

STUDY PACK 12

THE INDUSTRIAL REVOLUTION

"Progress has brought us both unbounded opportunities and unbridled difficulties. Thus, the measure of our civilization will not be that we have done much, but what we have done with that much. I believe that the next half-century will determine if we will advance _____ or revert to _____. The thought of modern industry in the hands of Christian charity is a dream worth dreaming. The thought of industry in the hands of paganism is a nightmare beyond imagining. The choice between the two is upon us."

~ Theodore Roosevelt, 1909 ~

I. THE INDUSTRIAL REVOLUTION

The Industrial Revolution may be defined as the changes which took place in the lives of civilized peoples _____; it is the replacement of the domestic system by the factory system. The beginnings of the Industrial Age are about 1730 and included changes in agriculture, transportation, and communication as well as manufacturing.

This revolution began in England and spread to all of the civilized countries of the world. The movement began in England because it was a great manufacturing country and there was _____. This caused men to think about ways to _____. Other contributions to English manufacturing included rivers, which provided water power and plenty of iron and coal to make and to operate new machines.

Cloth was an important English export. In 1733, an Englishman named Kay invented the flying shuttle, an improvement to the weaving loom. This allowed looms to operate more rapidly and more accurately. Several years later, James Hargreaves invented the spinning jenny, and this led to a spinning machine run by water power. In 1793, Eli Whitney invented the cotton gin, which made possible a cheap and speedy separation of cotton seeds from the fiber and lowered the cost of producing cotton cloth.

Water-powered factories had difficulty during dry seasons. This need for better sources of power brought about the invention of the steam engine by James Watt in 1782. Watt's engine could turn a wheel and thus could be used to turn the new textile machines. The growth of factories demanded improved methods of working iron. Robert Dudley discovered a method of using coal.

Road construction was improved by using crushed stone roads with good drainage. This type of road was called Macadam, after its developer, John MacAdam.

The first locomotives were invented by George Stephenson and could travel at up to fourteen miles per hour. Gradually, steam railways appeared around the world, often replacing stagecoach lines.

Inventions and scientific discoveries continued to multiply rapidly, leading to adjustments in lifestyle. These changes led in turn to new problems which demanded solutions.

II. CHALLENGES OF THE INDUSTRIAL REVOLUTION

As steam powered engines became more common, factories sprang up rapidly _____ . As a result of the need for cheap labor, jobs were available for women and children, as well as men. It was not unusual to see children employed at the age of ten in the factories and mines of England. Work conditions were far from ideal for these children,

The new factories and jobs drew many people from the countryside to the cities. The cities were unready for such dramatic increases in population. Unsanitary slums, horrible housing conditions, vice, crime, and disease spread in the cities.

Few provisions were made for safety, and accidents from using new machinery were common. However, as new technology developed, it provided more and more answers for the problems cities faced. Sanitation and housing improved. Machines were made safer, working conditions improved, and work days became shorter. Soon, national economies flourished. The Industrial Revolution was _____ and soon most citizens of industrialized nations lived in more wealth than they could have previously imagined.

As Robert A. Sirico writes:

"Historians now realize that even in the early years of the Industrial Revolution, workers were becoming better off. Prices were falling, incomes rising, health and sanitation improving, diets becoming more varied, and working conditions constantly improving. The new wealth generated by capitalism dramatically lengthened life spans and decreased child mortality rates. The new jobs being created in industry paid more than most people could make in agriculture. Housing conditions improved. The new heroes of society came from the middle class as business owners and industrialists had displaced the nobility and gentry in the cultural hierarchy.

"Much has been made about the rise of child labor and too little about the fact that, for the first time, there was remunerative work available for people of all ages. As economist W.H. Hutt has shown, work in the factories for young people was far less than it had been on the farm, which is one reason parents favored the factory. As for working hours, it is documented that when factories would reduce hours, the employees would leave to go to work for factories that made it possible for them to work longer hours and earn additional wages. The main effect of legislation that limited working hours for minors was to drive employment to smaller workshops that could more easily evade the law.

