AP Exam Review Unit Six

The Industrial Revolutions and 19th Century Social Life

Ca. 1780-1900

THE INDUSTRIAL REVOLUTION

- The industrial revolution began in England in the mid 18th century, but many of its effects were not felt on the continent until the 19th century.
- Why important?
  - Shift from human-made manufactured good to machine-made manufactured goods
    - Use of steam engine was the crucial turning point!!!
  - As a part of the "Dual Revolution", it ushered in the modern age!!!
    - Shift from a pre-modern agricultural society to a modern industrial society
    - Contributed to the growth of the bourgeois class, who in turn demanded a greater role in politics

Roots of the Industrial Revolution

- Commercial Revolution
  - Availability of capital due to growth of capitalism & trade
  - Old Imperialism increased potential markets
- Scientific Revolution
  - First wave of technological advances crucial to industrial age
- Agricultural Revolution
  - Enclosure acts provided cheap labor & urbanization
  - Increase in population provided larger markets
- Cottage Industry
  - High demand for cloth was met through advances in technology (foundation of Industrial Revolution)

Why England?

- Land and Geography
  - Crucial supply of coal
  - Raw materials from overseas colonies
  - Isolation provided for **political stability**
  - Waterways offered effective internal transportation
- Human Resources
  - plentiful supply of workers (Eng. Population doubled between 1700 & 1800), and Enclosure Acts pushed small farmers off the land
- Capital
  - Commercial Revolution, especially through Atlantic System, brought large surplus of wealth to state banks that provided **economic stability**
  - Growing class of risk-taking bourgeois entrepreneurs
- Politics
  - Liberal government ready to further the interests of the capitalists
  - Strong navy provided **political stability** and protection
  - Success in the colonial wars of the 1700s
- Demand
  - **Large markets** existed in Britain, Continental Europe, and its colonial markets overseas

Technological Revolution in Textile Industry

- Cottage Industry
  - John Kay's Flying Shuttle 1733
  - James Hargreaves' Spinning Jenny 1764
- Factory System (Water-powered)
  - Richard Arkwright's Water Frame 1769
  - Samuel Crompton's Spinning Mule 1779
- Factory System (Steam-powered)
  - James Watt's Steam Engine 1769
  - Edmund Cartwright's Power Loom 1784

Revolution in Energy and Heavy Industry

- Due to lack of timber, England began using coal, rather than wood, to power the steam engine!
- But getting it was inefficient with the old steam engine!
  - Then, James Watt 1769!!!
- Henry Cort's Puddling Furnace allowed for the use of coke (a more refined version of coal) to smelt pig iron
  - This created a much stronger, durable, and flexible iron product!
  - Beginning of the Age of Heavy Industry: Provided the material that made the machines of the Industrial Age

Revolution in Transportation

- Cause: Steam power!!!
- Steamboats
  - First steamship crossed the Atlantic in 1838
- Locomotive
  - First railroad established by George Stephenson from Liverpool to Manchester in 1830
- Effects:
  - Reduction in cost of shipping
  - Conquest of distance
  - Expansion of markets
  - Furthered industrialization process
  - Facilitated the growth of an urban working class

Britain in 1850

- Crystal Palace demonstrated Britain's economic dominance
  - Produced 2/3 of world's coal
  - Produced ½ of world's iron
  - Produced ½ of world's cotton cloth
  - Massive growth in population, yet even greater growth in economic production
- The natural world had finally been conquered by mankind!!!
  - Or, so they thought!

Continental Industrialization

- Why did it take so long?
  - Lack of efficient transportation
  - Internal tariffs increased costs and prices
  - Existence of guilds hampered the growth of entrepreneurs
  - Continental entrepreneurs were more thrifty and took less risks than did their British counterparts
  - **The French Revolution and Napoleonic Era brought political and economic instability to Europe!**

Continental Industrialization

- By 1815, Continental Europe had to overcome four main challenges:
  - Britain’s dominance of the market
  - Britain’s technological superiority
  - Lack of capital
  - Resistance to change

Agents of Industrialization

- The Continent had 3 key agents of industrialization:
  - New technology did not need to be developed, but only “borrowed” from Britain
  - Strong governments capable of encouraging industrial growth
    - Friedrich List’s Economic Nationalism leads to the creation of the Zollverein!!
  - Creation of corporate banks that also encouraged industrial growth
    - Credit Mobilier and Limited Liability!

Variations in Continental Industrialization

- Belgium, Holland, and France began their revolutions in the period 1810-1820
- Germany, Austria, and Italy began their revolutions around the mid-19th century
  - By 1900, Germany had surpassed Britain as the most powerful industrial country in Europe
  - Why? Resources in Ruhr Valley and Silesia!!!!
- Eastern Europe and Russia industrialized near the end of the 19th century

- Major difference with Britain:
  - Europe's IR focused more on Heavy Industry while Britain's IR focused more on the Textile Industry

Social Implications of the IR

- Population growth: British population tripled between 1800 & 1900.
  - Urbanization led to more influence by the middle class & eventually the working class.
- Breakdown of the family as cottage industries are replaced by the factory system.
  - “Separate Spheres” develop
- Landed aristocracy threatened by the growing wealth & power of the industrialists.
  - “Golden Age of the Middle Class” – Reform Bill of 1832
  - Formal education as means of advancement
  - By mid-century, social structure became more rigid as middle class became property owners!

