

Unit 19

Global Industrialization

Introduction to Unit

This unit explores the broad human consequences of the Industrial Revolution. Between the seventeenth and twentieth centuries, the patterns of human life around the world were transformed by rapidly accelerating changes in agriculture, manufacturing, and power. New agricultural techniques provided more food for a rapidly growing population. Remarkable machines accelerated the speed with which textiles and other goods were manufactured. The steam engine, the use of coal, and the arrivals of railroads, steamships, and telegraphs shrunk the world dramatically, tightening and strengthening connections between once-distant places. All of these innovations drastically altered the relationships between workers and work, cities and countries, products and places. Moreover, they dramatically rearranged the world's peoples in new demographic patterns as cities grew up and out; human populations shrank in some places and grew in others; local economies unfolded into regional and then world economies; and people, ideas, machines, and capital migrated from place to place.

Learning Objectives

- Investigate how the Industrial Revolution affected flows of ideology (particularly ideas about race), labor, and capital around the world.
- Investigate how industrialization affected demographic patterns around the world, such as migration, population growth, and urbanization.
- Identify some of the social and environmental consequences of industrialization.
- Analyze how the technological changes of the Industrial Revolution promoted increasing global integration as well as increasing attempts to emphasize differences between peoples.

Preparing for This Session

Read Unit 19 in the *Bridging World History* online text. You may also want to refer to some of the Suggested Readings and Materials. If you feel you need more background knowledge, refer to a college-level world history textbook on this subject (look under the index for Industrialization, Railroads, Silk [in Japan]).

Unit Activities

Before You Begin—25 minutes

Based on the following passage, predict the images—including maps and other sources—that will be used in the video to show the effects of industrialization on the world’s economy. Be sure to consider sources for areas outside of Great Britain and North America.

Industrialization linked economies more tightly together, causing some to have a dependent and inferior relationship by being on one hand the supplier of raw materials and cash crops and on the other hand the customer for manufactured goods from the industrial core countries. The new railroads were also tools of nation-building, which opened up the interiors for farming, weakened provincial rebels, and strengthened central governments. New agricultural techniques were producing increasing quantities of food for a world population that was growing quite rapidly, but at the same time, in overcrowded cities there was a nutritional crisis brewing. Throughout the Industrial Revolution, the migration of labor and capital resulted in a great cross-pollination of peoples, ideas, and technologies. The wealth of knowledge created an amazing synergy, as advances in one industry or particular social sphere in one part of the world led to advances in another industry or society thousands of miles away.

Watch the Video for “Unit 19: Global Industrialization”— 30 minutes

Activity 1: Sugar Plantations in Cuba as Industrial Concerns— 35 minutes

Eliza McHatton-Ripley, an expatriate American plantation owner, migrated to Cuba after the American Civil War. There, she discovered social and cultural conditions that challenged her assumptions about race. She wrote about her experiences in her published memoirs. In these excerpts, what assumptions does Eliza make about race and abilities? What other factors might account for the different experiences of slave and contract labor, as suggested by Eliza?

Each [coolie] ... is contracted with his own free will to do field-labor ... to be granted one day in seven to rest, two full suits of clothing, one blanket and one overcoat annually, 12 ounces of meat and two quarter pounds of ... yams or rice ... per day; comfortable living quarters; and four dollars in gold monthly. The Chinese ... were docile and industrious; they could not stand the same amount of exposure as an African, but they were intelligent and ingenious; within-doors, in the sugar factory, in the carpenter-shop, in the cooper-shop, in driving teams, they were superior to the Negro. (Eliza McHatton-Ripley, *From Flag to Flag: A Woman’s Adventures and Experiences in the South During the War, in Mexico, and in Cuba* [New York: D. Appleton and Company, 1889].)

Unit Activities, cont'd.

Look at the images of workers in Cuba. Which ones fit the passage on the previous page? If a photograph does not seem to fit McHatton-Ripley's descriptions of Chinese contract laborers in Cuba, write a description that she might opine about it. How might McHatton-Ripley's experience as a plantation owner in the American South affect her views?



Item #1274. Anonymous, CUTTING CANE ON A CUBAN SUGAR PLANTATION (1904). Courtesy of The Library of Congress.



Item #3061. Anonymous. CHINESE CHEAP LABOR IN LOUISIANA-CHINAMEN AT WORK ON THE MILLOUDON SUGAR PLANTATION (1870). Courtesy of The Library of Congress.



Item #3117. Anonymous, LOADING OX-CARTS WITH SUGAR-CANE FOR THE MILL, MARIANAO, CUBA (1899). Courtesy of The Library of Congress.



Item #3640. Anonymous, WORKING ON THE NORTH PACIFIC COAST RAILROAD AT CORTE MADERA, (1898). California Historical Society, FN-25345.

Unit Activities, cont'd.

Activity 2: Industrialization and Migration—45 minutes

Use the experience of Italian migrants to South America who worked in meat processing factories to investigate how industrialization affected demographic patterns—such as migration, population growth, and urbanization—around the world.

Innovations in communication and transportation—railroads, telegraphs, and steamships—meant displacement for some. For others, these same innovations meant new opportunities. In Argentina, Italian “gollendrinias,” or “swallows,” became the world’s first transatlantic migrant workers. These workers took advantage of the difference in the seasons and the empty steerage compartments of the new steamships to harvest the crops in both Italy and Argentina. Many also stayed in Argentina to build the railroads and the ports. Advances in science and technology often cross-pollinated each other in the nineteenth century. One example is the surprising story of beef extract: invented by a German biochemist; manufactured in Uruguay; financed by Belgian investors; marketed by a British corporation. In 1847, the German Baron Justus von Liebig developed a pure beef extract purportedly rich in protein—as this excerpt from Liebig’s correspondence suggests: “... gelatine, when taken in the dissolved state, is again converted, in the body, into cellular tissue, membrane, and cartilage; that it may serve for the reproduction of such parts of these tissues as have been wasted, and for their growth.” (Justus von Liebig, *Familiar Letters on Chemistry, and Its Relation to Commerce, Physiology, and Agriculture*, ed. John Gardner, 2nd ed., [London: 1744].)

