Industrialization

While the economies of the West and South were still primarily agricultural, the late 19th century witnessed a rapid expansion in industrialization which profoundly transformed Northern society. What stimulated this economic change? What were the implications for ordinary Americans?

An important factor spurring the growth of factories was the expansion of the transportation system. Prior to the Civil War American railroads had been relatively short (around a 100 miles in length), serving local markets. Although there were significant inter-regional and international markets, most economic activity was still local or regional. In this environment, most manufacturing activities were also small scale, since manufacturers only had access to small markets. Following the war, however, there was an explosion in the development of railroads which were increasingly national in scope.

The development of an increasingly dense railroad net helped create a large, integrated marketplace. Now goods could be moved quickly to almost any part of the country relatively quickly, and at relatively low costs. With this growth of a mass market, it became increasingly profitable to shift towards large-scale manufacturing. The railroads also helped stimulate the economy by consuming vast quantities of iron and steel for the tracks, cars, and engines necessary for their operation.

Transportation development was facilitated by increasing access to capital. These larger, national railroads required a lot of money to finance their construction and operation. Where did this money come from?

A lot of it came from the government. For a long time local and state governments had invested in transportation projects in the hope of stimulating economic development for their regions, but up until the Civil War, the federal government had generally not done this. During and after the war, however, the national government increasingly did provide land grants and loans to railroad companies, as well as investing public money in the improvement of harbor facilities and the dredging of rivers to improve navigation. The government was particularly interested in opening up the resources of the western United States as quickly as possible to stimulate economic development and provide opportunities for ordinary Americans to own their own farms or acquire jobs in industry and commerce.

A significant amount of money also came from overseas. Many wealthy Europeans recognized that the American economy was expanding rapidly and rushed to invest. Probably one-third of the capital which went into the construction of the national railroad system in the late 19th century came from English, French, and German investors.

We also see the development of the complex financial infrastructure necessary to finance these large scale businesses. Prior to the Civil War banking firms were primarily family businesses or limited partnership. However, these small firms didn't have the resources necessary to fund major transportation or industrial projects, so the late 19th century saw the rise of large investment banking firms, like that of J.P. Morgan. They specialized in pooling the capital necessary to finance the building of major transportation and industrial projects. Likewise, this era saw the growth of a national stock market system which eclipsed earlier regional stock markets. This made it easier for companies that wished to sell public shares to attract large numbers of investors.

The creation of a mass national marketplace and the opening of the west stimulated the development of mass production. In the late 19th century industrial developed primarily through heavy industries that created what economists call "producer goods" rather than "consumer goods". That is, they were producing items that people used to make something else: for instance, the steel and iron industry throve as it produced more and more material to build railroads, bridges, and skyscrapers. There was also a huge boom in the production of agricultural equipment and basic machinery for factories.

Mechanization of the production process provided one way for manufacturers to expand their output. Prior to industrialization most goods were made in small shops and factories which relied upon skilled or semi-skilled craftsmen. This mode of production was expensive and limited in terms of the volume of goods that could be produced. By replacing skilled workers with machines, factory owners could cut labor costs and speed up production. The ability to use machinery was facilitated by the shift towards steam or electrical powered machinery. Early factories primarily used water power, which limited where they could be located: they had to be close to fast-moving rivers or streams. By the late 19th century, however, steam engines were becoming more common, allowing factories to be clustered in urban centers with ready access to transportation systems, markets, and populations of workers. The discovery of large deposits of coal ensured that there would be plenty of cheap fuel to provide the power for these machines.

The second way manufacturers gained more control over the production process was by changing the way in which work was organized. In an assembly line, for instance, rather than having a skilled worker doing multiple tasks, each worker simply performed one task over and over again. This again speeded up production and enabled employers to hire cheap unskilled workers rather than expensive craftsmen. The assembly line concept was refined by an engineer named Frederick W. Taylor. Taylor had been a foreman at a steel plant and he had come to the conclusion that workers wasted a great deal of valuable time through useless motions. Taylor went into the plant with a stopwatch and started doing what are called time/motion studies, figuring out more efficient routines for basic tasks. These routines were then taught to workers to ensure that they performed the maximum amount of labor. This process became known as "Taylorism" or "Scientific Management".

