

CHAPTER 18

The Machine Age, 1877–1920

LEARNING OBJECTIVES

After you have studied Chapter 18 in your textbook and worked through this study guide chapter, you should be able to:

1. Cite the technological advances that furthered the process of industrialization in the United States.
2. Discuss the specific innovations and contributions of Thomas Alva Edison, Henry Ford, and the du Ponts to the process of industrialization in the United States; and examine the political, social, and economic consequences of those innovations and contributions.
3. Discuss the impact of technology on the development of southern industry.
4. Explain and assess the late-nineteenth-century obsession with time studies and scientific management.
5. Discuss late-nineteenth-century changes in the nature of work, in working conditions, and in the workplace itself, and explain the impact of these changes on American workers.
6. Examine the rise of unionism and the emergence of worker activism in the late nineteenth century, and discuss the reaction of employers, government, and the public to these manifestations of worker discontent.
7. Examine the position of women, children, immigrants, and blacks in the work force and in the union movement in the late nineteenth century.
8. Explain the emergence of the consumer society, and discuss the factors that determined the extent to which working-class Americans were able to participate in this society.
9. Discuss the impact of each of the following on American attitudes and lifestyles:
 - a. The indoor toilet
 - b. Processed and preserved foods
 - c. The sewing machine
 - d. Department stores and chain stores
10. Explain the characteristics of modern advertising and examine its role in industrial America.
11. Examine the corporate consolidation movement of the late nineteenth century, and discuss the consequences of this movement.
12. Explain and evaluate the ideologies of Social Darwinism, laissez-faire capitalism, and the Gospel of Wealth. Explain the impact of these ideas on workers and on the role of government in society.
13. Discuss and evaluate the ideas and suggested reforms of those who dissented from the ideologies of the Gospel of Wealth, Social Darwinism, and laissez-faire capitalism.
14. Discuss the response of all branches of government at the state and national levels to the corporate consolidation movement on the one hand and to the grievances of workers on the other hand.

THEMATIC GUIDE

The theme of Chapter 18 is industrialization as a major component of American expansion in the late nineteenth century. Three technological developments that fostered the “second” industrial revolution of the late nineteenth and early twentieth centuries are mentioned in the chapter’s introduction (the rise of electric-powered machines; the expanded use of engines powered by internal combustion; and new applications in the use of chemicals). The relationship between these three developments and industrialization is obvious in the discussion of Thomas A. Edison and the electric industry, Henry Ford and the automobile industry, the du Ponts and the chemical industry, and the influence of technology on certain industries in the South. Keep these developments in mind as you study the chapter, and try to determine which developments apply to the various topics discussed in the chapter.

Industrialism changed the nature of work and in many respects caused an uneven distribution of power among interest groups in American society. Industrial workers were employees rather than producers, and repeating specialized tasks made them feel like appendages to machines. The emphasis on quantity rather than quality further dehumanized the workplace. These factors, in addition to the increased power of the employer, reduced the independence and self-respect of workers, but worker resistance only led employers to tighten restrictions.

Industrialism also brought more women and children into the labor force. Although job opportunities opened for women, most women went into low-paying clerical jobs, and sex discrimination continued in the workplace. Employers also attempted to cut wage costs by hiring more children. Although a few states passed child-labor laws, such laws were difficult to enforce and employers generally opposed state interference in their hiring practices. Effective child-labor legislation would not come until the twentieth century.

As the nature of work changed, workers began to protest low wages, the attitude of employers, the hazards of the workplace, and the absence of disability insurance and pensions. The effectiveness of legislation designed to redress these grievances was usually limited by conservative Supreme Court rulings. Out of frustration, some workers began to participate in unions and in organized resistance. Unionization efforts took various directions. The Knights of Labor tried to ally all workers by creating producer and consumer cooperatives; the American Federation of Labor strove to organize skilled workers to achieve pragmatic objectives; and the Industrial Workers of the World attempted to overthrow capitalist society. The railroad strikes of 1877, the Haymarket riot, and the Homestead and Pullman strikes were all marked by violence, and they exemplified labor’s frustration as well as its active and organized resistance. Government intervention against the strikers convinced many workers of the imbalance of interest groups in American society, whereas the middle class began to connect organized working-class resistance with radicalism. Although this perception was by and large mistaken, middle-class fear of social upheaval became an additional force against organized labor.

