

Background to the Industrial Revolution

- ◉ Commercial Revolution
 - Europeans expanded their power worldwide
 - Colonies in the Americas and Asia
 - Increased trade and commerce
 - Guild system could not meet the demands of increasing numbers goods
- ◉ Scientific Revolution (Enlightenment)
- ◉ Intellectual Revolution (Renaissance)
- ◉ Atmosphere of discovery and free intellectual inquiry
 - Encouraged learning and the search for better and newer ways of doing things

Significance of the Industrial Revolution

- ◉ An ancient Greek or Roman would have been just as comfortable in Europe in 1700 because daily life was not much different –
- ◉ The Industrial Revolution changed human life drastically. More has changed in the last 250+ years than in the previous 2500+ years

What was the Industrial Revolution?

- ◉ The Industrial Revolution was a fundamental change in the way goods were produced, from human labor to machines
- ◉ The more efficient means of production and subsequent higher levels of production triggered far-reaching changes to industrialized societies

The Industrial Revolution


- ◉ Machines were invented which replaced human labor
- ◉ New energy sources were developed to power the new machinery – water, steam, electricity, oil (gas, kerosene)
 - Some historians place advances in atomic, solar, and wind energy at the later stages of the Industrial Revolution
- ◉ Increased use of metals and minerals
 - Aluminum, coal, copper, iron, etc.

The Industrial Revolution

- ◉ Transportation improved
 - Ships
 - Wooden ships → Iron ships → Steel ships
 - Wind-powered sails → Steam-powered boilers
 - Trains
 - Automobiles
- ◉ Communication improved
 - Telegraph
 - Telephone
 - Radio

Developments

- ⊙ **Mass production of goods**
 - Increased numbers of goods
 - Increased diversity of goods produced
- ⊙ **Development of factory system of production**
- ⊙ **Rural-to-urban migration**
 - People left farms to work in cities
- ⊙ **Development of capitalism**
 - Financial capital for continued industrial growth
- ⊙ **Development and growth of new socio-economic classes**
 - Working class, bourgeoisie, and wealthy industrial class
- ⊙ **Commitment to research and development**
 - Investments in new technologies
 - Industrial and governmental interest in promoting invention, the sciences, and overall industrial growth



Change in Production

	Domestic System	Factory System
Methods	•Hand tools	•Machines
Location	•Home	•Factory
Ownership and Kinds of Tools	•Small hand tools owned by worker	•Large power-driven machines owned by the capitalist
Production Output	•Small level of production •Sold only to local market •Manufactured on a per-order basis	•Large level of production •Sold to a worldwide market •Manufactured in anticipation of demand
Nature of Work Done by Worker	•Worker manufactured entire item	•Worker typically made one part of the larger whole •Henry Ford's assembly line (early 20 th century) kept workers stationary
Hours of Work	•Worker worked as much as he/she would and could, according to demand	•Worker worked set daily hours
Worker Dependence on Employer	•Worker had multiple sources of sustenance—other employers, own garden or farm, and outside farm labor	•Worker relied entirely on capitalist for his/her income—urban living made personal farming and gardening impractical

England: Birthplace of the Industrial Revolution

Merchants had extra money or **capital to invest** in the factory system for example buy buildings, machinery, and raw materials