"In the midst of all this change, many people seemed only to observe an increase in the number of the poor. In a paradoxical way, this too was a sign of social progress, since so many of these unfortunate people might have been dead in past ages. But the deaths of the past were unseen and forgotten, whereas current poverty was omnipresent. Meanwhile, as economic development expanded in the nineteenth century, there was a dramatic growth of a middle class that now had access to consumer goods once available only to kings—not to mention plenty of new goods being created by the engine of capitalism." ~ *Impremis*, May 2007 ~

III. THE SECOND INDUSTRIAL REVOLUTION

About 1860, the Industrial Revolution entered a new era, sometimes referred to as the Second Industrial Revolution. Three significant events seem to mark this era, including:

- Henry Bessemer's development of the Bessemer process of making steel (1856),
- The perfection of the dynamo (about 1873), and
- The invention of the internal-combustion engine (1876).

The Industrial Revolution continued to gain momentum with the growth of mass production, the domination by the scientists in the industrial field, the development of light metals, and improved transportation with the automobile and the airplane. _____.

IV. THE EXPANSION OF IMPERIALISM

The loss of the American colonies and a rebellion in Canada caused many English statesmen to believe that colonies were not profitable. They tried to break away as soon as they became strong enough. Also at this time, the Industrial Revolution was involving the Europeans in building railroads and factories, thus keeping them busy with internal problems.

As long as Britain was able to find _____, there was no need for colonies. However, as other European countries became industrialized, there arose a need for new markets. New means of transportation and communication made trade with distant colonies much easier.

Often the missionaries were the first to make friends with the natives and taught them to wear European clothes and to use European tools. The traders came next, wanting to trade these items for native raw materials. After the traders, corporations followed and invested great amounts of money in the colonies.

The possession of distant lands brought about larger armies and navies to protect the colonies and to protect the trade between the colonies and the home country. The large navies also demanded harbors around the world for refueling and as a base.

_____ When Benjamin Disraeli succeeded Gladstone as Prime Minister, the real English expansion began. He acquired control of the Suez Canal. Later, France, Russia, Portugal, Germany, and Italy joined the expansionist movement.

The acquiring of distant territory by a nation and the building of an empire was known as imperialism. Some of the basic reasons that a nation would seize or purchase land from backward people are:

1. The need for new markets in which to sell products.
2. The need for raw materials.
3. The huge profits from the factory system earned enormous dividends when they were invested in backward countries.
4. The missionary challenge.
5. The need for naval bases.

V. SOCIALISTS TRY TO TAKE ADVANTAGE OF THE CHANGES RESULTING FROM

THE INDUSTRIAL REVOLUTION

Those who are motivated by faith in government are usually blinded by the constant failures of socialism.

Oscar Wilde wrote:

“Under Socialism...there will be no people living in fetid dens and fetid rags, and bringing up unhealthy, hunger-pinched children in the midst of impossible and absolutely repulsive surroundings....Each member of the society will share in the general prosperity and happiness of the society, and if a frost comes, no one will practically be anything the worse....”

As Robert Sirico has written:

“There have long been cases where grotesque examples of the failure of socialism exist alongside glowing examples of capitalist success, and yet many people will use every excuse to avoid attributing the differences to their economic systems. Even a superficial comparison of North and South Korea, East and West Germany before the Berlin Wall fell, Hong Kong and mainland China before reforms, or Cuba and other countries of Latin America, demonstrates that free economies are superior at promoting the common good. And yet the truth has not sunk in.” May 2007, *Impremis*.

The years 1870-1914 were an era of political and social change in which the masses tried to assume community responsibility. Family structure was weakened during this time, and compulsory education helped to make the masses politically conscious.

William E. Gladstone was a great leader of England as Prime Minister (1868-1874). He was a statesman of energy, ability, and high moral purpose. He accomplished many reforms in government and insisted on free trade. He also wrote *Defending the Received Text of Scripture*.

Gladstone's rival, Benjamin Disraeli, became Prime Minister in 1874 with a strong Parliamentary majority. Disraeli had a reform program which was designed to bring benefits to the lower classes. His reforms included the Factory Act of 1875, the Artisans' Dwelling Act of 1875, which allowed authorities to destroy slums, and an act which established safety regulations for seamen. Disraeli also was an enthusiastic _____.

France continued to have friction over whether the nation should be _____ or a _____, and among the monarchists there was confusion over which leader to follow. The conviction of a Jewish army officer, Captain Alfred Dreyfus, on a charge of espionage (which was later proven to be based upon forged documents) caused more divisions and conflicts, but ultimately led to a strengthened republic and the separation of church and state in 1905.

In Germany, Bismarck, the chancellor of the German Empire 1871-1890, maintained a generally authoritarian policy. Although they had a legislative system, it was controlled by the emperor, the King of Prussia. Even the chancellor was responsible to the emperor.

