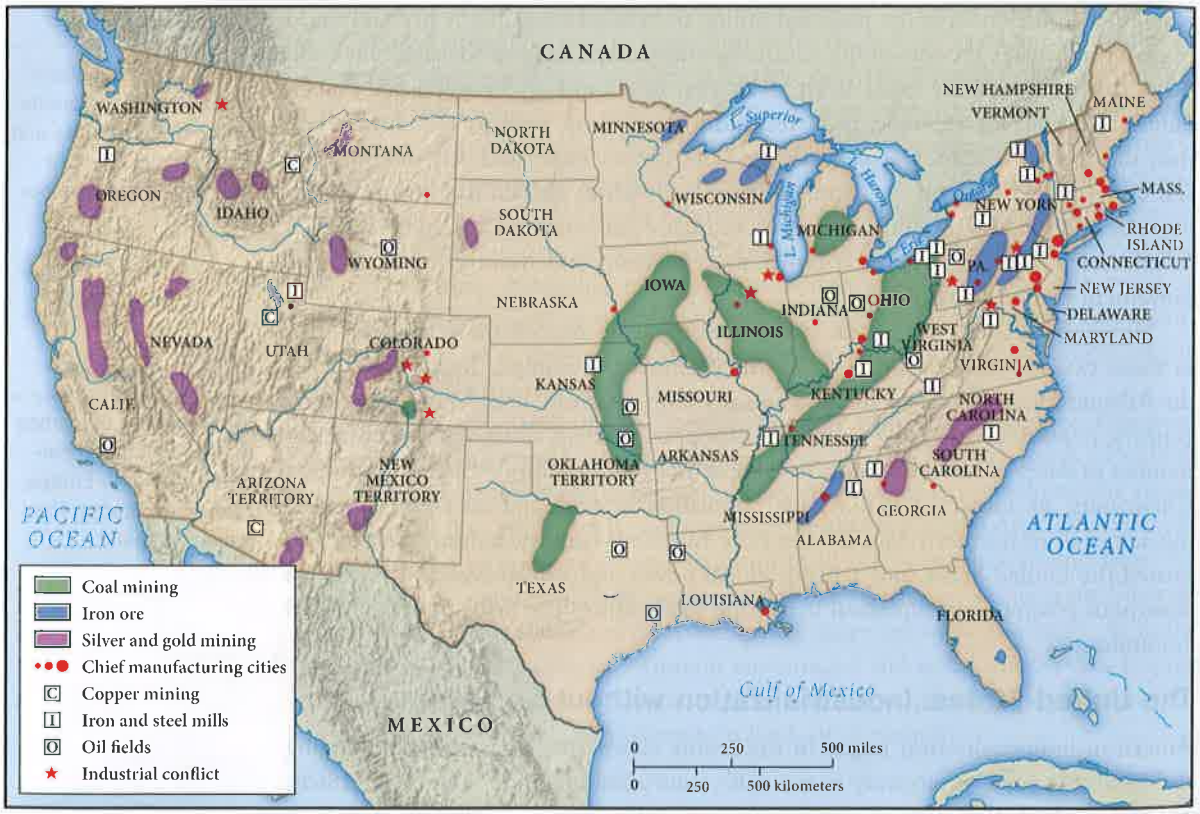
American industrialization began in the textile factories of New England during the 1820s but grew explosively in the half century following the Civil War (1861–1865) (see Map 9.3). The country's huge size, the ready availability of natural resources, its expanding domestic market, and its relative political stability combined to make the United States the world's leading industrial power by 1914. At that time, it produced 36 percent of the world's manufactured goods, compared to 16 percent for Germany, 14 percent for Great Britain, and 6 percent for France. Furthermore, U.S. industrialization was closely linked to that of Europe. About one-third of the capital investment that financed its remarkable growth came from British, French, and German capitalists. But unlike Latin America, which also received much foreign investment, the United States was able to use those funds to generate an independent Industrial Revolution of its own.

As in other later industrializing countries, the U.S. government played an important role, though less directly than in Germany or Japan. Tax breaks, huge grants of public land to the railroad companies, laws enabling the easy formation of corporations, and the absence of much overt regulation of industry all fostered the rise of very large business enterprises. The U.S. Steel Corporation, for example, by 1901 had an annual budget three times the size of the federal government's budget. In this respect, the United States followed the pattern of Germany but differed from that of France and Britain, where family businesses still predominated.

AP® Comparison

How did the process of industrialization in the United States differ from the process of industrialization in Russia?