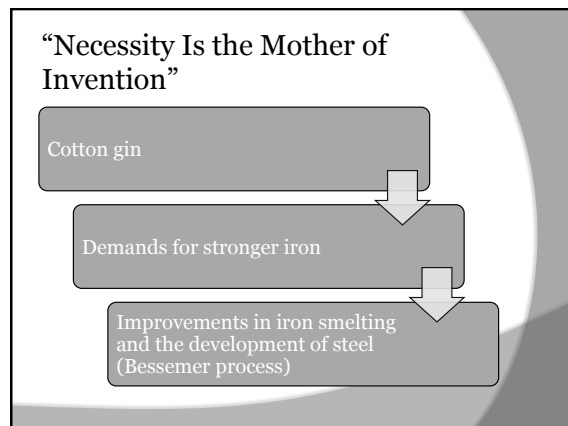
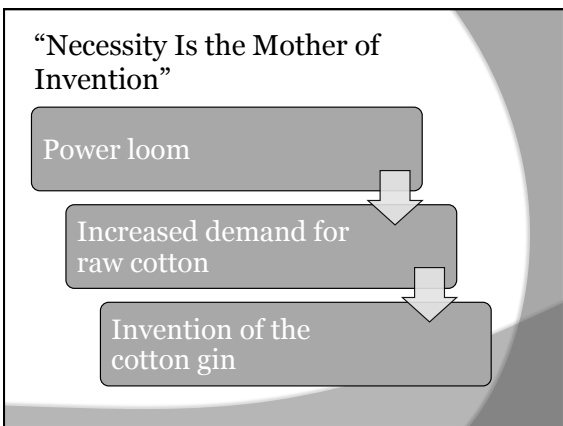
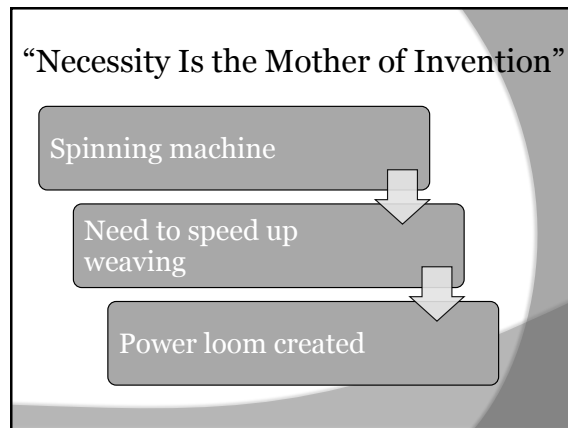
England had more colonies than any other nation which allowed for access to **more raw materials and bigger markets** to sell its goods.

England had Raw materials for production like coal and iron.

Workers- Serfdom and guilds ended earlier which displaced many workers and required them to look for work

Merchant marine- Had the largest navy which allowed for large amounts of trade to and from the country.

Geography- England is an island which allows for easy access to the sea also the government was fairly stable.



“Necessity Is the Mother of Invention”

As more steam-powered machines were built, factories needed more coal to create this steam



Mining methods improved to meet the demand for more coal

- The process of inventing never ends
- One invention inevitably leads to improvements upon it and to more inventions
- The First industry to industrialize was the textile industry.

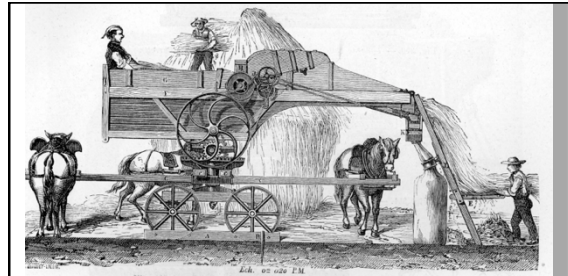


Fig. 219. — Battense Daney à massage direct placé sous la battense.

THE AGRICULTURAL REVOLUTION

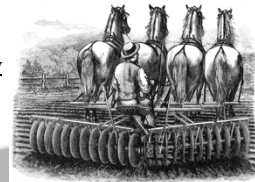
The Agricultural Revolution



- Agricultural methods had not changed much since the Middle Ages
- Tools – hoe, sickle, wooden plow
- No significant surplus – only enough food was made to feed the population

Agriculture and Industry

- The Industrial Revolution brought machinery to farms
- The use of farm machinery meant that fewer farm workers were needed
- Displaced farm workers moved to the cities to find work in factories
 - This is called rural-to-urban migration
- Growing populations in urban cities required farmers to grow more crops
 - Food to eat
 - Raw materials (like cotton) for textile factories