As businesses became larger, they also required new forms of organization. Prior to the Civil War, most businesses were family owned or limited partnership, serving local or regional markets. The development of national and international markets, however, required more complex forms. The first national corporations were railroads which required an army of clerical workers and middle-managers to keep them running smoothly and on time. The railroads thus became the pioneers of modern corporate management.

Unfortunately, the increasingly complex economy suffered from unpredictable cycles of expansion and contraction: what is sometimes referred to as the "boom-bust" cycle. Rapid growth in agricultural and industrial production flooded markets with goods, leading to saturation, falling prices, and ultimately a collapse. During the 1870s and 1880s this collapse was serious enough to be termed a depression. Businesses struggled to stay afloat in this erratic economic environment through desperate cut-throat competition.

Unhappy with the vagaries of the free market and determined to reap greater profits, many corporations sought to control the marketplace by eliminating competition. In some cases they sought to buy out or crush their competitors, but in other instances they simply tried to reach non-competition agreements. An early example of this can be found in the creation of pools or cartels: these were compacts between businesses to share the marketplace and set standard prices and rates. These efforts typically failed, however, because they were not enforceable by law and were easily and often violated. By the 1880s a more formal system of private regulation was created: the trust. In this case the participating companies turned over their stock to a board of trustees who had significant power to enforce standardized prices, rates, and wages. Economists refer to these efforts to create a monopoly in a particular economic sector as "horizontal integration".

There were many examples of this type of business consolidation in the late 19th century, but two were of particular importance.

The first was the Standard Oil, created by John D. Rockefeller. Rockefeller was extremely adept at persuading railroads to give him special shipping rates and rebates which helped him crush his competitors or force them to join his trust. In the 1870s Standard Oil had formed a cartel with 40 other oil refiners and in the 1880s this became a trust organization. By 1898 the Standard Oil Trust controlled 84% of the oil refined in the United States.

The second example is provided by Carnegie Steel. Andrew Carnegie, a Scottish immigrant, had begun his career working for the railroads. This provided him with experience in the pioneering managerial techniques being developed by the railroads, which were the first truly national corporations. This also gave him a very intimate acquaintance with most of the railroad owners and managers: contacts which would prove to be invaluable when Carnegie moved into the iron and steel industry. Using these contacts Carnegie cornered a large chunk of the lucrative steel rail market.

At the same time, he revolutionized the industry through mechanization and the introduction of more efficient production technologies, such as the Bessemer process. He reduced costs as well through ruthless labor practices. His company sought to drive down wages by eliminating unions. At the same time he extended working hours: workers in his mills often labored for 12 hours a day, seven days a week.

Carnegie was also a pioneer in another organizational strategy that helped to dramatically reduce his costs. He implemented what economists call "vertical integration". He realized that a significant share of his profits went to paying other companies that provided his steel mills with raw materials, fuel, and transportation services. Carnegie slashed these costs through the simple method of buying up the mines which produced iron ore and coal, and the railroads which moved his products.

Unlike Rockefeller, Carnegie never sought to create a trust organization. Instead he simply relied upon the efficiency of his operation to undercut competitors, who he then bought out and consolidated into his company. By 1894 Carnegie controlled 25% of all steel production in the United States. In 1901, when Carnegie decided to retire, he sold his company to a consortium backed by J.P. Morgan. This new corporation, U.S. Steel, controlled approximately 60% of all steel production in the United States.

What was the overall effect of industrialization upon the United States?

There were obviously many, many benefits. The expansion of factories and mass production created countless jobs. Factories required many workers to operate, and while working conditions were often harsh and hours long, the general trend over the course of the late 19th and early 20th century was for wages to rise and hours of labor to decrease. There was also a parallel growth in the number of middle-management and clerical workers. The rise of great corporations and modern business organization required new types of white collar workers who often enjoyed good salaries and benefits: industrialization helped create an expanding middle-class of people who worked more with their minds than their hands.

