

Pre-Industrial Society

What was Pre-Industrial Society Like?

How much did the Industrial Revolution change society? Did the Industrial Revolution improve life for most people? The only way to investigate these questions is to compare and contrast industrial with **pre-industrial society**. To do so, we'll start with pre-industrial life and use it as a baseline standard to contrast to the industrial era after 1750. In doing so, we will also discover a number of ways that the roots of industry run deep into the pre-industrial era.

For starters, the pace of change in preindustrial society was extremely slow. In contrast, over the past few decades, people have witnessed and grown accustomed to high tech inventions—such as personal computers, mobile phones, and the Internet—that have transformed our lives. We might then assume that other eras in history experienced a similarly rapid pace in technological progress. And yet, for almost all of human history, quite the opposite is true. One scholar even observed that an average Roman from the 1st century A.D. would find much in common with the technology and daily life of English people in the 17th century (Cipolla 277).

Daily life in pre-industrial times changed very little for Europeans. Almost all people lived and worked in the country. From 1300 to 1750, for the average peasant, people's work and social life mixed, as families lived on small plots of land, growing crops mostly for home consumption. Children learned to milk cows, churn butter, and tend to farm animals. Generation after generation, rural families relied on tools that had changed little over the centuries, such as wooden plows dependent on beasts of burden to pull them. For centuries, the English diet consisted mostly of dark rye bread and porridge, with very little meat. As a rule, Europeans ate few fruits or vegetables, believing they could cause disease, depression, and flatulence (5). Most people were illiterate and rarely bathed. Their idea of healthcare was that physical suffering from an illness was God's divine way of purifying the soul. Ignorant of microbiology and the germ theory, medieval and early modern physicians relied more on astrology and bloodletting than science. This traditional agrarian lifestyle and outlook held true for generations.



Another clear trend in pre-industrial society saw the population not growing very much from generation to generation. Poverty, war, plague, and poor hygiene resulted in high death rates, especially among young people. Even in the 1600s, approximately 25% of newborn children died before their first birthday and another 25% died before their tenth. Death was so common amongst the young that one French

noble remarked, “I lost two or three children as nurslings not without regret but without great grief” (Cipolla 127). Epidemics of influenza, typhoid fever, typhus, dysentery, and plague were frighteningly common. In the extreme, the infamous Black Death killed 25 million Europeans from 1348 to 1351 out of a total population of 80 million (131). This means that in just 3 years, almost 1/3 of the population of Europe died.

Pre-industrial population did not increase substantially in Europe for hundreds of years. For example, the area of Europe now known as Germany had an estimated population of 12 million in the year 1300. Over the course of 400 years, the population only increased to 15 million, a 20% increase over four centuries (4). To put that in perspective, the U.S. population in the 100 years between 1900 and 2000 increased from 76 million to 281 million, a 400% increase in just a century. (“Demographic Trends”).

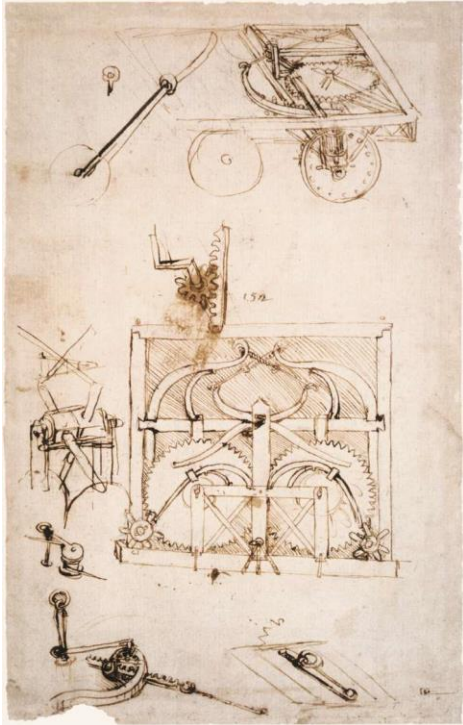
Wealth in pre-industrial European society was concentrated in the hands of the few, while poverty was common. In Florence, Italy, in 1427, 10% of the population—merchants, landowners, nobility— controlled 68% of wealth. (Cipolla 9). This is not much different from the United States today where, in 2007, the top 10% of the population control 71% of the wealth (“15 Mind Blowing Facts”). And in England in 1700, one contemporary estimated that of a total population of 5.3 million people, nearly 25% were living in poverty (Cipolla 13). In San Jose, CA, recent official data shows that, as of 2009, 11.5% of residents lived in poverty. And 20% of children grow up in poverty in the state of California (“San Jose Poverty Rate”).