Agricultural Science

- Agriculture became a science during the Agricultural Revolution
- Farmers and governments invested in agricultural research
 - Established agricultural schools, societies, and experimental stations
- Progress in agriculture
 - Pesticides, stock breeding, new foods, food preservation, new farming techniques and irrigation methods, frozen foods
- Result
 - Today, in the industrialized world, much more food is grown by far fewer farmers than was grown 200 years ago (or is grown today in the non-industrialized world)

THE RESULTS OF THE INDUSTRIAL REVOLUTION

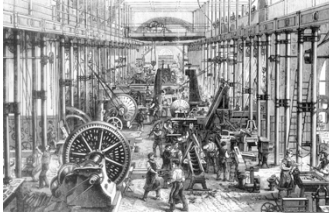


Results of the Industrial Revolution

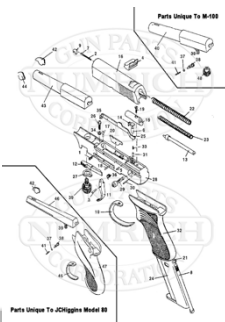
Economic Changes	<ul style="list-style-type: none"> • Expansion of world trade • Factory system • Mass production of goods • Industrial capitalism • Increased standard of living • Unemployment
Political Changes	<ul style="list-style-type: none"> • Decline of landed aristocracy • Growth and expansion of democracy • Increased government involvement in society • Increased power of industrialized nations • Nationalism and imperialism stimulated • Rise to power of businesspeople
Social Changes	<ul style="list-style-type: none"> • Development and growth of cities • Improved status and earning power of women • Increase in leisure time • Population increases • Problems – economic insecurity, increased deadliness of war, urban slums, etc. • Science and research stimulated

Economic Changes:

- Increased production meant that industrialized nations produced more than could be consumed internally
- Sought new foreign markets




Factory System Possible Due to Standardized Parts



- Standardized, or interchangeable, were created to make a lot of duplicate products
- Manufacturers decided upon standard sizes for their goods and created large quantities of components
 - Such as deciding that a musket barrel should be two feet long and making 100 duplicate musket barrels, then deciding that triggers for these muskets should be two inches tall and making 100 2-inch triggers


Benefits of the Assembly Line

- Developed by Henry Ford between 1908 and 1915
 - Assembly Line-Product moves along a conveyor belt, with each worker contributing labor along the way to create the finished product
- Assembly lines bring the work to the worker, saving time
- Each worker specializes in one part
- Focusing on one aspect of production can be repetitive but can also make a worker an expert at that particular aspect



Economic Changes: Industrial Capitalism and the Working Class


- Pre-Industrial Revolution rural families did not rely solely on wages for sustenance
 - Owned their own farms or gardens where they raised most of their own food
 - Made their own clothing
 - Unemployment was rare
- Industrialization destroyed workers' independence
 - Workers in cities did not have the means to grow their own food or make their own clothing
 - Workers relied entirely upon their employers for wages with which they bought everything they needed



Factory workers during Industrial Revolution

Economic Changes: Industrial Capitalism

- The financial investments required to run large industries brought about modern capitalism
- Capital – wealth that is used to produce more wealth
 - Small manufacturers cannot compete with large corporations
 - Consumers must buy from large corporations
 - Workers have had to fight for decent wages and working conditions
 - Large corporations can influence the government



Political Changes: Decline of Landed Aristocracy



- ◉ Before the Industrial Revolution – power was in the hands of the landed aristocracy and monarchs
- ◉ Industrial Revolution – factories became more valuable than land
 - Wealth of the aristocracy dwindled
 - Growing middle class, with wealth based in industry, wanted more political power

Political Changes: Growth and Expansion of Democracy

- ◉ The middle class grew during the Industrial Revolution
 - Gained more rights
- ◉ The working class effectively began with the Industrial Revolution
 - The working class fought for rights in the workplace
 - The working class demanded and earned a voice in government