Not only did industrialization affect the nature of work, it also produced a myriad of products that affected the everyday lives of Americans. As America became a consumer-oriented society, most of its citizens faced living costs that rose faster than wages. Consequently, many people could not take advantage of the new goods and services being offered. But, as noted above, more women and children became part of the paid labor force. Although many did so out of necessity, others hoped that the additional income would allow the family to participate in the consumer society.

Increased availability of goods and services to a greater number of people was not the only reason for a general improvement in living standards. The era also witnessed advances in medical care, better diets, and improved living conditions. Furthermore, education, more than ever a means to upward mobility, became more readily available through the spread of public education.

American habits and attitudes were further affected by the democratization of convenience that resulted from the indoor toilet and private bathtub. At the same time, the tin can and the icebox altered lifestyles

and diet, the sewing machine created a clothing revolution, and department stores and chain stores emerged that both created and served the new consumerism.

As American society became more consumer oriented, brand names for products were created. Used by advertisers to sell products, these brand names in turn created “consumption communities” made up of individuals loyal to those brands. As producers tried to convince consumers of their need for particular products, advertising became more important than ever. And since the major vehicle for advertising in the late nineteenth century was the newspaper, advertising was transformed into news.

Although the American standard of living generally improved during the late nineteenth century, there were unsettling economic forces at work. Although rapid economic growth was a characteristic of the period, the period was also characterized by the economic instability and uncertainty produced by cycles of boom and bust. In an effort to create a sense of order and stability out of the competitive chaos, industrialists turned to economic concentration in the form of pools, trusts, and holding companies. Therefore, the search for order led to the merger movement and to larger and larger combinations that sought domination of their markets through vertical integration.

Defenders of business justified the merger movement and the pursuit of wealth and profits by advancing the “Gospel of Wealth,” which was based on Social Darwinism and on the precepts of laissez-faire capitalism. The business elite also used this philosophy to justify both its paternalistic attitude toward the less fortunate in society and its advocacy of government aid to business. The paradoxes and inconsistencies associated with the Gospel of Wealth gave rise to dissent from sociologists, economists, and reformers. The general public also began to speak against economic concentration in the form of monopolies and trusts. The inability of state governments to resolve the problems associated with economic concentration led to passage of the Sherman Anti-Trust Act by Congress in 1890, but this legislation represented a vaguely worded political compromise, the interpretation of which was left to the courts. Narrow interpretation by a conservative Supreme Court and failure by government officials to fully support the act meant that it was used more successfully against organized labor than against business combinations, again illustrating the uneven distribution of power among interest groups in late-nineteenth-century American society.

IDENTIFICATION AND SIGNIFICANCE

After studying Chapter 18 of *A People and a Nation*, you should be able to identify fully *and* explain the historical significance of each item listed below.

- Identify each item in the space provided. Give an explanation or description of the item. Answer the questions *who*, *what*, *where*, and *when*.
- Explain the historical significance of each item in the space provided. Establish the historical context in which the item exists. Establish the item as the result of or as the cause of other factors existing in the society under study. Answer this question: *What were the political, social, economic, and/or cultural consequences of this item?*

1. Thomas A. Edison

2. Henry Ford

3. mass production and the assembly line

4. Frederick W. Taylor

5. child labor

6. the Knights of Labor

7. the Haymarket riot

8. the American Federation of Labor

9. the Homestead strike

10. the Pullman strike

11. Eugene V. Debs

12. John D. Rockefeller

13. Trusts

14. Holding companies

15. vertical integration and horizontal integration

16. Social Darwinism

17. the principles of laissez-faire capitalism

IDEAS AND DETAILS

Objective 2

1. Which of the following innovations by Henry Ford reduced the cost of his automobiles and made them more affordable?
 - a. Interchangeable parts
 - b. The machine-tool industry
 - c. The assembly line
 - d. Team production

Objective 4

2. The emphasis on efficient production had the effect of
 - a. making skilled labor more valuable.
 - b. lowering the wage scale for most workers.
 - c. increasing the size of the work force.
 - d. making time as important as quality in the measure of acceptable work.