The expansion of manufacturing also stimulating effects upon other economic sectors: consider, for instance, the rise demand for raw materials which affected mining and other primary materials sectors. With more products been produced, railroads and steamship lines had more business, and retail establishments had more goods to offer.

Finally, industrialization positively affected Americans by dramatically lowering the cost of many basic consumer goods.

There were negative effects as well. The concentration of factories in urban centers ensured that more and more Americans lived in big cities which, because of their extremely rapid growth, were often over-crowded, poorly governed and, thanks in part to the factories themselves, heavily polluted. For many people, coming from rural backgrounds, the experience of moving to the city was a significant shock.

Big corporations also often placed profits before all else, with negative implications for ordinary Americans. Working conditions could be extremely harsh, particularly since there was virtually no government regulation of the workplace. Hundreds of thousands of people were injured or killed in industrial accidents. Depending upon the state, employees could sometimes sue for damages, but laws tended to favor employers and settlements were typically low.

Long hours contributed to the strain and danger of the working place. Overall, hours of labor did fall over time. Prior to the Civil War the average wage earner worked 12 hours a day, 6 days a week. By the turn of the century this had dropped to an average of 10 hours a day. However, this varied by industry. Carnegie Steel, for instance, required their men to work 12 hours a day, seven days a week. The mills ran constantly, with a day shift and a night shift, and every two weeks they traded off, requiring the workers to do a “long shift” of 24 hours straight. Understandably, exhausted men working in the incredible heat of the furnaces often made mistakes, leading to an extreme high rate of death and injury.

Similarly, while wages overall rose, many workers continued to barely scrape by. This was in part because of the erratic boom-bust cycle of the economy. While there was plentiful employment during the boom periods, one of the first things businesses typically did during the busts was to lay off workers. Many workers could thus expect to experience prolonged periods of unemployment. In order to survive families often had to have multiple sources of income to eke out a sustainable level of income; this was one factor behind the rising rate of child labor in the United States. (statistic on child labor)

How could workers respond to these conditions?

Some simply left. The labor turnover rate in American industries was extremely high: employers, particularly in dangerous industry like steel making, had to constantly recruit and train new workers as the old ones left, exhausted or crippled by the severe working conditions. Many immigrants left the country, preferring the agricultural poverty of their homelands to the industrial conditions in the United States.

Others, however, attempted to assert more control over the workplace through the creation of labor unions. One of the first true national unions were the Knights of Labor. In theory, the Knights were not particularly concerned about questions of wages and hours of work, because their goal was a bit different. They abhorred the fact that American small producers were increasingly becoming simply wage workers who had relatively little control over their lives at the workplace. This was part of a very old vision of the United States; a vision where every individual had the opportunity to have their own business and control their own economic destiny. The stated goal of the knights was to "eventually make every many his own master—every man his own employer…There is no reason why labor cannot, through cooperation, own and operate mines, factories, and railroads." Membership in the Knights was open to anyone who was a "producer" – they made no distinction between "owners" and "workers" because in their ideal, workers would BE owners. Thus, they made efforts to organize both skilled and unskilled laborers, men and women, and even black and white.

The rise of the Knights in the 1880s, however, had less to do with their grand vision of creating a vast "middle-class" society – a cooperative commonwealth -- than on their willingness to stand up for basic workplace issues. Theoretically they were opposed to striking or other confrontational labor tactics, but these were the most effective tools to achieve what most workers wanted: better wages, shorter hours, and safer working conditions. When the Knights successfully organized a strike against J. Gould, one of the most hated of the great railroad barons, workers flocked to their standard. By 1886 the Knights boasted over three-quarters of a million members.