Political Changes: Increased Government Involvement in Society

- ◉ Government actions to help workers
 - Legalization of unions
 - Established minimum wage
 - Standards for working conditions
 - Forms of social security
- ◉ Government actions to help consumers
 - Regulation and inspection of goods and foodstuffs
- ◉ Government actions to help businesses
 - Laws to stop or limit monopolies
 - Some governments took control of vital industries

Political Changes: Increased Power of Industrialized Nations

- ◉ With wealth came power
- ◉ Imperialism expanded
- ◉ Imperialistic, industrialized nations built up their navies to gain and protect assets

Political Changes: Nationalism and Imperialism Stimulated

- ◉ Increased production meant an increased need for raw materials
- ◉ Industrialized nations expanded their colonial empires and spheres of influence in their search for more raw materials
 - Worldwide scramble for colonies
 - Fought the peoples in the lands they controlled
 - Fought one another for colonies and spheres of influence
- ◉ Governments saw imperialist expansion as the key to continued industrial growth and wealth

Social Changes: Development and Growth of Cities

Paris	London
<ul style="list-style-type: none"> • 18th century - 600,000 people • Circa 1900 – over 2,714,000 in the Paris urban area • Circa 2000 – over 11,000,000 in the Paris urban area 	<ul style="list-style-type: none"> • 18th century – 500,000 people • Circa 1900 – over 6,200,000 in the London urban area • Circa 2000 - over 7,100,000 in the London urban area

- Rural-to-urban migrants – people who left the countryside to live in cities
- A sign of an industrialized nation is that a large proportion of the population lives and works in urban areas

Social Changes: Improved Status and Earning Power of Women

- ⊙ Initially, factory owners hired women and children because they worked for lower wages
 - This brought many women, otherwise impoverished, to cities to work in factories
 - Governments limited the work of children and, at times, of women
- ⊙ Women gained economic power and independence
 - Before industrialization, it was almost impossible for a woman to remain single and live on her own
 - Factories and urban centers attracted women in large numbers
 - Women fought for and eventually gained political rights

Social Changes: Increase in Leisure Time

- ⊙ Labor-saving devices invented and produced
 - Vacuum cleaners
 - Washing machines
 - Refrigerators
- ⊙ Entrepreneurs and inventors developed new forms of entertainment
 - Moving pictures
 - Amusement parks
- ⊙ Birth of the weekend
 - Traditionally, Western nations had Sunday (the Christian day of rest) as the only day off from work
 - Saturday was added (after the struggles of Jewish labor unionists) to accommodate the religious observances of Jewish factory workers (whose Sabbath, or *Shabbat*, runs from Friday at sundown to Saturday at sundown)

Social Changes: Population Increases



Europe	<ul style="list-style-type: none"> • 1750 – 144,000,000 • 1900 – 325,000,000
England	<ul style="list-style-type: none"> • 1750 - 11,000,000 • 1900 - 30,000,000

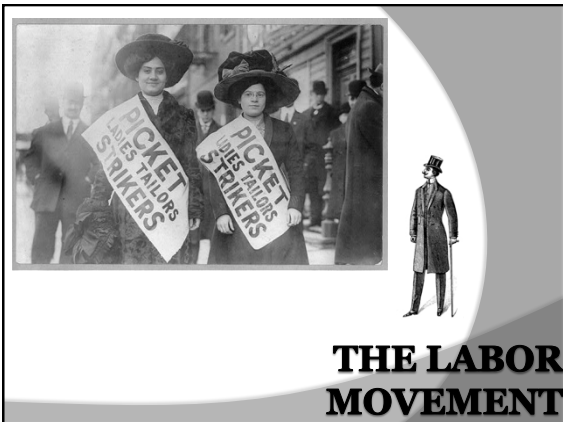
- Many people immigrated to industrialized countries
 - Numerous nationalities to the United States
 - Irish to Manchester and Liverpool in England
- Population growth in industrialized nations required growing even more food