The United States also pioneered techniques of mass production, using interchangeable parts, the assembly line, and "scientific management" to produce for a



Map 9.3 The Industrial United States in 1900

By the early twentieth century, manufacturing industries were largely in the Northeast and Midwest, whereas mining operations were more widely scattered across the country.

AP® Comparison

Based on your observations of Map 9.3 and Map 9.1 on page 395, compare the advantages of Europe and the United States in the process of industrialization.

mass market. The nation's advertising agencies, Sears Roebuck's and Montgomery Ward's mail-order catalogs, and urban department stores generated a middle-class "culture of consumption." When the industrialist Henry Ford in the early twentieth century began producing the Model T at a price that many ordinary people could afford, he famously declared: "I am going to democratize the automobile." More so than in Europe, with its aristocratic traditions, self-made American industrialists of fabulous wealth such as Henry Ford, Andrew Carnegie, and John D. Rockefeller became cultural heroes, widely admired as models of what anyone could achieve with daring and hard work in a land of endless opportunity.

AP® Contextualization

Why did Marxist socialism not develop in the United States?

Nevertheless, well before the first Model T rolled off the assembly line, serious social divisions of a kind common to European industrial societies mounted. Preindustrial America had boasted of a relative social equality, quite unlike that of Europe, but by the end of the nineteenth century a widening gap separated the classes. In Carnegie's Homestead steel plant near Pittsburgh, employees worked every day except Christmas and the Fourth of July, often for twelve hours a day. In

Manhattan, where millions of European immigrants disembarked, many lived in five- or six-story buildings with four families and two toilets on each floor. In every large city, such conditions prevailed close by the mansions of elite neighborhoods. To some, the contrast was a betrayal of American ideals, while others saw it as a natural outcome of competition and "the survival of the fittest."

As elsewhere, such conditions generated much labor protest, the formation of unions, strikes, and sometimes violence. In 1877, when the eastern railroads announced a 10 percent wage cut for their workers, strikers disrupted rail service across the eastern half of the country, smashed equipment, and rioted. Both state militias and federal troops were called out to put down the movement. Class consciousness and class conflict were intense in the industrial America of the late nineteenth and early twentieth centuries.

Unlike in many European countries, however, no major political party emerged in the United States to represent the interests of the working class. Nor did the ideas of socialism, especially those of Marxism, appeal to American workers nearly as much as they did to European laborers. At its high point, the Socialist Party of America garnered just 6 percent of the vote for its presidential candidate in the 1912 election, whereas socialists at the time held more seats in Germany's Parliament than any other party. Even in the depths of the Great Depression of the 1930s, no major socialist movement emerged to champion American workers. How might we explain the relative weakness of **socialism in the United States**?

One answer lies in the relative conservatism of major American union organizations, especially the American Federation of Labor. Its focus on skilled workers excluded the more radical unskilled laborers, and its refusal to align with any party limited its influence in the political arena. Furthermore, massive immigration from Europe, beginning in the 1840s, created a very diverse industrial labor force on top of the country's sharp racial divide. This diversity contrasted sharply with the more homogeneous populations of many European countries. Catholics and Protestants; whites and blacks; English, Irish, Germans, Slavs, Jews, and Italians—such differences undermined the class solidarity of American workers, making it far more difficult to sustain class-oriented political parties and a socialist labor movement. Moreover, the country's remarkable economic growth generated on average a higher standard of living for American workers than their European counterparts experienced. Land was cheaper, and home ownership was more available. Workers with property generally found socialism less attractive than those without. By 1910, a particularly large group of white-collar workers in sales, services, and offices outnumbered factory laborers. Their middle-class aspirations further diluted impulses toward radicalism.

But political challenges to the abuses of capitalist industrialization did arise. In the 1890s, among small farmers in the U.S. South, West, and Midwest, "populists" railed against banks, industrialists, monopolies, the existing money system, and both major political parties, all of which they thought were dominated by the corporate interests of the eastern elites. More successful, especially in the early twentieth century, were the **Progressives**, who pushed for specific reforms, such as

wages-and-hours legislation, better sanitation standards, antitrust laws, and greater governmental intervention in the economy. Socialism, however, came to be defined as fundamentally "un-American" in a country that so valued individualism and so feared "big government." It was a distinctive feature of the American response to industrialization.