Just as quickly as the Knights rose, they fell. There were several reasons for this. First, there was a significant clash between the lofty theoretical goals of the Knights and their pragmatic actions at the local level. The national leadership of the movement generally opposed the use of strikes, arguing that real change would only occur through political action and the creation of cooperative businesses. There were also significant racial and ethnic tensions within the organization. Racism drove a wedge between white and black Knights, while religious and ethnic prejudices weakened efforts to bring in immigrant workers: an increasingly significant portion of the workforce. Finally, charges that the Knights were dangerous radicals alienated many people and made it easier for employers to organize opposition to their strikes.

These charges spring primarily from the Knights participation in the so-called Haymarket Riot in 1886. This year witnessed a wave of strikes throughout the nation. This surge of labor activism had been sparked by a growing demand for an 8-hour day. It became particularly significant in Chicago, where the 8-hour movement was backed by both unions and some more radical anarchist organizations. Violence broke out on May 3, 1886, at the huge McCormick reaper works when strikers tried to prevent nonunion workers (scabs) from entering the factory. The police stormed into the area and began shooting, ultimately leaving two union members dead and wounding several others. The following evening the participating labor organizations called a rally in Haymarket Square, near downtown Chicago, to protest the police use of violence. As the rally began to disperse, a company of policemen marked into the square. What happened next remains a subject of controversy. A bomb went off in the front ranks of the advancing officers, killing seven and injuring sixty-seven. The police were enraged and political and business leaders in Chicago and throughout the country were horrified. Despite the fact that there was little evidence to show who exactly had thrown the bomb, many unionists and anarchists were arrested. Eight anarchists were eventually tried and found guilty, despite the lack of evidence: four of them were ultimately executed.

Even though the Knights had long advocated peaceful methods of changing the economy, they were increasingly lumped together with the anarchist movement: a radical movement which sometimes embraced the use of violence. Newspapers and employers painted them in this manner, alienating not only middle-class Americans, but also many workers who might have otherwise joined their ranks.

Even as the Knights were going into decline, we see the emergence of another national labor movement which would ultimately prove to be much, much more successful. Unlike the Knights, the American Federation of Labor did not have a grand vision of society. They generally accepted that in the new industrial economy some Americans would own the factories, and other Americans would work in them. The accepted that there would now be a permanent working-class in the United States. Their goals were to give workers more control over their own labor, but through a limited agenda of better working conditions, shorter hours, and improved wages: what some historians refer to as “bread and butter” unionism. As Samuel Gompers, the first president of the AFL observed, "Our movement is of the working people, for the working people, by the working people."

Also unlike the Knights, the AFL was very exclusive in who they chose to organize. They focused on white, male, skilled workers, which was a fairly small segment of the total workforce. There were some distinct advantages to this narrow organization. First of all, they typically avoided the internal cultural, racial, and ethnic tensions that had helped destroy the Knights. Second, because their members were better paid skilled workers, they had more leverage to begin with. When unskilled workers struck, it was comparatively simple for employers to find new workers to replace them, but skilled workers were had to replace, making the threat of striking that much more effective. These workers could also pay relatively high dues, meaning that the unions could amass a significant “strike fund” to pay workers that were unemployed because of strike activity: this enabled them to strike for longer periods.

The AFL also sought to avoid the stigma of radicalism that had helped defeat the Knights of Labor. While some unions within the AFL were Socialist – i.e., advocating public ownership of industry – the organization overall avoided overt political activity. In Europe union movements had typically formed their own political parties, such as the Labour Party in Great Britain. In the U.S., however, the A.F.L. not only did not create their own party, they generally refused to endorse any particular party. This doesn't change until the 1910s, when unions increasingly did identify themselves with the Democratic party.

The AFL thus sought limited political and economic goals. Within the context of these limitations they were quite successful: by 1900 the AFL had almost a million members and they had won significant concessions for skilled workers. Yet, most American workers remained unprotected by either labor unions or government agencies. By 1910 only around 6% of the workforce had been unionized.

Overall, American workers were much less likely to be union members than European workers. What explains this difference?

Some European observers pointed to the "beefsteak" factor: the fact that with all the problems facing workers at this time, many were experiencing significant improvements in their lives. This was particularly true for people coming from a background of grinding rural poverty. Even with all the difficulties of industrial life, for many Americans – immigrants or native-born – factory life represented an improvement.