Social Changes: Problems

- ⊙ Monotony of assembly lines and factory life
- ⊙ Loss of craftsmanship in manufactured goods
- ⊙ War became more deadly as weapons became more technologically advanced and were mass produced
- ⊙ Economic insecurity – workers relied entirely on their jobs for sustenance

Social Changes: Science and Research Stimulated

- ⊙ Scientific and technological discoveries became profitable instead of simply beneficial
- ⊙ Companies and governments were willing to invest in research and development
- ⊙ Patent law
 - Came into its modern form under England's Queen Anne (reigned 1702-1714)
 - Inventors have the exclusive right to produce their new inventions for a period of time



Changing Employee-Employer Relationships

- ⊙ Domestic system
 - Workers and employers knew each other personally
 - Workers could aspire to become employers
- ⊙ Factory system
 - Workers no longer owned the means of production (machinery)
 - Employers no longer knew workers personally
 - Factories often run by managers paid by the corporation
 - Relationships between employers and employees grew strained

Problems of the Factory System

- ⊙ Factories were crowded, dark, and dirty
- ⊙ Workers toiled from dawn to dusk
- ⊙ Young children worked with dangerous machinery
- ⊙ Employment of women and children put men out of work
 - Women and children were paid less for the same work
- ⊙ Technological unemployment – workers lost their jobs as their labor was replaced by machines

Poor Living Conditions

- ⊙ Factories driven solely by profit
 - Businesses largely immune to problems of workers
- ⊙ Factory (also company or mill) towns
 - Towns built by employers around factories to house workers
 - Workers charged higher prices than normal for rent, groceries, etc.
 - Workers often became indebted to their employers
 - Created a type of forced servitude as workers had to stay on at their jobs to pay their debts
 - Considered paternalistic by workers
 - Some employers had workers' interests at heart
 - But workers wanted to control their own lives

Slum Living Conditions

- ⊙ Factory towns – often built and owned by factories
 - Not a strange concept to rural-to-urban migrants who were used to living on a lord's estate or property
 - Full of crowded tenements
 - Few amenities
- ⊙ Tenements – buildings with rented multiple dwellings
 - Apartment buildings with a more negative connotation
 - Overcrowded and unsanitary
- ⊙ Workers were unsatisfied both inside and outside the factories

Rise of Labor Unions

- ⊙ Before labor unions, workers bargained individually – “individual bargaining”
 - Before factories, a worker could bargain for better wages and working conditions by arguing his or her particular skills
 - But in factories, work is routine and one worker can easily replace another
- ⊙ With labor unions, workers bargained together as a group, or collective – “collective bargaining”
 - Organized groups of workers elected leaders to bargain on their behalf
 - Used tools (such as strikes) to gain rights

Weapons Used by Unions and Employers

Weapons Used by Employers

- At-will employment
- Blacklists
- Company unions
- Individual bargaining
- Injunctions
- Laws that limit union activities
- Lockouts
- Open shops
- Outsourcing
- Relocation
- Right-to-work laws
- Threat of foreign competition
- Welfare capitalism
- Yellow-dog contracts

Weapons Used by Unions

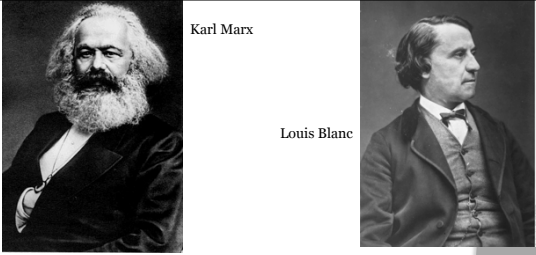
- Boycotts
- Check-offs
- Closed shops
- Collective bargaining
- Direct political action
- Favorable labor legislation
- Feather-bedding
- Lobbying
- Picketing
- Sabotage
- Strikes
- Union label
- Union shops