From 1871-1878, Bismarck was involved in a struggle with the Roman Catholic Church, partly as a reaction to _____. Bismarck wanted to extend state control over the Catholic Church in Prussia. When Pope Leo XIII became the church head in 1878, the tension was somewhat relieved as it seemed unwise to oppose both

the Catholics and the socialists at the same time. Bismarck passed laws restricting the socialists' activities and driving them underground. The laws lapsed in 1890.

The rise of the masses and the growth of industrialism brought economic and social problems thereby stimulating the growth of socialism. Class strife, stimulated by the Paris Commune and the economic depression of the 1870's and 1880's also strengthened its growth. The labor unions and labor parties also sought for social reforms. Often, conservatives such as Disraeli and Bismarck supported these reforms in order to get personal support from the masses. Propaganda from the socialists began to crop up everywhere. Henry George, an American thinker, greatly influenced socialism in England with his book, *Progress and Poverty*. This book suggested a single tax on land so as to tax only the propertied classes and not the lower classes. Marxism became a political force after experiencing earlier difficulties, including the collapse of the First International in 1876. In 1889, representatives of various socialists' groups founded the Second International as a left-wing pressure group.

Toward the end of the nineteenth century, labor unions grew rapidly, beginning in England and France, and quickly spread across Europe. By 1914, socialist leaders were publicly defining their goals as the economic and social betterment of the masses. There was much disagreement on how to attain the goals. Marx believed in revolution to hasten what he believed to be the inevitable downfall of capitalism, and this was shared by other groups, including the Syndicalist in France.

The British were more subtle in their British Socialism, especially in the Fabian Society. The Society tried to promote through democratic action, the gradual public ownership of Britain's means of production and distribution. The leaders of the Fabian Society included the famous playwright, George Bernard Shaw.

The question of this period became whether the welfare state, in increasing control of a national economy, can at the same time preserve the political freedom of its citizens.

VI. DARWINISM

The years between 1870 and 1914 evidenced some significant developments in the intellectual climate, profoundly impacting society. There was a deep belief in science, especially with the growth of applied science.

Modern man became increasingly concerned with the materialistic aspects of civilization. The discoveries by chemists and physicists, which stated the eternity of energy and matter, caused many to deny that the world could have been created. Some of the scientists also insisted that the human mind and soul existed in a material, physical substance. Many came to believe that there could be no Creator or God. These scientists, however, could not answer such basic questions as the origin of energy and matter or basic laws such as cause and effect. Christians have the answers to these difficult questions in the Word of God.

The development in science which had the most revolutionary effect on all areas of western thought and society at this period of history was in the field of biology. This development was in _____ and the theories of Charles Darwin.

The theory of evolution was not just in the biological area, but also in the social development of human society with its movement from simple to more complex institutions. This idea is often referred to as "_____." One of the first men to apply the theory of evolution to groups and states was Herbert Spencer, who believed that history was a

struggle for existence among social organisms.

Walter Bagehot indicated that the struggle for existence had always applied to groups as well as individuals. He also stated that the majority of the groups which win and conquer are better than the majority of those which fail. In other words, he is saying that the strongest nations survive, and that they are, therefore, the best. Social Darwinism seemed to blend evolutionary and nationalistic principles into a new concept which seemed to glorify war, and often strengthened the idea of racial superiority, and justified imperialistic expansion.

Darwinism also sought to destroy Christianity by direct attacks on the deity of Christ, which was attacked in such works as Strauss's *Life of Jesus* and Renan's *Life of Jesus*. Both authors recognized Christ as a superior human being, but denied that He had performed miracles, or that He had risen from the dead.

The emphasis of any particular period of history is reflected in the art of that period. The latter part of the nineteenth century reflects a trend to realism, naturalism, impressionism, and symbolism, which reveal the stresses of this period. The painters of this period reflected society primarily in their change of subject matter, from the unusual and beautiful, to such common subjects as farmers, laborers, and urban scenes.

The social novel, which was usually a form of social criticism, became popular during this period, especially in the writings of Dickens and Thackeray in England, Balzac and Flaubert in France, Fontane in Germany, and Turgenev and Tolstoy in Russia. These authors described the society in which they lived and pointed out the problems of that society. The naturalists called attention to existing evils and abuses and tried to diagnose the illnesses of society.

Naturalists offered man no hope, and they failed to use art and literature to inspire men to greater deeds. Their art reflected _____
and who can see nothing greater than the material world.