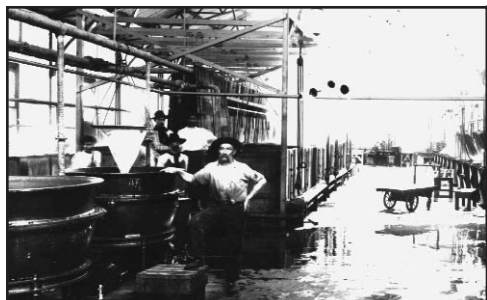
The beef extract furnished the wounded soldiers of the many European wars with a restorative that, with a little wine, immediately renewed the strength wasted by loss of blood.

With a partner, write two letters as described below.

Write a letter from a soldier in the 1870s Franco-Prussian war whose friend survived the battles because he received the extract despite an injury to his arms. In the letter, be sure to praise the virtues of the extract.

Now, write another letter for one of the workers in the Uruguayan meat plant who helps create the raw materials for the extract. This worker is an Italian immigrant who is writing home to his mother about his new job and new country. What does this worker think about the effects of industrialization on his life? (Use the photographs to the right and below to help you imagine what the male workers, especially the young men, might have thought about the value of their jobs and the problems with their working conditions.)

Compare the content and tone of the two letters. How do you think the women in the families that received the letters reacted to the letters? Compare the reactions of the women to the letter writers. Would it make any difference if the sisters or mothers were professionals in the new field of nursing?



Item #2153. Anonymous, WORKERS AT THE LIEBIG BEEF EXTRACT COMPANY, FRAY BENTOS, URUGUAY (n.d.). Courtesy of Rene Boretto, Museo de la Revolucion Industrial, Fray Bentos, Uruguay.



Item #2147. Anonymous, INSIDE THE LIEBIG BEEF EXTRACT FACTORY, FRAY BENTOS, URUGUAY (n.d.) Courtesy of Rene Boretto, Museo de la Revolucion Industrial, Fray Bentos, Uruguay.



Item #2152. Anonymous, CHILDREN WORKERS AT THE LIEBIG BEEF EXTRACT FACTORY, FRAY BENTOS, URUGUAY (n.d.) Courtesy of Rene Boretto, The Museo de la Revolucion Industrial, Fray Bentos, Uruguay.

Unit Activities, cont'd.

Activity 3: The Social and Environmental Consequences of Industrialization—45 minutes

One striking development of industrialization was the profound impact on women in society. Since men were routinely awarded superior jobs, those women who left their homes to join the work force were faced with the most menial and monotonous jobs of the industrial age. As historians Kaye Broadbent and Tessa Morris-Suzuki have noted, "Men were generally responsible for growing rice and tending the mulberry trees which provided food for the silkworms, while women looked after most aspects of the silk-raising process itself." (Kaye Broadbent & Tessa Morris-Suzuki, "Women's Work in the 'Public' and 'Private' Spheres of the Japanese Economy," *Asian Studies Review* 24, no. 2 [June 2000]: 161–73.)

With the advent of water-powered machines, silk production moved from rural households to larger workshops in small towns. The new work environment brought women and men together as laborers, and it forced a clear designation of gender-specific roles for each. This gender division became entrenched in the wake of the Meiji Restoration of 1868. By the end of the nineteenth century, women had come to dominate Japan's factory work force—but this dominance did not translate into equity in pay or work. Because men generally had more specialized positions like mule spinners, who performed the physically demanding job of spinning yarn, or machinists, they were paid far more than women well into the twentieth century.

A young Japanese woman:

The recruiter promised us that once we got to the factory we would be taught how to perform the tea ceremony, flower arranging, sewing, and arts that a girl should know, but in fact, they did not teach us anything. In the old days, we were sent out to reduce the number of people who had to be fed at home, so we didn't complain about the pay. We could eat rice, and that alone was better than staying at home. (ibid.)

Write letters from the young women in the images (below and on the following page) to their families. Use the photographs and prints to compare the lives of the silkworm factory workers with the women in the prints (the mothers with child in both the city scene and harbor view, plus the woman in the rickshaw).



Item #1085. Anonymous Japanese, SILKWORM FACTORY (c. 1880–1920). Courtesy of Photo Japan/Kenneth Hamm.

Unit Activities, cont'd.



Item #1129. Anonymous, MELANGE OF VEHICLES (1870). Courtesy of The Library of Congress.



Item #2130. Utagawa Hiroshige, STEAM TRAIN AT DOCK IN YOKOHAMA, JAPAN (1872). Courtesy of The Library of Congress.

Homework

Read Unit 19 in the online text, Section 3, Reading 3: Daniel R. Headrick, "Botany, Chemistry, and Tropical Development," *Journal of World History* 7, no. 1 (1996): 1–20 and answer the following questions.

Use the information in the article to write a speech for a Hyde Park corner soapbox advocating for botanical research. Then, write heckler speeches for:

- A conservative anti-Darwinist who opposed further scientific "manipulation" of the environment.
- A Brazilian landowner whose rubber plantations produced a big profit during World War I.
- Congolese rubber plantation workers who were treated as twentieth-century slaves by their Belgian overseers.

Optional: Visit the Web Site

Explore this topic further on the *Bridging World History* Web site. Browse the Archive, look up terms in the Audio Glossary, review related units, or use the World History Traveler to examine different thematic perspectives.

Notes