Most people in preindustrial England lived on a subsistence level with little or no savings. If they were cursed with a stroke of bad luck that caused economic hardship, they could not rely on social safety nets to save them from resorting to begging. Most peasants struggled simply to meet the basic needs of their families. In England between the 15th and 18th centuries, 70 to 80% of

household income went to buying food. By contrast, in the United States in 2010, most people spent about 25% of their income on food (Cipolla 23). And so, for the person living in pre-industrial times, buying even one piece of clothing was a complete luxury. And yet, society typically depended on peasants for food and taxes (a percentage of personal income paid to the nobles or the government). Though they controlled a majority of the wealth in Europe in the form of land, the clergy and the nobility were usually not taxed, putting a further burden on peasants and craftsmen.



The Roots of Industrialization in Pre-Industrial Society



Out of this traditional and apparently unchanging pre-industrial life grew, surprisingly, the seeds of modern industry and society. Although most people lived in the country, cities flourished as early as the 13th century in Northern Italy, and later in Holland, Belgium, and England. The new towns were set apart from the old manor system in the countryside. No longer tied to the land and feudal obligations, merchants and craftspeople in the towns and cities found a new livelihood in producing handcrafted goods in workshops and trading their labor for money. Most of these crafts—such as cloth weaving, masonry, and furniture making—were very labor intensive, so production was low and slow by today's standards. Still, cities began to thrive as markets for crafts and agricultural goods. Venice became known for glassware, banking, and shipbuilding. The Medicis, the international banking family that came to rule Florence, patronized great works of art by Michaelangelo and architectural wonders by Brunelleschi. There, too, the prescient Leonardo Da Vinci dreamed in his journals

of modern mechanical curiosities such as flying machines, tanks, robots, machine guns, and parachutes.



Pre-Industrial cities like Florence became the hubs of learning, craft production, mechanical tinkering, and bold new engineering. This incremental innovation paved the way for the later frenzy of inventions that occurred during the prolific Industrial Revolution. Mechanical clocks, for example, became a fascination throughout Western Europe. Perhaps most importantly, a few key inventions in sailing and navigating—such as the compass, the full-rigged ship, and the quadrant—allowed Europeans to sail across the ocean in the late 15th

century.

Advances in learning also led European nations to surpass China in technological and military prowess. The Chinese invented gunpowder, for instance, but never used it to fire guns (instead they used it for fireworks). By the 16th century, Europeans were mass-producing cannons and

gunpowder in rudimentary factories. The military use of these inventions enabled Europeans to expand their trade and territory across all the oceans of the world. But who put up the money for all those risky transcontinental sea adventures in search of riches and international trade? Adventures overseas back then were as expensive as going to the moon today. Where did the money come from?



It turns out that the burgeoning regional and overseas trade also drove **Pre-Industrial financial innovations** in the growing towns—especially after 1500 when markets stretched from Asia to the Americas. Clearly, a financial revolution preceded the Industrial Revolution. In Amsterdam, in the early 1600s, the Dutch invented the first joint stock company (Ferguson 130-133). The Dutch East India Company held a monopoly on the trade of cloves, mace, and nutmeg from the “spice islands” in Southeast Asia (today known as Indonesia). It was the first

company to be financed by selling stock to the public, making stockholders partial owners. In a special new marketplace, stockholders could also sell their investment to somebody else. This Dutch “stock market,” the first in the world, further emboldened and empowered big companies willing to take risks to trade overseas.

These financial innovations spread to England, which took advantage of the new idea of credit in banking. The first central bank of England was established in 1694 (130). In the past, banks would hold safe on their premises all money they received as deposits, but banks failed to put that hard cash to good economic use. The Bank of England, however, began to issue and encourage credit. New banks began to take money that people had deposited and loan it out, for a fee, to businesses willing to take risks on new ventures. This innovation in banking (which we now take for granted), coupled with an extraordinary increase in overseas trade after 1500, enormously increased global trade and European wealth.

And so it was that mechanical and financial inventions became inextricable from European urban culture by the 1600s. Europeans, especially those living in cities, became interested in and receptive to mechanized curiosities and saw the opportunities in new financial instruments and world trade. Historians do not agree on exactly why all these developments occurred in Europe at this time and not elsewhere. Some argue it had to do with the competition between the many European countries. In China, if the one emperor decided not to build ships to sail the seas, then they would not be built. But Europe was not controlled by one emperor. Among many countries,

if one did not invent, then the next would; due to these nations' fear of being economically left behind, innovations would migrate and drive competition.



Alongside pre-industrial society grew gradually the beginnings of an industrial system called “**the cottage industry**” (also known as the “putting-out system” or the “domestic system”). Agricultural families worked at night in their cottages to spin or weave cloth with rudimentary machines, such as an old spinning wheel.