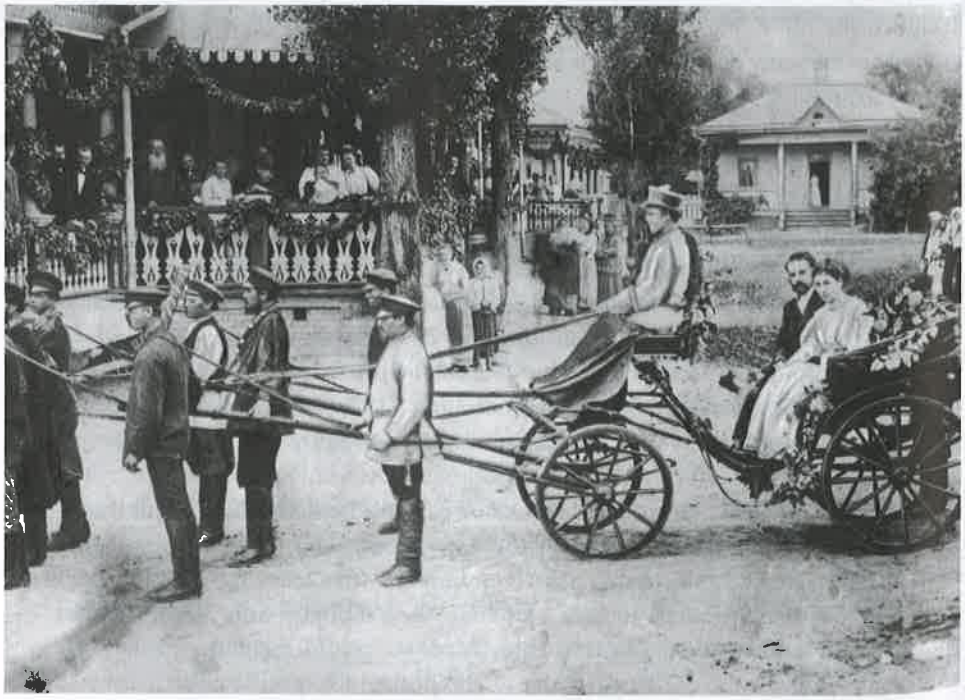
Russia: Industrialization and Revolution

As a setting for the Industrial Revolution, it would be hard to imagine two more different environments than the United States and Russia. If the United States was the Western world's most exuberant democracy during the nineteenth century, Russia remained the sole outpost of absolute monarchy, in which the state exercised far greater control over individuals and society than anywhere in the Western world.

At the beginning of the twentieth century, Russia still had no national parliament, no legal political parties, and no nationwide elections. The tsar, answerable to God alone, ruled unchecked. Furthermore, Russian society was dominated by a titled nobility of various ranks. Its upper levels included great landowners, who furnished the state with military officers and leading government officials. Until 1861, most Russians were peasant serfs, bound to the estates of their masters, subject to sale, greatly exploited, and largely at the mercy of their owners. A vast cultural gulf separated these two classes. Many nobles were highly westernized, some

AP Analyzing Evidence

What does the image indicate about the success of Russia's social reforms in the nineteenth century?



Russian Serfs This 1872 photograph shows a wealthy Russian landowner and his wife being pulled in a cart by serfs, who had been legally freed just eleven years earlier but continued to serve their master. They are attending a high-society wedding of another local estate owner. (© SZ Photo/Bridgeman Images)

speaking French better than Russian, whereas their serfs were steeped in a backwoods Orthodox Christianity that incorporated pre-Christian spirits, spells, curses, and magic.

A further difference between Russia and the United States lay in the source of social and economic change. In the United States, such change bubbled up from society as free farmers, workers, and businessmen sought new opportunities and operated in a political system that gave them varying degrees of expression. In autocratic Russia, change was far more often initiated by the state itself, in its continuing efforts to catch up with the more powerful and innovative states of Europe. This kind of "transformation from above" found an early expression in the reign of Peter the Great (r. 1689–1725). (See "Russians and Empire" in Chapter 5.) Such state-directed change continued in the nineteenth century with the freeing of the serfs in 1861, an action stimulated by military defeat at the hands of British and French forces in the Crimean War (1854–1856). To many thoughtful Russians, serfdom seemed incompatible with modern civilization and held back the country's overall development, as did its economic and industrial backwardness. Thus, beginning in the 1860s, Russia began a program of industrial development that was more heavily directed by the state than was the case in Western Europe or the United States.

By the 1890s, Russia's Industrial Revolution was launched and growing rapidly. It focused particularly on railroads and heavy industry and was fueled by a substantial amount of foreign investment. By 1900, Russia ranked fourth in the world in steel production and had major industries in coal, textiles, and oil. Its industrial enterprises, still modest in comparison to those of Europe, were concentrated in a few major cities—Moscow, St. Petersburg, and Kiev, for example—and took place in factories far larger than in most of Western Europe.