Legal Protections for Workers

- ⊙ Limited hours for women
 - Later – equal pay for equal work
- ⊙ Eventual end to child labor
 - Schools and requirements for school attendance grew as children were removed from the workforce
- ⊙ Health and safety codes
- ⊙ Minimum wage
- ⊙ Legalization of unions

Rights of Female and Child Workers

- ⊙ Women and children could legally be paid less than men for the same work
 - Factory owners were more willing to hire them
 - Male workers grew resentful
- ⊙ English child laborers
 - England had a history (going back to the 17th century) of training pauper children (even those younger than five years old) in a trade
 - Poor children followed their mothers into factories
- ⊙ Early male-dominated unions fought to banish women and children from the workplace
 - Eventually this strategy was abandoned
 - Women eventually won right to equal pay for equal work
 - Though women today, in reality, still earn less than men at the same types of work



Karl Marx

Louis Blanc

THE COOPERATIVE MOVEMENT AND SOCIALISM

Cooperatives

- ⊙ First cooperative – 1844 in Rochdale, England
 - Formed to fight high food costs
 - 30 English weavers opened a grocery store with \$140
 - Bought goods at wholesale
 - Members of cooperative bought goods at cost
 - Non-members paid “retail”
 - Profits split among members
 - By 1857 – over 1000 members and £100,000 in annual profits
- ⊙ Growth of cooperatives
 - Spread to other industries – banking, building, insurance, printing, etc.
 - By 1900 – 20% of Great Britain’s population had joined a cooperative
 - Concept spread internationally

Socialism

- ⊙ **Socialists** – viewed the capitalist system as inherently wrong
 - Belief that capitalism is designed to create poverty and poor working conditions because of its end goal of earning maximum profits for investors
- ⊙ **Socialism** – government owns the means of production
 - Belief that if the government (“the people”) owns the means of production, these factories and industries will function in the public (as opposed to private) interest

Early Socialist Movement

- ⊙ First socialists were Utopians
 - Strove to create a fair and just system
 - Community divided tasks and rewards equitably
- ⊙ Robert Owen
- ⊙ Charles Fourier
- ⊙ Claude Saint-Simon
- ⊙ Louis Blanc

Robert Owen (1771-1858)

- ⊙ Utopian socialist
- ⊙ Owned a textile factory in New Lanark, Scotland
- ⊙ Set up a model community in New Harmony, Indiana
- ⊙ Decreased working hours
- ⊙ Improved working conditions and employee housing
- ⊙ Shared management and profits with employees
- ⊙ Proved that a socialist-based company could be profitable

Charles Fourier (1772-1837)

- ⊙ French philosopher
- ⊙ Coined the term *féminisme*
- ⊙ Advocated concern and cooperation as the means to create social harmony
- ⊙ Considered poverty to be the main cause of society's problems
- ⊙ Envisioned workers (paid at least a minimum wage) living in "phalanxes" – communities living in a large shared structure

Claude Henri de Saint-Simon

- ⊙ 1760-1825
- ⊙ As a young man he was in the Thirteen Colonies as part of the French assistance effort during the American Revolution
- ⊙ French socialist philosopher
- ⊙ Believed all human beings naturally greedy and eager to obtain wealth and higher social positions
 - These tendencies were to be eradicated through education
- ⊙ Advocated an end to inheritances
 - Movement of wealth from rich, powerful families to the state, which is an instrument of the people

Louis Blanc (1811-1882)

- ⊙ French socialist philosopher and politician
- ⊙ Blamed society's ills on the pressure of competition
- ⊙ "From each according to his abilities, to each according to his needs."
- ⊙ Came to political power during the Revolution of 1848
 - Instituted labor reforms – believed everyone had the right to work
 - Terrible June Days – forced from power after Blanc's chief rival let Blanc's public workshops (designed to give work to the unemployed) fail
 - Returned to France, restored to power, and given a state funeral after his death
- ⊙ His writings greatly influenced later socialists

