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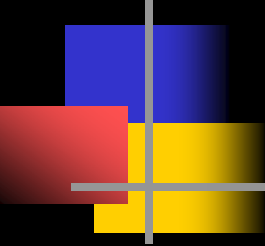
# The Impact of the Industrial Revolution

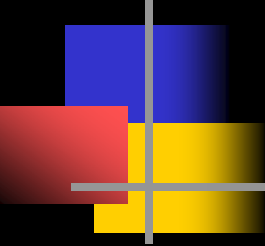


# The New Industrial Cities

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- Industrialization brought about the rapid growth of towns and the development of megalopolises such as Greater London.
- The wealthy built fine homes, churches, and public buildings; the poor crowded into cheap, shoddy row houses

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- Sudden population growth, crowding, and lack of municipal services made urban problems more serious than they had been in the past.
  - Inadequate facilities for sewage disposal, air and water pollution, and diseases made urban life unhealthy and contributed to high infant mortality and short life expectancy

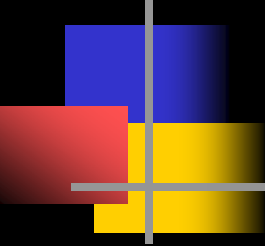
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- Reports of the horrors of slum life led to municipal reforms that began to alleviate the ills of urban life after the mid-nineteenth century

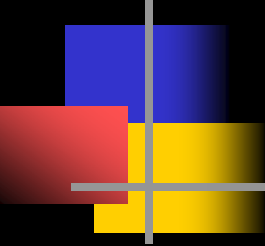


# Rural Environments

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- Almost all the land in Europe had been transformed by human activity before the Industrial Revolution, but deforestation was an ongoing problem.
- Americans transformed their environment even faster than Europeans, clearing land, using it until the soil was depleted, and then moving on

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- Industrialization relieved pressure on the English environment in some ways; agricultural raw materials were replaced by industrial materials or by imports, while the use of coke and the availability of cheap iron reduced the demand for wood

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- New transportation systems greatly changed rural life.
  - Toll roads, canals, and then railroads linked isolated districts to the great centers of commerce, industry, and population

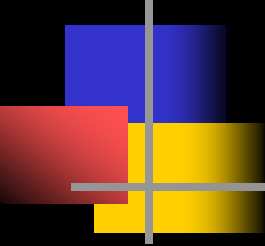


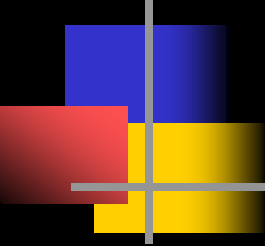
# Working Conditions

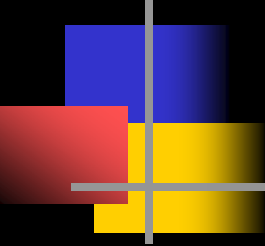
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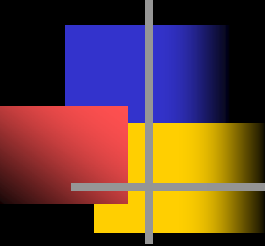
- Industrialization offered new, highly-paid opportunities for a small number of skilled carpenters, metalworkers, and machinists; but most industrial jobs were unskilled, repetitive, boring, badly paid, and came with poor working conditions
- The separation of work from home had a major impact on women and on family life



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- Women workers were concentrated in the textile mills and earned much less than men.
  - Husbands and wives worked in separate places.
  - Most of the female work force consisted of young women who took low-paid jobs as domestic servants

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- Poverty and employers' preference for child workers led to high rates of child labor.
  - In the mid-nineteenth century the British government restricted child labor, so mill owners recruited Irish immigrants instead

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- In America, the first industrialists offered good wages and decent working conditions to their women workers, but harsh working conditions, long hours and low pay soon became standard.
  - Protests by American women workers led factory owners to replace them with Irish women, who were willing to accept lower pay and worse conditions

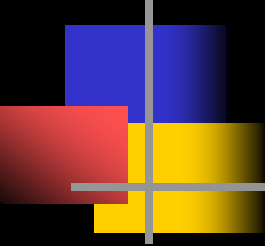
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- The Industrial Revolution increased the demand for cotton, sugar, and coffee.
  - In doing so, industrialization helped to prolong slavery in the United States and the Caribbean and to extend slavery to the coffee-growing regions of Brazil