AP® Causation

What factors contributed to the making of a revolutionary situation in Russia by the beginning of the twentieth century?

All of this contributed to the explosive social outcomes of Russian industrialization. A growing middle class of businessmen and professionals increasingly took shape. As modern and educated people, many in the middle class objected strongly to the deep conservatism of tsarist Russia and sought a greater role in political life, but they were also dependent on the state for contracts and jobs and for suppressing the growing radicalism of the workers, which they greatly feared. Although factory workers constituted only about 5 percent of Russia's total population, they quickly developed a radical class consciousness, based on harsh conditions and the absence of any legal outlet for their grievances. As in Western Europe, millions flocked to the new centers of industrial development. By 1897, over 70 percent of the population in Moscow and St. Petersburg were recent migrants from the rural areas. Their conditions of life resembled those of industrial migrants in New York or Berlin. One observer wrote: "People live in impossible conditions: filth, stench, suffocating heat. They lie down together barely a few feet apart; there is no division between the sexes and adults sleep with children."[21] Until 1897, a thirteen-hour working day was common, while ruthless discipline and overt disrespect from supervisors created resentment. In the absence of legal unions or political parties, these grievances often erupted in the form of large-scale strikes.

AP® EXAM TIP

Comparing responses to the Industrial Revolution is a popular topic on the AP® exam.

Map 9.4 Industrialization and Revolution in Russia, 1905

Only in Russia did industrialization lead to violent revolutionary upheavals, both in 1905 and more successfully in 1917.

AP® Causation

What does the map suggest about the connection between industrialization and revolution?

AP® EXAM TIP

You must know which empires expanded, which ones contracted, and which ones collapsed during this time.

In these conditions, a small but growing number of educated Russians found in Marxist socialism a way of understanding the changes they witnessed daily as well as hope for the future in a revolutionary upheaval of workers. In 1898, they created an illegal Russian Social Democratic Labor Party and quickly became involved in workers' education, union organizing, and, eventually, revolutionary action. By the early twentieth century, the strains of rapid change and the state's continued intransigence had reached the bursting point, and in 1905, following its defeat in a naval war with Japan, Russia erupted in spontaneous insurrection (see Map 9.4). Workers in Moscow and St. Petersburg went on strike and created their own representative councils, called soviets. Peasant uprisings, student demonstrations, revolts of non-Russian nationalities, and mutinies in the military all contributed to the upheaval. Recently formed political parties, representing intellectuals of various persuasions, came out into the open.

The **Russian Revolution of 1905**, though brutally suppressed, forced the tsar's regime to make more substantial reforms than it had ever contemplated. It granted a constitution, legalized both trade unions and political parties, and permitted the election of a national assembly, called the Duma. Censorship was eased, and plans were under way for universal primary education. Industrial development likewise continued at a rapid rate, so that by 1914 Russia stood fifth in the world in terms of overall output. But in the first half of that year, some 1,250,000 workers, representing about 40 percent of the entire industrial workforce, went out on strike.

Thus the tsar's limited political reforms, which had been granted with great reluctance and were often reversed in practice, failed to tame working-class radicalism or to bring social stability to Russia. In Russian political life, the people generally, and even the middle class, had only a very limited voice. Representatives of even the privileged classes had become so alienated by the government's intransigence that many felt revolution was inevitable. Various revolutionary groups, many of them socialist, published pamphlets and newspapers, organized trade unions, and spread their messages among workers and peasants. Particularly in the cities, these revolutionary parties had an impact. They provided a language through which workers could express their grievances; they created links among workers from different factories; and they furnished leaders who were able to act when the revolutionary moment arrived.

World War I provided that moment. The enormous hardships of that war, coupled with the immense social tensions of industrialization within a still-autocratic political system, sparked the Russian Revolution of 1917 (see Chapter 12). That massive upheaval quickly brought to power the most radical of the socialist groups operating in the country—the Bolsheviks, led by the charismatic Vladimir Ilyich Ulyanov, better known as Lenin. Only in Russia was industrialization associated with violent social revolution. This was the most distinctive feature of Russia's modern historical development. And only in Russia was a socialist political party, inspired by the teachings of Karl Marx, able to seize power, thus launching the modern world's first socialist society, with enormous implications for the twentieth century.

AP® Comparison

What was common to industrialization everywhere, and in what ways did it vary from place to place?