Karl Marx (1818-1883)

- ⊙ German socialist (communist) philosopher
- ⊙ Forced to leave Prussia for articles attacking the Prussian government
- ⊙ Relocated to France where he was considered too radical
 - Wrote *Communist Manifesto* with Friedrich Engels (1848)
- ⊙ Relocated to England where he lived out the rest of his life
 - Wrote *Das Kapital* – the "bible" of socialism (1867)
- ⊙ "Religion is the opiate of the people."
 - Belief that religion is designed to keep people submissive to those in power by promising them that their reward is in heaven

Marxism – Communism

Economic Interpretation of History	<ul style="list-style-type: none"> • Economic changes lead to historical changes. • Historically, the wealthy classes have held all power.
Class Struggle	<ul style="list-style-type: none"> • History has been a struggle between the rich and the poor. • In the Industrial Revolution, the struggle is between the capitalists (owners of the means of production) and the proletariat (workers).
Surplus Value	<ul style="list-style-type: none"> • Workers produce all wealth but receive only enough to survive. • "Surplus value" (profit) of the workers' labor goes to the capitalists.
Inevitability of Socialism	<ul style="list-style-type: none"> • Industrial wealth leads to the concentration of wealth among fewer and fewer capitalists, while the living and working conditions of the proletariat grow worse. • The proletariat will eventually rebel and create a socialist state.

Socialist and Communist Political Parties

- ⊙ First International
 - Founded by Marx and others in 1864
 - International Workingmen's Association
 - Urged proletariat to overthrow capitalism worldwide
 - Broke apart in 1873
- ⊙ Second International
 - Founded in 1889
 - National parties more concerned with the politics of their respective nations
 - Broke apart during World War I
- ⊙ Russian Revolution (1917)
 - Communists – known as *Bolsheviks*, led by Vladimir Lenin, came to power following the overthrow of the tsar
- ⊙ Left and right wings
 - Socialists – right wingers – advocated socialist reforms through voting
 - Communists – left wingers – advocated socialist reforms through revolution
 - Political parties of both types have existed throughout Europe, the United States, and all over the world since around the turn of the last century

Soviet-backed Communism

- ⊙ Russian communism
 - Bolsheviks (Communists or Reds) won the Russian civil war against the Whites
 - World's first socialist/communist state
- ⊙ Comintern – Communist International
 - Founded in Russia (Soviet Union) in 1919
 - Sought to spread worldwide communist revolution
 - Disbanded during World War II
- ⊙ Cominform – Communist Information Bureau
 - Founded in Soviet Union in 1947
 - Disbanded in 1956 as part of de-Stalinization
- ⊙ Soviet Union (and later China) spread communism through satellite states and via proxy wars during the Cold War

Syndicalists and Anarchists

- ⊙ Syndicalism and anarchism enjoyed popularity during the late 1800s and early 1900s
- ⊙ Syndicalism
 - Businesses and distribution of income managed by trade unions
 - Unions exist separate from the state as opposed to being part of the state
- ⊙ Anarchism
 - Belief that all governments are bad for the people
 - Advocates direct action to remove all forms of government
 - Various individual ideologies for post-government societal organization

Social Catholic Movement

- ⊙ Opposed to the atheism of socialism
 - Yet also opposed to uncontrolled capitalism
- ⊙ Pope Leo XIII
 - Advocated Catholic socialism in 1891 through his support of workers' associations
- ⊙ Pope Pius XI
 - 1931 – condoned Catholic socialism while condemning communism
 - Stated that workers should share in the profits and management of industry
- ⊙ Followed by like-minded Protestant organizations
- ⊙ Numerous Christian-based socialist political parties still active in Europe