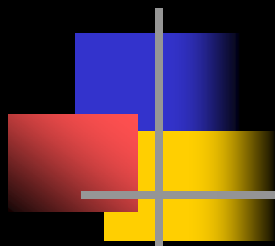


# Changes in Society

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- Industrialization increased disparities in income.
- The wages and standards of living of the workers varied with the fluctuations of the business cycle, but overall, workers' standards of living did not improve until the 1850s

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- The real beneficiaries of the Industrial Revolution were the middle classes.
  - Rising incomes allowed the middle class to build their own businesses, to keep their women at home, and to develop a moral code that stood in contrast to the squalor and drunkenness of the working class



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# New Technologies and the World Economy

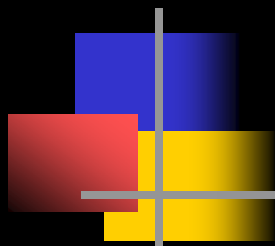


# Railroads

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- By 1850 the first railroads had proved so successful that every industrializing country began to build railroad lines.
- Railroad building in Britain, France, Germany, Canada, Russia, Japan, and especially in the United States fueled a tremendous expansion in the world's rail networks from 1850 to 1900.





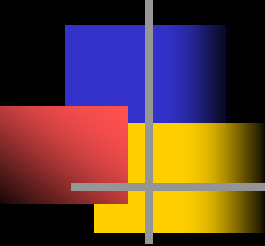
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- In the non-industrialized world, railroads were also built wherever they would be of value to business or to government
  - Railroads consumed huge amounts of land and timber for ties and bridges.
  - Throughout the world, railroads opened new land to agriculture, mining, and other human exploitation of natural resources.



# Steamships and Telegraph Cables

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- In the mid-nineteenth century a number of technological developments in shipbuilding made it possible to increase the average size and speed of ocean-going vessels.
- These developments included the use of iron (and then steel) for hulls, propellers, and more efficient engines

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- Entrepreneurs developed a form of organization known as the shipping line in order to make the most efficient use of these large and expensive new ships.
  - Shipping lines also used the growing system of submarine telegraph cables in order to coordinate the movements of their ships around the globe.



# Electricity

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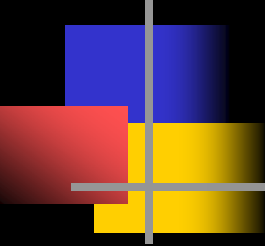
- In the 1870s inventors devised efficient generators that turned mechanical energy into electricity that could be used to power arc lamps, incandescent lamps, streetcars, subways, and electric motors for industry
- Electricity helped to alleviate the urban pollution caused by horse-drawn vehicles.
- Electricity also created a huge demand for copper, bringing Chile, Montana, and southern Africa more deeply into the world economy.

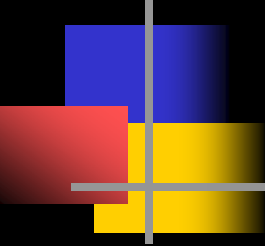


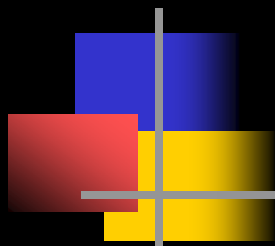
# World Trade and Finance

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- Between 1850 and 1913 world trade expanded tenfold, while the cost of freight dropped between 50 and 95 percent so that even cheap and heavy products such as agricultural products, raw materials, and machinery were shipped around the world

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- The growth of trade and close connections between the industrial economies of Western Europe and North America brought greater prosperity to these areas, but it also made them more vulnerable to swings in the business cycle.
  - One of the main causes of this growing interdependence was the financial power of Great Britain.

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- Non-industrial areas were also tied to the world economy.
  - The non-industrial areas were even more vulnerable to swings in the business cycle because they depended on the export of raw materials that could often be replaced by synthetics or for which the industrial nations could develop new sources of supply.
  - Nevertheless, until World War I, the value of exports from the tropical countries generally remained high, and the size of their populations remained moderate



# Social Changes

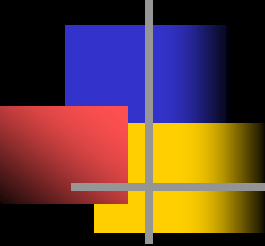


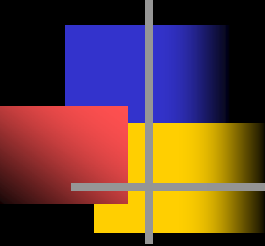


# Population and Migrations

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- Between 1850 and 1914 Europe saw very rapid population growth
- Emigration from Europe spurred population growth in the United States, Canada, Australia, New Zealand, and Argentina.
- As a result, the proportion of people of European ancestry in the world's population rose from one-fifth to one-third.