The Industrial Revolution and Latin America in the Nineteenth Century

Beyond the world of Europe and North America, only Japan underwent a major industrial transformation during the nineteenth century, part of that country's overall response to the threat of European aggression. (See "The Japanese Difference: The Rise of a New East Asian Power" in Chapter 11.) Elsewhere—in colonial India, Egypt, the Ottoman Empire, China, and Latin America—very modest experiments in modern industry were undertaken, but nowhere did they drive the kind of major social transformation that had taken place in Britain, Europe, North America, and Japan. However, even in societies that did not experience their own Industrial Revolution, the profound impact of European and North American industrialization was hard to avoid. Such was the case in Latin America during the nineteenth century. (See Snapshot: The Industrial Revolution and the Global Divide.)

AP® EXAM TIP

Make sure you study the ways the Industrial Revolution affected regions beyond Europe and the United States, because these examples are frequently found on the AP® exam.

After Independence in Latin America

The struggle for independence in Latin America had lasted far longer and proved far more destructive than in North America. Decimated populations, diminished herds of livestock, flooded or closed silver mines, abandoned farms, shrinking international trade and investment capital, and empty national treasuries—these were the conditions that greeted Latin Americans upon independence. Furthermore, the four major administrative units (viceroyalties) of Spanish America ultimately dissolved into eighteen separate countries, and regional revolts wracked Brazil in the early decades of its independent life. A number of international wars in the post-independence century likewise shook these new nations. Peru and Bolivia briefly united and then broke apart in a bitter conflict (1836–1839); Mexico lost huge territories to the United States (1846–1848); and an alliance of Argentina, Brazil, and Uruguay went to war with Paraguay (1864–1870) in a conflict that devastated Paraguay's small population.

AP® EXAM TIP

Know that the same content can be asked in different ways on the AP® exam. Latin American independence is the same topic as the contraction of the Spanish Empire.

AP® Causation

What conclusions can you draw from this chart about changes in global power structures and imperialism between 1750 and 1900?

SNAPSHOT The Industrial Revolution and the Global Divide

During the nineteenth century, the Industrial Revolution generated an enormous and unprecedented economic division in the world, as measured by the share of manufacturing output. What patterns can you see in this table?

SHARE OF TOTAL WORLD MANUFACTURING OUTPUT (percentage)

	1750	1800	1860	1880	1900
EUROPE AS A WHOLE	**23.2**	**28.1**	**53.2**	**61.3**	**62.0**
United Kingdom	1.9	4.3	19.9	22.9	18.5
France	4.0	4.2	7.9	7.8	6.8
Germany	2.9	3.5	4.9	8.5	13.2
Russia	5.0	5.6	7.0	7.6	8.8
UNITED STATES	**0.1**	**0.8**	**7.2**	**14.7**	**23.6**
JAPAN	**3.8**	**3.5**	**2.6**	**2.4**	**2.4**
THE REST OF THE WORLD	**73.0**	**67.7**	**36.6**	**20.9**	**11.0**
China	32.8	33.3	19.7	12.5	6.2
South Asia (India/Pakistan)	24.5	19.7	8.6	2.8	1.7

Data from Paul Kennedy, *The Rise and Fall of the Great Powers* (New York: Random House, 1987), 149.

Within these new countries, political life was turbulent and unstable. Conservatives favored centralized authority and sought to maintain the social status quo of the colonial era in alliance with the Catholic Church, which at independence owned perhaps half of all productive land. Their often-bitter opponents were liberals, who attacked the Church in the name of Enlightenment values, sought at least modest social reforms, and preferred federalism. In many countries, conflicts between these factions, often violent, enabled military strongmen known as ***caudillos*** (kaw-DEE-yos) to achieve power as defenders of order and property, although they too succeeded one another with great frequency. One of them, Antonio López de Santa Anna of Mexico, was president of his country at least nine separate times between 1833 and 1855. Constitutions too replaced one another with bewildering speed. Bolivia had ten constitutions during the nineteenth century, while Ecuador and Peru each had eight.

AP® EXAM TIP

Take notes on this paragraph about social continuities in nineteenth-century Latin America.