There were also cultural factors. Many Americans believed firmly in the "rags to riches" ideal which had long been part of American culture: the idea that any individual who was willing to work hard and play by the rules could rise in society and achieve great success. Although the reality was often different, there was enough truth in this individualistic ideal to encourage people to turn away from collective, cooperative ventures such as unions, believing that they were better off negotiating with employers on an individual basis.

The American workforce was also much more "segmented" than the European workforce. In Europe most workers shared roughly similar backgrounds in terms of languages, religions, and ethnicity. This made it much easier to organize them. In contrast, the United States was a patchwork of cultures and races which often created bitter tensions between different elements of the workforce. Native-born workers often resented immigrant workers, just as white workers were often hostile to black workers because of the legacy of racism. Obviously, this made it very difficult to bring American workers together.

Finally, government tended to side with employers rather than workers. This was illustrated in a couple of famous confrontations during the 1890s.

The first was the Homestead Strike of 1892. Faced with declining prices for steel, Andrew Carnegie and his associate, Henry Clay Frick, were determined to revamp operations at the Homestead Steel Mill and reduce labor costs. Frick, who was put in charge of the operation, demanded that the workers take a pay cut and he refused to negotiate at all with their union. When the workers insisted that they be allowed to have union representation, Frick closed the mills and prepared to bring in replacement workers. He surrounded the mill with a fence, topped with barbed wire and hired hundreds of armed guards from the Pinkerton Detective Agency.   When the guards arrived, however, they were confronted by an angry mob of heavily armed workers, leading to a fourteen hour battle. Alarmed at this outbreak of violence, the Pennsylvania state militia was called out and under the protection of their bayonets, strikebreaking workers were brought into the steel mill.   While middle-class newspapers had initially been sympathetic to the locked-out workers, the violence of the confrontation and an attempt by an anarchist to assassinate Henry Frick alienated many people. With the government siding with Frick and declining public support, the union cause was hopeless. The union was destroyed and the steel workers were forced to accept lower wages and longer hours of work.

Another example of government willingness to intervene in labor issues was the Pullman strike of 1894. The Pullman Palace Car Company manufactured luxury sleeper cars for the railroads. Workers not only labored in a factory owned by Pullman, they also lived in a company owned town. As one worker observed: We are born in a Pullman house, fed from the Pullman shop, taught in the Pullman school, catechized in the Pullman church, and when we die we shall be buried in the Pullman cemetery and go to Pullman hell." In 1893, as the economy began to slide into a depression, the company cut wages 1/3 and laid off many of its workers, but they made no reductions in the rents that workers paid to live in Pullman housing or the prices that they paid in company owned stores. Determined to fight back, the workers joined the American Railway Union, a recently formed organization headed by Eugene Debs. When Pullman refused to even meet with union representatives, Debs ordered a boycott which affected railroads throughout the country. American Railway Union members refused to attach Pullman cars to any trains, and if they were attached, the firemen and engineers would not move them. In response, the railroads began firing workers, leading to a wave of strikes which slowed rail traffic throughout the nation. The railroad corporations were outraged by this and went to the state government. The governor of Illinois, John Altgeld, refused to act, arguing that while there had been some outbursts of spontaneous violence, the strikers were generally peaceful. The corporations then turned to the federal government. The attorney general, who had close ties to the railroad industry, got federal courts to issue an injunction making the boycott illegal. With the union refusing to honor the injunction, federal troops were called in to suppress the strike and the union leaders were arrested. Debs himself was sentenced to six months in jail, leading to his conversion to Socialism. He would argue that with the corporations controlling the government, it was critical that workers have their own party to represent their interests. Needless to say, the effort to unionize the Pullman workers failed and the American Railway Union itself was destroyed.

With government often hostile to their goals and a working-class split along lines of ethnicity, race, and religion, it's not surprising that the union movement failed to develop the strength in the United States that it boasted in Europe. It was not until the 20th century that the union movement began to be broadly successful in organizing workers and influencing government policies.