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World Civilization from 1500

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Industrialization

Industrialization is known as the process by which an economy is transformed from being primarily dependent on agrarian and handicraft into economies dependent on industry and machine manufacture. Organizational and technological changes reshaped the manufacturing of goods and allowed for productivity to substantially escalate. Industrialization left a lasting impression that affected all aspects of society as evidenced by the starting point of Industrialization, the development of the factory system, the spread of Industrialization across the world, and significant social changes.

Industrialization began in the late 18th century in Great Britain and is seen as the starting point. Great Britain laid the foundations of industrialization that ignited changes in the rest of the world. Industrialization started with Great Britain capitalizing on coal deposits that were fortunate enough to be found mainly in Great Britain in the western parts of Europe (Et al. Bentley 517). Britain's transition from wood to coal being their source of fuel allowed for Britain's economy to economy to maintain iron production. Industrial expansion in Great Britain started with growing the textile industry: cotton cloth became highly demanded by English consumers. In order for the production of cotton textiles to keep up with the demand, technological breakthroughs wre needed. John Kay's invention of the flying shuttle in 1733 accelerated the weaving process, and this led to other technologies invented that drastically improved the process. Samuel Compton went on to develop the spinning mule in 1779, and

Edmund Cartwright patented a water-driven power loom in 1790 (Et al. Bentley 517). Together, these inventions allowed for the mass production of inexpensive textile goods, and the cotton business became Britain's leading industry. The most significant development in Great Britain's Industrialization was the invention of a multifunction steam engine in 1765 by James Watt. Its prominence in the textile industry is how productivity expanded and cheaper prices were available. The iron and steel industries also saw technological advances in 1709 after British smelters started using coke instead of more costly charcoal as a fuel to produce iron (Et al. Bentley 518). Correspondingly, British iron production dramatically increased because of the ability to make high-quality, inexpensive iron. Steel grew to take the place of iron in tools, machines, and structures that required high strength because it became much more foundationally stronger. An increase in transportation technology was also seen after steam engineering developed. The first steam-powered locomotive was created by George Stephenson in 1815 (Et al. Bentley 518). Steamships also began to be driven by steam engines. The large quantities of goods that both locomotives and steamships could carry greatly decreased the expenses of transportation. Soon transportation networks of railroads and steamships were formed and contributed to connecting the interior regions and distant shores of Great Britain. Overall, Britain's discovery of coal deposits ignited an Industrial Revolution that saw advancements in the textile industry, steam power technology, iron and steel production, and transportation.

The development of the factory system originated from the British textile industry. The factory system transitioned to be the defining process of production in industrial economies. It became prominent in the eighteenth century, and cotton production was mainly completed in factories by the middle of the nineteenth century (Et al. Bentley 519). Because the newly

developed technologies were usually too massive and costly for use in the home, it was vital for work to transition to consolidated areas. Production being completed in one place accumulated workers doing specialized tasks more than what had ever been done before. The factory came to be defined by a division of labor where the production process consisted of each worker specializing in a single task instead of a single worker completing the whole process. This system created substantial increases in the output of manufactured goods, and worker productivity also rose to new levels. The article, "What Are the Origins of Modern Production?" uses Henry Ford as an example of advancements brought about stating that "Henry Ford pioneered the moving assembly in his car factories, using conveyor belts to transport component parts across different assembly stations" (*World101*). However, the new form of labor came with a monotonous nature and led to many workers being isolated from their work and the products of their labor. The pace of work, new work disciplines, and dangerous work conditions were a harsh difference from previous practices. In this new time of Industrialization, clocks, machines, and factory rules created new normalcies for a typical workday. It was very common for industrial workers to work six days a week, twelve to fourteen hours each day (Et al. Bentley 519). They were also under harsh supervision: managers harassed all workers to continuously speed up the production of goods. If expectations were not met, workers were harshly punished. Along with the other changes, industrial workers also confronted the possibility of fatal accidents daily because of the harsh and dangerous work conditions. The developments of the factory system in Great Britain revolutionized the production of goods in industrial economies.