Objectives 5 and 6

3. Which of the following factors hampered union organizing efforts during the late nineteenth century?
 - a. A steady increase in wages and a steady decline in the cost of living
 - b. Job insecurity and the seasonal nature of work
 - c. Factory owners offered pension plans and healthcare benefits to their workers
 - d. A steady decrease in the number of industrial accidents due to passage of legislation mandating a safer work environment

Objectives 5 and 6

4. In relation to the wage system, most wage earners
 - a. appreciated the freedom it gave them to negotiate with the employer for higher wages.
 - b. recognized that job competition among workers caused the base pay of all workers to rise steadily.
 - c. advocated that Congress establish a minimum wage for all workers.
 - d. felt trapped and exploited in a system controlled by employers.

Objectives 6 and 13

5. In cases involving legislation that limited working hours, the Supreme Court
 - a. declared that Congress, not the states, had the power to enact such legislation.
 - b. declared that the Fourteenth Amendment did not apply to state actions.
 - c. reduced the impact of such legislation by narrowly interpreting which jobs were dangerous and which workers needed protection.
 - d. consistently upheld the regulatory powers of the states.

Objectives 6 and 7

6. The Knights of Labor, unlike the American Federation of Labor,
 - a. advocated the use of violence against corporate power.
 - b. pressed for pragmatic objectives that would bring immediate benefits to workers.
 - c. believed in using strikes as the primary weapon against employers.
 - d. welcomed all workers, including women, blacks, and immigrants.

Objective 6

7. Which of the following was a consequence of the Haymarket riot?
 - a. National legislation was passed mandating an eight-hour workday for industry in the United States.
 - b. The military forces of the United States were put on alert because of fear of revolution.
 - c. Revival of the middle-class fear of radicalism led to the strengthening of police forces in many cities.
 - d. The Knights of Labor was strengthened.

Objectives 6 and 7

8. Which of the following is true of the Women's Trade Union League?
 - a. Although initially dominated by middle-class women, working-class leaders gained control in the 1910s.
 - b. Although its members opposed the idea, its leaders actively worked for a constitutional amendment guaranteeing equal rights to women.
 - c. Both its leaders and its members worked tirelessly against extension of the vote to women.
 - d. As an anarchist organization, it advocated working-class unity and the waging of war against capitalist society.

Objective 8

9. Data on wages and living costs in the late nineteenth and early twentieth centuries indicate which of the following?
 - a. Most working-class wage earners suffered because of declining wages and increasing living costs.
 - b. While wages rose for farmers and factory workers, they declined for most members of the middle class.
 - c. While incomes rose for most workers, the cost of living usually rose at a higher rate.
 - d. Professional workers suffered more from the rising cost of living than did industrial workers.

Objective 9

10. As a result of the indoor bathroom, Americans of the late nineteenth and early twentieth centuries
 - a. became conscious of personal appearance for the first time.
 - b. viewed bodily functions in a more unpleasant light.
 - c. insisted on private facilities in hotels.
 - d. were unconcerned about human pollution.

Objective 11

4. Businessmen turned to devices like trusts and holding companies because
 - a. they were a means by which to combat the uncertainty of the business cycle.
 - b. such cooperative business arrangements were responsive to consumer needs.
 - c. they allowed business owners to concentrate on quality production while financial specialists handled monetary matters.
 - d. they encouraged an open market in which many people had economic opportunity.

Objective 12

5. Social Darwinists believed that in a free society run in accordance with natural law
 - a. there would be no poverty.

- b. power would flow into the hands of the most capable people.
- c. wealth would be distributed equally.
- d. people would become less aggressive.