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- Reasons for the increase in European population include:
    - 1. A drop in the death rate
    - 2. Improved crop yields
    - 3. The provision of grain from newly opened agricultural land in North America
    - 4. And the provision of a more abundant year-round diet as a result of canning and refrigeration

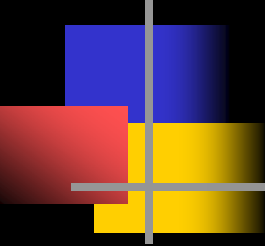
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- Asians also migrated in large numbers during this period, often as indentured laborers

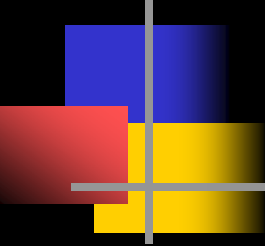


# Urbanization and Urban Environments

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- In the latter half of the nineteenth century European, North American, and Japanese cities grew tremendously both in terms of population and of size.
- In areas like the English Midlands, the German Ruhr, and around Tokyo Bay, towns fused into one another, creating new cities.

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- Urban growth was accompanied by changes in the character of urban life.
  - Technologies that changed the quality of urban life for the rich (and later for the working class as well) included:
    - 1. Mass transportation networks
    - 2. Sewage and water supply systems
    - 3. Gas and electric lighting
    - 4. Police and fire departments
    - 5. Sanitation and garbage removal
    - 6. Building and health inspection, schools, parks, and other amenities.

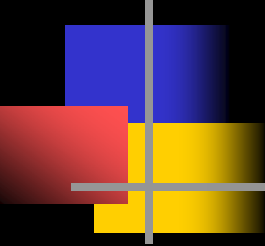
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- While urban environments improved in many ways, air quality worsened.
  - Coal used as fuel polluted the air, while the waste of the thousands of horses that pulled carts and carriages lay stinking in the streets until horses were replaced by streetcars and automobiles in the early twentieth century.



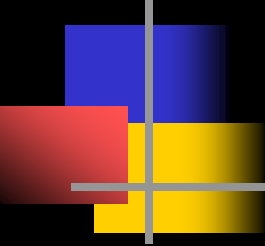
# Middle-Class Women's “Separate Sphere”

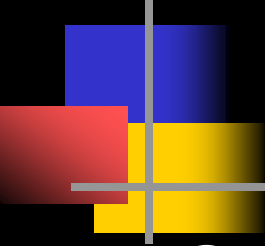
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- The term “Victorian Age” refers not only to the reign of Queen Victoria (r.1837–1901), but also to the rules of behavior and the ideology surrounding the family and relations between men and women.
- Men and women were thought to belong in “separate spheres,” the men in the workplace, the women in the home.

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- Before electrical appliances, a middle-class home demanded lots of work
  - The advent of modern technology in the nineteenth century eliminated some tasks and made others easier
  - But rising standards of cleanliness meant that technological advances did not translate into a decrease in the housewife's total workload.



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- The most important duty of middle-class women was to raise their children.
  - Victorian mothers lavished much time and attention on their children, but girls received an education very different from that of boys.

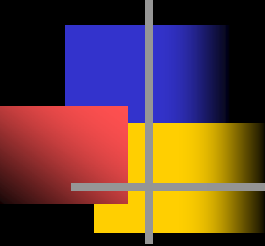
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- Governments enforced legal discrimination against women throughout the nineteenth century
  - Society frowned on careers for middle-class women.
  - Women were excluded from jobs that required higher education
  - Teaching was a permissible career, but women teachers were expected to resign when they got married.
  - Some middle-class women were not satisfied with home life and became involved in volunteer work or in the women's suffrage movement.

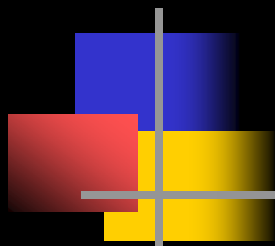


# Working-Class Women

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- Working-class women led lives of toil and pain.
- Many became domestic servants, facing long hours, hard physical labor, and sexual abuse from their masters or their masters' sons

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- Many more young women worked in factories, where they were relegated to poorly paid work in the textiles and clothing trades.
  - Married women were expected to stay home, raise children, do housework, and contribute to the family income by taking in boarders, doing sewing or other piecework jobs, or by washing other people's clothes.