Living Conditions of the Proletariat

- Urbanization
  - Infrastructure could not handle the migration → Declining standards of living
- Spread of disease, like cholera!
  - Life expectancy in cities was roughly half that in rural areas
- Living conditions will not improve until the second half of the nineteenth century as governments become more responsive to the needs of its citizens and real wages increase for the urban working class

Working Conditions of the Proletariat

- New monotonous type of work
  - Workers received low, often subsistence-level wages & worked in often unsafe conditions.
  - Men, women, and children often worked 16-18 hour days.
  - Work became impersonal and routine was much different from rural life
- Exploitation of child labor
  - First factories resembled poorhouses and cheap orphans could be used

Labor Reform

- Sadler Commission
  - Helped initiate legislation to improve conditions in factories
- Factory Act of 1833
  - Children under 9 were required to attend school
  - Children 9-13 could only work 8 hours/day
  - Children 14-18 could only work 12 hours/day
- Mines Act of 1842
  - Prohibited all boys under age 10 and all females from working underground
- Ten Hours Act of 1847
  - Limited work day of women and children to 10 hours

Social Effect of Labor Reform

- Cottage Industries → Family Business
- First factories → Family business
- By mid-century, “Separate Spheres”, or the sexual division of labor, developed
  - Factory wages for males increased and led to development of “Breadwinner” role
  - Married women became associated solely with domesticity

Labor Conditions

- Urban workers followed three methods to improve their conditions (which they did not experience until after 1850):
  - Violence: some sabotaged machines & killed bosses, but this was not successful in changing conditions.
    - Example: Luddites!
  - Unions: Unions were initially outlawed in England & France, but were finally successful by the late 1800's
    - Example: Combination Acts of 1799, but repealed in 1824
    - Example: Robert Owen's Grand National Trades Union failed and future unions will be craft-oriented
  - Political Agitation: Chartism & general agitation led to reforms, such as the factory act, the mines act, and the 10 hours bill.
    - Example: Chartism demanded voting rights for working class
    - Example: Repeal of Corn Laws in 1846

Second Industrial Revolution

- Four Major Aspects
  - Steel Production – Bessemer Process
  - Oil – Internal Combustion engine for factory machines
  - Electricity – Increasingly powered cities by end of 19th century
    - Thanks to Michael Faraday's electromagnetism
    - Steel and textile industries used electricity
  - Chemicals – Germany led in dyes, soaps, pharmaceuticals, explosives, and fertilizers
    - Enhanced by Dmitri Mendeleev's Periodic Table

Improvements in Urban Life

- Despite falling birth rates and emigration, population increased in Europe from 1870-1914
  - Why?
- Better Medical Knowledge
  - Bacterial Revolution significantly decreased mortality rate
  - Louis Pasteur, Joseph Lister, Robert Koch
- Better Nutrition
  - Rise in real wages provided working class with greater access to meat
  - Refrigeration provided access to resources from other parts of the globe
- Better Housing
  - Public Health Movement launched by Edwin Chadwick
  - Georges Haussmann's Urban Planning of Paris
  - Electric street car creates mass transporation

Social Structure (1850-1900)

- Middle class (15-20% of population)
  - Upper Middle Class
    - Bankers, industrial leaders, large-scale commerce, top gov't officials
  - Middle Middle Class
    - Professionals, merchants, civil servants
  - Lower Middle Class
    - Small shopkeepers, store managers, teachers, clerks
    - Women often joined these ranks through employment in clerical and teaching professions
- Witnessed a diversification due to Second IR's creation of demand for experts with specialized skills
  - Professionals and managers
  - Major increase in white-collar employees

Social Structure (1850-1900)

- Lower Class (80% of population)
  - Highly Skilled, “Labor Aristocracy”
    - Construction bosses and skilled craftsmen
  - Semi-skilled
    - Carpentry, bricklaying, factory workers
  - Unskilled
    - Mostly female domestic servants, including prostitutes

Defining Cultures of Social Class

- Middle class
  - Servant-keepers
  - 4 meals per day with an abundance of meat
  - Great emphasis on education
  - More leisure time
  - Emphasis on Christian morality and the Protestant Work Ethic
- Lower Class
  - Drinking became more public and social
  - Rise of Mass culture
    - Music halls, vaudeville theatre, spectator sports, newspapers
  - Less religious
    - Materialistic urban areas
    - Darwin's Theory of Evolution

The Changing Family

- Marriage
  - Romantic love had triumphed in the lower classes
- Childbirth
  - Illegitimacy declined due to more improved methods of contraception and improvements in medical knowledge
  - Birth rates declined as families wanted to improve the lives of their children
- Child-rearing
  - Development of “separate spheres” led to greater affection for children
  - Freud argues that early childhood experience is vital to emotional development

The “Belle Epoque” (1895-1914)

- The “Good Old Days”, or the Age of Mass Culture
  - Increased standard of living led to increased consumption
    - Sports culture mirrored growth of nationalism
    - Department stores develop
  - New inventions mark the era
    - Telephone, automobile, record player, radio, movies
  - Increased access to education
    - By 1900, free public elementary school in England, France, and Germany
    - Increased literacy, especially in urban areas and industrial nations
    - Greater access to boys than girls, in adolescent years