Merchants moving about the countryside would provide raw materials (wool or cotton) to the families, pay the workers for the finished product (such as woven

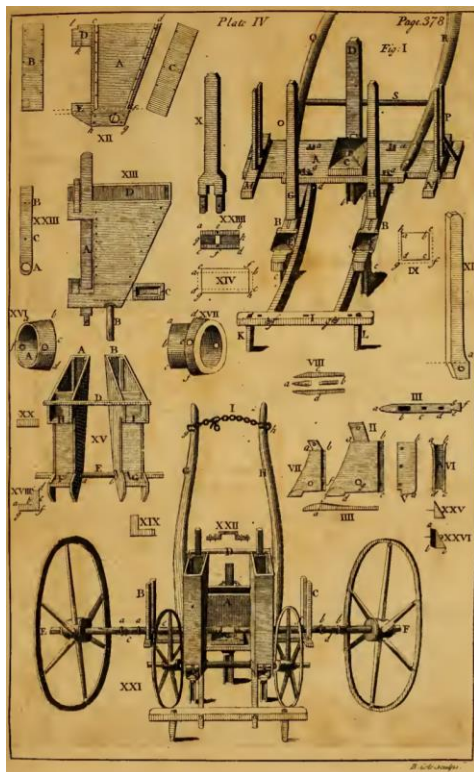
or spun cloth), take the goods to market, and keep the profit from the sale, reinvesting in his or her trade. Skilled craftspeople in the towns and cities were paid more, so the cottage industry allowed the merchant to find cheap labor in the countryside. For their part, rural families appreciated the opportunity to earn extra money and the convenience of working out of their homes, with different family members, such as children, pitching in to help. But when new inventions became too large and expensive to use in people's homes, the cottage industry became less useful. When the Industrial Revolution started, work moved from cottages to the new factories, where the large new machines could be centralized in one location and powered by water or, later, steam engines. And so, the cottage industry merchants were the forerunners of the factory owners in industrial times, entrepreneurs who would take ownership of machines but continue the practice of relying on cheap labor. It's another example of how the roots of the Industrial Revolution reached deep down into the preceding centuries.

One last important and gradual change began during these times that set the stage for industrialization. Historians call it “**the Agricultural Revolution.**” For a confluence of reasons, food production increased greatly starting in the late 17th century and accelerated through the 18th century. The new ease and growth in food production helped to feed the rising population and create a surplus of labor ready to fill the needs of the industrial cities coming into existence. The population of England, for example, doubled between 1750 and 1800. This food revolution also resulted in stronger, healthier farm animals, more efficient beasts of burden whose manure could replenish the soil with much-needed nitrogen.

Historians outline several reasons for the incredible increase in agricultural production in England just before the Industrial Revolution. First, crops from the “New World” in the Americas—such as corn, potato, turkey, squash, and tomato—began to come into use in Europe. Though only available to Europeans after 1492, these hearty foods quickly became common in

the "Old World" diet. The potato, in particular, grew well in Europe and provided high caloric yield in comparison to other crops.

A second factor that led to increased food production was that the Dutch invented a system of **crop rotation** that allowed farmers to "rotate" a series of different crops in their fields, over a four-year cycle, without depleting the soil. Most farmers in Europe left one-third or so of their fields fallow (unplanted) because plants pulled out nutrients from the soil, especially nitrogen. So the fields became useless after a couple of years; to avoid this problem, fields had to be left untouched and unproductive for a year. Dutch farmers discovered that some crops—those in the legume family—actually fixed nitrogen back into the soil instead of taking it out. By planting wheat, turnip, barley, and clover in the same field on a four-year rotation, for instance, crop yields increased 25-30% (Ashton 16). The British farmer Charles Townsend popularized this system in England in the 18th century.



A third factor that helped create an English Agricultural Revolution occurred when large landowners enclosed what had been common village land. This "**Enclosure Movement**" was controversial because it took away common, or shared, use of pastures and forests all across England. On the positive side, landowners unfettered from traditional village land-use habits were more apt to experiment with new tools and techniques—such as crop rotation—to increase production. Tinkerers and farmers in England applied the scientific method to agriculture. For example, Jethro Tull invented a seed drill that methodically and efficiently placed seeds into soil at just the right depth and distance so that farmers could use 10% of their seeds and still enjoy higher yields.

These incremental innovations in agriculture, finance, mechanical invention, and urban and overseas trade began to intersect. By the middle of the 18th century, Europe, and England in particular, was on the cusp of a profound and sweeping transformation.