Industrialization was only transforming Britain's economy for about 50 years. This is due to the fact that the British government prohibited exporting machinery, manufacturing skills, and skilled workers to other countries. However, Britain's head start on industrialization soon ended

when talented entrepreneurs disregarded the regulations and sold machinery and technical expertise out of the country. In addition, Europeans and North Americans would bribe or kidnap British engineers so they could use their knowledge to start industrial advancements in their own countries (Et al. Bentley 519). This led to the emergence of Industrialization in Western Europe and North America. France, Germany, Belgium, and the United States all saw rapid growth in becoming industrial economies. Belgium had the earliest Continental center of industrial production as coal, iron, textile, glass, armaments all were prospering productions for the country (Et al. Bentley 520). Alexander Graham Bell, born in Scotland, became a U.S. citizen in 1882. Bell's search for a way to revolutionize communication led to his invention of the telephone in 1876. Bell went on to obtain a patent for his invention on March 7, 1876, and the patent drawing records the technological instructions that illustrate the details of his new invention (*National Archives and Records Association*). Bell's invention of the telephone was a crucial part in industrializing the United States. By the end of the nineteenth century, the United States had become a dominant force in the Industrial Revolution and was continually making advancements for the betterment of their economy.

While Industrialization played a major role in revolutionizing the economies of countries, social changes also occurred for industrialized countries. The populations of European and American countries grew extensively during the eighteenth and nineteenth centuries, illustrating the rise in wealth and standards of living that industrialization caused. From 1700 to 1900, the population of Europe increased from 105 to 309 million, and the population of North and South America increased from 13 million to 145 million. New social classes also formed because of industrialization. Enterprising businesspeople became wealthy and powerful and sat at the top of the ranks. Small business owners, factory managers, engineers, physicians, and attorneys all

filled up the middle class, who all greatly profited from industrialization (Et al. Bentley 525). The newly emerged working class contained factory laborers and miners who completed heavy labor for long periods of time and low wages. Along with new social classes, Industrialization was a time when men gained increase in status and responsibility because of labor dominating public life. Since men were usually the main or only providers for their family, so they were viewed with more respect and influence at home. They were usually given higher wages than women in the working class as well. On the other hand, women's duties were restricted to the domestic life whenIndustrialization occurred. Because work was no longer being done at home, women were left to conform to new models of behavior that revolved around being a good wife to their husband and raising the children (Et al. Bentley 526). Child Labor became a prominent issue with the rise of an industrial economy. Industrial work removed children from their homes with their parents for long hours and minimal breaks. William Dodd accounts his first-hand experience working in a textile factory stating, "At the age of six I became a piecer …The position in which the piecer stands to his work is with the right foot forward …the chief weight of his body upon his right knee, which is almost always the first joint to give way …my evenings were spent in preparing for the rolling day — in rubbing my knees, ankles, elbows, and wrists, with oil. I went to bed, to cry myself to sleep" (7-10). Children experienced abuse by overseers who forced children to work from dawn to dusk, and children were beat if they fell asleep or did not do their job correctly. Eventually, child labor laws were passed that restricted children from taking part in the industrial workforce. This led to education becoming the primary goal of childhood. Industrialization brought about drastic social changes that shaped society globally.

The starting point of Industrialization, the development of the factory system, the spread of Industrialization across the world, and significant social changes all worked together for

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Industrialization to spawn increases in economic productivity. Handicraft production being replaced with machine-based manufacturing and new forms of business and labor organization led to the development of industrial societies. Industrialization brought social changes along with thriving economies as population increases and societal roles morphed to fit with the changing times. Industrialization has been a key driver of economic growth and development throughout history, and to this day countries are still working towards moving forward Industrialization.

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