Objective 12

6. The philosophy accepted by most businesspeople in the late nineteenth century included the idea that
- a. government could intervene if it were doing so to protect the disadvantaged.
 - b. government power could rightly be used to protect consumers from unfair prices.
 - c. government should extend a helping hand to workers by encouraging the development of labor organizations.
 - d. government should extend a helping hand to business interests through tariff protection.

Objective 13

7. Lester Ward expressed the belief that
- a. cooperative action and government intervention could be useful in creating a better society.
 - b. business forms, like life forms, evolved from the simple to the complex as part of the natural order of things.
 - c. tampering with natural economic laws would lead to economic disaster.
 - d. the government had no responsibility in society other than national defense.

Objective 14

8. In the case of *United States v. E. C. Knight Co.*, the Supreme Court
- a. held all trusts to be illegal.
 - b. strengthened the powers of the Interstate Commerce Commission.
 - c. reduced the government's power under the Sherman Anti-Trust Act to combat combinations in restraint of trade.
 - d. held that workers had the right to organize and strike.

ESSAY QUESTIONS

Objectives 5 and 6

1. Discuss the grievances of workers in the late nineteenth century, the means by which they sought redress, and the effectiveness of those means.

Objectives 5, 6, and 13

2. Discuss the Haymarket riot, the Homestead strike, and the Pullman strike. Explain the reaction of the government and the public to these instances of labor unrest.

Objective 7

3. Examine the changing position of women in the labor market in the late nineteenth century.

Objective 9

4. Indicate the developments that made the indoor bathroom possible, and discuss its impact on American attitudes and lifestyles.

Objective 11

5. Explain the concept of Social Darwinism and its use by business leaders to justify their position and wealth in society.

Objectives 11 and 13

6. Analyze the relationship between the three branches of the federal government and the business community in the period between 1877 and 1920.

Multiple-Choice Answers

1.
 - a. Correct. When the Ford Motor Company began operation in 1903, it utilized mass production, and through use of the electric conveyor belt, introduced the moving assembly line at its Highland Park plant in 1913. This drastically reduced the time and cost of producing cars.
 - b. No. The use of precision machinery to make interchangeable parts was first seen as part of the “American system of manufacturing” during the first half of the nineteenth century. Therefore, the manufacture and use of interchangeable parts was well established long before the Ford Motor Company began operation in 1903.
 - c. No. The machine-tool industry—the mass manufacture of specialized machines for various industries—was born in the 1820s, long before the Ford Motor Company opened for operation in 1903.
 - d. No. Team production suggests that a team of workers is responsible for making and assembling the entire automobile. The Ford Motor Company was not organized in this way when it began operation in 1903.
2.
 - a. Correct. Systems of efficiency, such as those espoused by Frederick Taylor, equated time with money. As a result, the time taken to perform specific tasks became as important as the quality of the end product.
 - b. No. To increase efficiency in the workplace, work was divided into specific tasks. A worker could then specialize in the repetitious performance of a given task in as little time as possible. Such a process does not increase the value of skilled labor.
 - c. No. Efficiency in the production of a product can lead to decreased production costs, higher profits, and higher wages.
 - d. No. In many cases efficiency in production leads to a reduction in the work force. For example, after studying the shoveling of ore, Frederick Taylor designed fifteen different shovels and outlined the proper motions for using each. As a result, a work force of 600 was reduced to 140.
3.
 - a. Correct. During a time when work was seasonal and few employers hired workers year round, most workers were more concerned with getting and keeping a job than with wages and hours. These priorities hampered efforts by labor organizations to recruit workers into their ranks.
 - b. No. Although industrial wages increased during the late-nineteenth and early-twentieth century, the cost of living rose as fast or faster. Therefore, workers’ wages seldom kept pace with the cost of living and most workers had to spend a disproportionate amount of their wages on necessities.
 - c. No. Factory owners of the late-nineteenth and early-twentieth century did not generally offer pension plans or other benefits to their workers.