Social life did not change fundamentally in the aftermath of independence. As in Europe and North America, women remained disenfranchised and wholly outside of formal political life. Slavery was abolished in most of Latin America by midcentury, although it persisted in both Brazil and Cuba until the late 1880s. Most of the legal distinctions among various racial categories also disappeared, and all free people were considered, at least officially, equal citizens. Nevertheless, productive economic resources such as businesses, ranches, and plantations remained overwhelmingly in the hands of creole white men, who were culturally oriented toward

Europe. The military provided an avenue of mobility for a few skilled and ambitious mestizo men, some of whom subsequently became caudillos. Other mixed-race men and women found a place in a small middle class as teachers, shopkeepers, or artisans. The vast majority—blacks, Indians, and many mixed-race people of both sexes—remained impoverished, working small subsistence farms or laboring in the mines or on the *haciendas* (ah-see-EHN-duhz) (plantations) of the well-to-do. Only rarely did the poor and dispossessed actively rebel against their social betters. One such case was the Caste War of Yucatán (1847–1901), a prolonged struggle of the Maya people of Mexico aimed at cleansing their land of European and mestizo intruders.

Facing the World Economy

During the second half of the nineteenth century, a measure of political consolidation took hold in Latin America, and countries such as Mexico, Peru, and Argentina entered periods of greater stability. At the same time, Latin America as a whole became more closely integrated into a world economy driven by the industrialization of Western Europe and North America. The new technology of the steamship cut the sailing time between Britain and Argentina almost in half, while the underwater telegraph instantly brought the latest news and fashions of Europe to Latin America.

The most significant economic outcome of this growing integration was a rapid growth of Latin American exports to the industrializing countries, which now needed the food products, raw materials, and markets of these new nations. Latin American landowners, businessmen, and governments proved eager to supply those needs, and in the sixty years or so after 1850, a **Latin American export boom** increased the value of goods sold abroad by a factor of ten.

AP® Causation

What processes led to Latin America's increased connection to the global economy in this era?

Mexico continued to produce large amounts of silver, providing more than half the world's new supply until 1860. Now added to the list of raw materials flowing out of Latin America were copper from Chile, a metal that the growing electrical industry required; tin from Bolivia, which met the mounting demand for tin cans; and nitrates from Chile and guano (bird droppings) from Peru, both of which were used for fertilizer. Wild rubber from the Amazon rain forest was in great demand for bicycle and automobile tires, as was sisal from Mexico, used to make binder twine for the proliferating mechanical harvesters of North America. Bananas from Central America, beef from Argentina, cacao from Ecuador, coffee from Brazil and Guatemala, and sugar from Cuba also found eager markets in the rapidly growing and increasingly prosperous world of industrializing countries. In return for these primary products, Latin Americans imported the textiles, machinery, tools, weapons, and luxury goods of Europe and the United States (see Map 9.5).

Accompanying this burgeoning commerce was large-scale investment of European capital in Latin America, $10 billion alone between 1870 and 1919. Most of this capital came from Great Britain, which invested more in Argentina in the late

AP Causation

What are some specific causes of the increased global economic connections shown on the map?

Map 9.5 Latin America and the World, 1825–1935

During the nineteenth and early twentieth centuries, Latin American countries interacted with the industrializing world via investment, trade, immigration, and military intervention from the United States.

nineteenth century than in its colony of India, although France, Germany, Italy, and the United States also contributed to this substantial financial transfer. By 1910, U.S. business interests controlled 40 percent of Mexican property and produced half of its oil. Much of this capital was used to build railroads, largely to funnel Latin American exports to the coast, where they were shipped to overseas markets. Mexico had only 390 miles of railroad in 1876; it had 15,000 miles in 1910. By 1915, Argentina, with 22,000 miles of railroad, had more track per person than the United States had.

Becoming like Europe?

To the economic elites of Latin America, intent on making their countries resemble Europe or the United States, all of this was progress. In some respects, they were surely right. Economies were growing, producing more than ever before. The population was also burgeoning; it increased from about 30 million in 1850 to more than 77 million in 1912 as public health measures (such as safe drinking water, inoculations, sewers, and campaigns to eliminate mosquitoes that carried yellow fever) brought down death rates.

Urbanization also proceeded rapidly. By the early twentieth century, wrote one scholar, "Latin American cities lost their colonial cobblestones, white-plastered walls, and red-tiled roofs. They became modern metropolises, comparable to urban giants anywhere. Streetcars swayed, telephones jangled, and silent movies flickered from Montevideo and Santiago to Mexico City and Havana."[22] Buenos Aires, Argentina's metropolitan center, boasted 750,000 people in 1900 and billed itself as the "Paris of South America." There the educated elite, just like the English, drank tea in the afternoon, while discussing European literature, philosophy, and fashion, usually in French.

AP® Comparison

Compare the shift to industrial production in Latin America and Europe.