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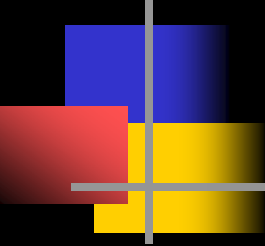
# Socialism and Labor Movements



# Marx and Socialism

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- Socialism began as an intellectual movement.
- The best-known socialist was Karl Marx (1818–1883) who, along with Friedrich Engels (1820–1895) wrote the *Communist Manifesto* (1848) and *Das Kapital* (1867).
- Marx saw history as a long series of clashes between social classes

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- Marx's theories provided an intellectual framework for general dissatisfaction with unregulated industrial capitalism
  - Marx took steps to translate his intellectual efforts into political action

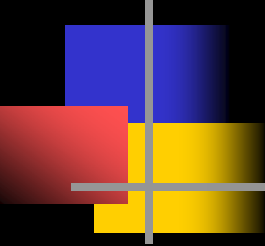


# Labor Movements

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- Labor unions were organizations formed by industrial workers to defend their interests in negotiations with employers.
- Labor unions developed from the workers' "friendly societies" of the early nineteenth century and sought better wages, improved working conditions, and insurance for workers



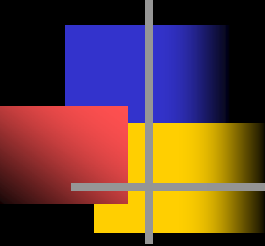
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- During the nineteenth century workers were brought into electoral politics as the right to vote was extended to all adult males in Europe and North America.
  - Instead of seeking the violent overthrow of the bourgeois class, socialists used their voting power in order to force concessions from the government and even to win elections
  - The classic case of socialist electoral politics is the Social Democratic Party of Germany

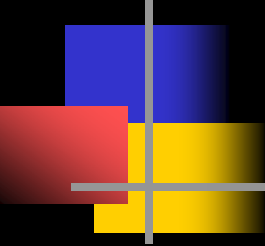


# Successful Modernization → Japan

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- In the early nineteenth century, Japan was ruled by the Tokugawa shogunate and local lords had significant autonomy.
- This system made it hard for Japan to coordinate its response to outside threats

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- In 1853, the American Commodore Matthew C. Perry arrived in Japan with a fleet of steam-powered warships and demanded that the Japanese open their ports to trade and American ships

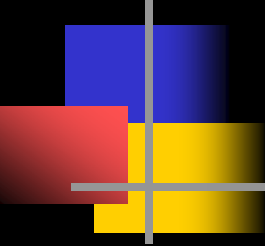
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- Dissatisfaction with the shogunate's capitulation to American and European demands led to a civil war and the overthrow of the shogunate in 1868



# The Meiji Restoration and the Modernization of Japan, 1868–1894

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- The new rulers of Japan were known as the Meiji oligarchs
- The Meiji oligarchs were willing to change their institutions and their society in order to help transform their country into a world-class industrial and military power.
- The Japanese had a long history of adopting ideas and culture from China and Korea; in the same spirit, the Japanese learned industrial and military technology, science, engineering, and even clothing styles and pastimes from the West.

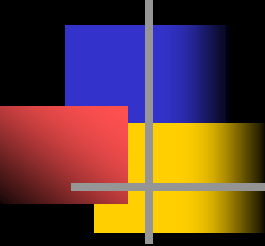
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- The Japanese government encouraged industrialization, funding industrial development with tax revenue extracted from the rural sector and then selling state-owned enterprises to private entrepreneurs.

# Flawed Modernization → Russia

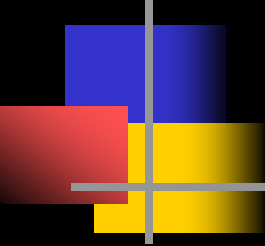


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- Ethnic diversity contributed to instability in Russia.
- Attempts to foster Russian nationalism and to impose the Russian language on a diverse population proved to be divisive

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- In 1861 Tsar Alexander II emancipated the peasants from serfdom, but did so in such a way that it only turned them into communal farmers with few skills and little capital.
  - Tsars Alexander III (r. 1881–1894) and Nicholas II (r. 1894–1917) opposed all forms of social change.



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- Russian industrialization was carried out by the state, and thus the middle-class remained small and weak while the land-owning aristocracy dominated the court and administration.
  - Defeat in the Russo-Japanese War (1904–1905) and the Revolution of 1905 demonstrated Russia's weakness and caused Tsar Nicholas to introduce a constitution and a parliament (the Duma), but he soon reverted to the traditional despotism of his forefathers.