- d. Although the public clamored for safety regulations and some factory owners began to install safety devices in the workplace in the 1910s, for the most part the laissez-faire attitude of the era prevented passage of meaningful legislation to make the workplace safer.
4. d. Correct. Many employers of the late nineteenth century believed in the “iron law of wages.” In other words, they believed that labor is sold in the marketplace and, like any other commodity, its price (wages in this case) should be dictated by the law of supply and demand. It was further held that if workers are paid unnaturally high wages they will simply be able to support more children. That, in turn, will lead to an increase in the supply of workers and to more unemployment. Therefore, many employers held that they were actually doing workers a favor by keeping wages at a low level, in accordance with the “natural” economic law of supply and demand. In such a system, most wage earners felt trapped and exploited in a system controlled by employers.
- a. No. Many workers of the late nineteenth century were very dissatisfied with the wage system because they believed it was weighted in favor of the employer. Theoretically the wage system was based on the idea that workers were free to negotiate with the employer for the highest wages possible. However, this theory was based on the worker and the employer having equal power in such negotiations. In fact, this was not true and many workers felt at the mercy of employers.
- b. No. Competition for jobs among workers did not cause the base pay of all workers to rise steadily during the late nineteenth century, and most wage earners did not see the wage system in this way.
- c. No. Although some forward-looking thinkers of the late nineteenth century may have believed that Congress should establish a minimum wage, such a concept was beyond the frame of reference of most workers of the era.
5. c. Correct. The Court’s decisions in the *Holden*, *Lochner*, and *Muller* cases demonstrated a narrow interpretation of what constituted a dangerous job and, therefore, of which workers needed protection.
- a. No. This was not a distinction made by the Court in cases involving limitations on working hours.
- b. No. In striking down a maximum-hours law for bakers, the Court in *Lochner v. New York* held that the law violated the Fourteenth-Amendment guarantee that no state may deprive any person of property (wages) without due process of law. In this way, the Court applied the Fourteenth Amendment to state action.
- d. No. The *Lochner v. New York* case is evidence that the Court did not always uphold the regulatory powers of the states.
6. d. Correct. The Knights of Labor welcomed all workers into its ranks, including women, blacks, and immigrants, and including both skilled and unskilled workers. In contrast, the AFL allowed only skilled workers, was openly hostile to women, and often excluded immigrants and blacks.
- a. No. Neither the Knights of Labor nor the American Federation of Labor advocated the use of violence against corporate power.
- b. No. Many of the goals of the Knights of Labor were long-range, abstract, and vague. The objectives of the American Federation of Labor, in contrast, were much more specific and pragmatic.
- c. No. The Knights of Labor generally opposed strikes.

7. c. Correct. As a result of strikes and labor unrest, a sense of crisis existed at the time of the Haymarket riot (May 1886) and increased as a result of the riot. This led to the consequences stated in the answer choice.
- a. No. This answer suggests that Congress was receptive to organized labor and to its demands at the time of the Haymarket riot in 1886. Reread the section on the union movement on page 327.
- b. No. Although the Haymarket riot was falsely identified in the newspapers and in the minds of many people as an “anarchist riot,” the government did not respond by putting military forces on alert.
- d. No. As a result of its association with the Haymarket riot, the Knights of Labor was weakened rather than strengthened.
8. a. Correct. Initially, the WTUL was dominated by middle-class as opposed to working-class women. However, this changed in the 1910s.
- b. No. The leadership of the WTUL accepted the idea that women needed protection from exploitation. On these grounds it supported protective legislation for women and argued against a constitutional amendment guaranteeing equal rights to women.
- c. No. The WTUL worked for women’s suffrage.
- d. No. The WTUL did join with the Ladies Garment Workers Union in a strike against New York City sweatshops, but it did not advocate a war against capitalist society. Gradually, the union even backed away from active union organization.
9. c. Correct. Although the income of factory workers, farm laborers, and middle-class workers rose in the period from 1890 to 1920, the cost of living rose as well and usually outpaced wage increases.
- a. No. The data indicate that the wages of working-class wage earners increased between 1890 and 1920.
- b. No. The data indicate that wages increased not only for farm laborers and factory workers, but also for middle-class workers.
- d. No. We are not given enough data on the income of professionals to determine the rate of increase from 1890 to 1920. We therefore cannot logically infer from the data supplied that inflation caused professionals to suffer more than industrial workers.
10. b. Correct. Americans began to see bodily functions in a more unpleasant light as a result of two factors: (1) the germ theory of disease, which raised fears about the link between human pollution and water contamination, and (2) the indoor bathroom’s association with cleanliness and privacy.
- a. No. Most bathrooms have mirrors and mirrors make people conscious of personal appearance, but mirrors were available before indoor bathrooms.
- c. No. Although there is a certain amount of truth in this choice, it is important to remember two factors: (1) in the late nineteenth century few Americans could afford to stay in hotels; and (2) there is not sufficient evidence in the text to support this answer choice.
- d. No. The fact that indoor bathrooms became more and more common in American society in the late nineteenth and early twentieth centuries indicates that Americans were concerned about human waste as a source of infection and water contamination.