To become more like Europe, Latin America sought to attract more Europeans. Because civilization, progress, and modernity apparently derived from Europe, many Latin American countries actively sought to increase their "white" populations by deliberately recruiting impoverished Europeans with the promise, mostly unfulfilled, of a new and prosperous life in the New World. Argentina received the largest wave of European immigrants (some 2.5 million between 1870 and 1915), mostly from Spain and Italy. Brazil and Uruguay likewise attracted substantial numbers of European newcomers.

Only a quite modest segment of Latin American society saw any great benefits from the export boom and all that followed from it. Upper-class landowners certainly gained as exports flourished and their property values soared. Middle-class urban dwellers—merchants, office workers, lawyers, and other professionals—also grew in numbers and prosperity as their skills proved valuable in a modernizing society. As a percentage of the total population, however, these were small elites. In Mexico in the mid-1890s, for example, the landowning upper class made up no more than 1 percent and the middle classes perhaps 8 percent of the population. Everyone else was lower class, and most of them were impoverished.[23]

AP® Comparison

How were the social changes in Latin America similar to or different from the social changes in Europe?

A new but quite small segment of this vast lower class emerged among urban workers who labored in the railroads, ports, mines, and a few factories. They initially organized themselves in a variety of mutual aid societies, but by the end of the nineteenth century they were creating unions and engaging in strikes. To authoritarian governments interested in stability and progress, such activity was highly provocative and threatening, and they acted harshly to crush or repress unions and strikes. In 1906, the Mexican dictator Porfirio Díaz invited the Arizona Rangers to suppress a strike at Cananea, near the U.S. border, an action that resulted in dozens of deaths. The following year in the Chilean city of Iquique, more than 1,000 men, women, and children were slaughtered by police when nitrate miners protested their wages and working conditions.

The vast majority of the lower class lived in rural areas, where they suffered the most and benefited the least from the export boom. Government attacks on communal landholding and peasant indebtedness to wealthy landowners combined to push many farmers off their land or into remote and poor areas where they could barely make a living. Many wound up as dependent laborers or peons on the haciendas of the wealthy, where their wages were often too meager to support a family. Thus women and children, who had earlier remained at home to tend the family plot, were required to join their menfolk as field laborers. Many immigrant Italian farmworkers in Argentina and Brazil were unable to acquire their own farms, as they had expected, and so drifted into the growing cities or returned to Italy.

Although local protests and violence were frequent, only in Mexico did these vast inequalities erupt into a nationwide revolution. There, in the early twentieth century, middle-class reformers joined with workers and peasants to overthrow the long dictatorship of Porfirio Díaz (r. 1876–1911). What followed was a decade of bloody conflict (1910–1920) that cost Mexico some 1 million lives, or roughly 10 percent of the population. Huge peasant armies under charismatic leaders such as Pancho Villa and Emiliano Zapata helped oust Díaz. Intent on seizing land and redistributing it to the peasants, they then went on to attack many of Mexico's large haciendas. But unlike the leaders of the later Russian and Chinese revolutions, whose most radical elements seized state power, Villa and Zapata proved unable to do so on any long-term basis, in part because they were hobbled by factionalism and focused on local or regional issues. Despite this limitation and its own internal conflicts, the **Mexican Revolution** transformed the country. When the dust settled, Mexico had a new constitution (1917) that proclaimed universal male suffrage; provided for the redistribution of land; stripped the Catholic Church of any role in public education and forbade it to own land; announced unheard-of rights for workers, such as a minimum wage and an eight-hour workday; and placed restrictions on foreign ownership of property. Much of Mexico's history in the twentieth century involved working out the implications of these nationalist and reformist changes. The revolution's direct influence, however, was largely limited to Mexico itself and a few places in Central America and the Andes; the upheaval did not have the wider international impact of the Russian and Chinese revolutions.

AP® EXAM TIP

Be able to compare features of the Mexican Revolution to those of earlier revolutions.

Perhaps the most significant outcome of the export boom lay in what did *not* happen, for nowhere in Latin America did it jump-start a thorough Industrial Revolution, despite a few factories that processed foods or manufactured textiles, clothing, and building materials. The reasons are many. A social structure that relegated some 90 percent of its population to an impoverished lower class generated only a very small market for manufactured goods. Moreover, economically powerful groups such as landowners and cattlemen benefited greatly from exporting agricultural products and had little incentive to invest in manufacturing. Domestic manufacturing enterprises could only have competed with cheaper and higher-quality foreign goods if they had been protected for a time by high tariffs. But Latin American political leaders had thoroughly embraced the popular European doctrine of prosperity through free trade, and many governments depended on taxing imports to fill their treasuries.

The Mexican Revolution Women were active participants in the Mexican Revolution. They prepared food, nursed the wounded, washed clothes, and at times served as soldiers on the battlefield, as illustrated in this cover image from a French magazine in 1913. (Apic/Getty Images)

Instead of their own Industrial Revolutions, Latin Americans developed a form of economic growth that was largely financed by capital from abroad and dependent on European and North American prosperity and decisions. Brazil experienced this kind of dependence when its booming rubber industry suddenly collapsed in 1910–1911, after seeds from the wild rubber tree had been illegally exported to Britain and were used to start competing and cheaper rubber plantations in Malaysia.

Later critics saw this **dependent development** as a new form of colonialism, expressed in the power exercised by foreign investors. The influence of the U.S.-owned United Fruit Company in Central America was a case in point. Allied with large landowners and compliant politicians, the company pressured the governments of these "banana republics" to maintain conditions favorable to U.S. business. This indirect or behind-the-scenes imperialism was supplemented by repeated U.S. military intervention in support of American corporate interests in Cuba, Haiti, the Dominican Republic, Nicaragua, and Mexico. The United States also controlled the Panama Canal and acquired Puerto Rico as a territory in the aftermath of the Spanish-American War (see Map 9.5, page 416).

AP® Comparison

Compare the role of women in the Mexican Revolution, pictured above, with the role of women in the French Revolution of the previous era.

AP® EXAM TIP

Make sure you understand "dependent development" because the concept is sometimes seen on the AP® exam.

Thus, despite Latin America's domination by people of European descent and its close ties to the industrializing countries of the Atlantic world, that region's historical trajectory in the nineteenth century diverged considerably from that of Europe and North America.

REFLECTIONS

History and Horse Races

Historians and students of history seem endlessly fascinated by "firsts"—the first breakthrough to agriculture, the first domestication of horses, the first civilization, the first use of gunpowder, the first printing press, and so on. Each of these firsts presents a problem of explanation: why did it occur in some particular time and place rather than somewhere else or at some other time? Such questions have assumed historical significance because "first achievements" represent something new in the human journey and because many of them conveyed unusual power, wealth, status, or influence on their creators.

Nonetheless, the focus on firsts can be misleading as well. Those who accomplished something first may see themselves as generally superior to those who embraced that innovation later. Historians too can sometimes adopt a winners-and-losers mentality, inviting a view of history as a horse race toward some finish line of accomplishment. Most first achievements in history, however, were not the result of intentional efforts but rather the unexpected outcome of converging circumstances.

The Industrial Revolution is a case in point. Efforts to understand the European beginnings of this immense breakthrough are certainly justified by its pervasive global consequences and its global spread over the past several centuries. In terms of human ability to dominate the natural environment and to extract wealth from it, the Industrial Revolution marks a decisive turning point in the history of our species. But Europeans' attempts to explain their Industrial Revolution have at times stated or implied their own unique genius. In the nineteenth century, many Europeans saw their technological mastery as a sure sign of their cultural and racial superiority as they came to use "machines as the measure of men."[24] In pondering the European origins of the Industrial Revolution, historians too have sometimes sought an answer in some distinct or even superior feature of European civilization.

In emphasizing the unexpectedness of the first Industrial Revolution, and the global context within which it occurred, world historians have attempted to avoid a "history as horse race" outlook. Clearly, the first industrial breakthrough in Britain was not a self-conscious effort to win a race; it was the surprising outcome of countless decisions by many people to further their own interests. Subsequently, however, other societies and their governments quite deliberately tried to catch up, seeking the wealth and power that the Industrial Revolution promised.

The rapid spread of industrialization across the planet, though highly uneven, may diminish the importance of its Europeans beginnings. Just as no one views agriculture as a Middle Eastern phenomenon even though it occurred first in that region, it seems likely that industrialization will be seen increasingly as a global process rather than one uniquely associated with Europe. If industrial society proves to be a sustainable future for humankind—presently a very open question—historians of the future may well be more interested in the pattern of its global spread and in efforts to cope with its social and environmental consequences than in its origins in Western Europe.

Chapter Review

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Big Picture Questions

1. What did humankind gain from the Industrial Revolution, and what did it lose?
2. In what ways might the Industrial Revolution be understood as a global rather than simply a European phenomenon?
3. The Industrial Revolution transformed social as well as economic life. What evidence might support this statement?
4. **AP® Making Connections:** How did the Industrial Revolution interact with the Scientific Revolution and the French Revolution to generate Europe's modern transformation?