11.
 - a. Correct. Both centralized management, in the form of trusts, and centralized ownership, in the form of holding companies, were means by which business leaders of the late nineteenth century attempted to deal with the uncertainties of the business cycle.
 - b. No. Trusts and holding companies were “devices of control” within a particular industry. Businesspeople did not turn to such devices out of a desire to be more responsive to the needs of consumers.
 - c. No. Trusts and holding companies did not separate the management of production from the management of finances and were not used by businesspeople to achieve that end.
 - d. No. Trusts, which brought several companies under centralized management, and holding companies, which brought several companies under centralized ownership, did not create a more open market.
12.
 - b. Correct. Social Darwinists believed that human society should be allowed to operate in accordance with natural laws, with “survival of the fittest” being one of those laws. Therefore, they believed, wealth and power would flow into the hands of the “most capable.”
 - a. No. Social Darwinists believed that there would always be people within society who were less “fit” than others. Because of this belief, they argued that poverty would always be present.
 - c. No. Social Darwinists believed that if natural laws were allowed to operate freely, wealth would continue to be maldistributed. They did not desire, nor did they advocate, an equal distribution of wealth.
 - d. No. Social Darwinists believed that people are aggressive by nature. Therefore, if natural laws were allowed to operate freely, this aggressiveness would continue to be part of human society.
13.
 - d. Correct. Although business leaders argued against government aid to the disadvantaged, to labor unions, or to consumers, they advocated government aid to business interests in the form of protective tariffs, government loans, and the like.
 - a. No. Since most businesspeople accepted the ideas of Social Darwinism and laissez-faire conservatism, they believed that extending help to the disadvantaged was beyond the proper sphere of government.
 - b. No. In accepting the tenets of laissez-faire conservatism, most businesspeople believed that the use of government power to regulate prices would threaten the right of the producer to charge the highest price the market would bear.
 - c. No. In accepting the tenets of laissez-faire conservatism, most businesspeople stood against organized labor as a threat to the rights of both factory owners and factory workers.
14.
 - a. Correct. Ward challenged the determinism of Social Darwinism by arguing that human beings, unlike other animals, are not at the mercy of natural laws. On the contrary, they can, through cooperative activities, create a better society.
 - b. No. Lester Ward did not accept the theory, espoused by Social Darwinists, that human institutions and corporate structures are the product of an evolutionary process that follows the dictates of natural law.
 - c. No. Lester Ward did not accept the idea that a society’s economy should be allowed to operate in accordance with natural economic laws, and he rejected the notion that tampering with such laws would have disastrous consequences.

- d. No. Lester Ward believed that government, as the agent of the people, could act as a positive force for good in human society. This, he believed, entailed more than merely providing for the national defense.
15. c. Correct. In this case, the Court narrowly interpreted Congress's power to regulate interstate commerce by ruling that manufacturing (in this case the refining of sugar) took place within a state and did not fall under congressional control.
- a. No. The Court did not declare all trusts to be illegal in this case involving the so-called Sugar Trust.
- b. No. The case did not involve the Interstate Commerce Commission, which was established by Congress in 1887 to regulate the rail industry.
- d. No. The *E. C. Knight Co.* case did not deal with organized labor.