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During the late eighteenth and early nineteenth centuries Great Britain became the first country to industrialize. Because of this, it was also the first country where the nature of children's work changed so dramatically that child labor became seen as a social problem and a political issue.

This article examines the historical debate about child labor in Britain, Britain's political response to problems with child labor, quantitative evidence about child labor during the 1800s, and economic explanations of the practice of child labor.

The Historical Debate about Child Labor in Britain

Child Labor before Industrialization

Children of poor and working-class families had worked for centuries before industrialization - helping around the house or assisting in the family's enterprise when they were able. The practice of putting children to work was first documented in the Medieval era when fathers had their children spin thread for them to weave on the loom. Children performed a variety of tasks that were auxiliary to their parents but critical to the family economy. The family's household needs determined the family's supply of labor and "the interdependence of work and residence, of household labor needs, subsistence requirements, and family relationships constituted the "family economy" [Tilly and Scott (1978, 12)].

Definitions of Child Labor

The term "child labor" generally refers to children who work to produce a good or a service which can be sold for money in the marketplace regardless of whether or not they are paid for their work. A "child" is usually defined as a person who is dependent upon other individuals (parents, relatives, or government officials) for his or her livelihood. The exact ages of "childhood" differ by country and time period.

Preindustrial Jobs

Children who lived on farms worked with the animals or in the fields planting seeds, pulling weeds and picking the ripe crop. Ann Kussmaul's (1981) research uncovered a high percentage of youths working as servants in husbandry in the sixteenth century. Boys looked after the draught animals, cattle and sheep while girls milked the cows and cared for the chickens. Children who worked in homes were either apprentices, chimney sweeps, domestic servants, or assistants in the family business. As apprentices, children lived and worked with their master who established a workshop in his home or attached to the back of his cottage. The children received training in the trade instead of wages. Once they became fairly skilled in the trade they became journeymen. By the time they reached the age of twenty-one, most could start their own business because they had become highly skilled masters. Both parents and children considered this a fair arrangement unless the master was abusive. The infamous chimney sweeps, however, had apprenticeships considered especially harmful and exploitative. Boys as young as four would work for a master sweep who would send them up the narrow chimneys of British homes to scrape the soot off the sides. The first labor law passed in Britain to protect children from poor working conditions, the Act of 1788, attempted to improve the plight of these "climbing boys." Around age twelve many girls left home to become domestic servants in the homes of artisans, traders, shopkeepers and manufacturers. They received a low wage, and room and board in exchange for doing household chores (cleaning, cooking, caring for children and shopping).

Children who were employed as assistants in domestic production (or what is also called the cottage industry) were in the best situation because they worked at home for their parents. Children who were helpers in the family business received training in a trade and their work directly increased the productivity of the family and hence the family's income. Girls helped with dressmaking, hat making and button making while boys assisted with shoemaking, pottery making and horse shoeing. Although hours varied from trade to trade and family to family, children usually worked twelve hours per day with time out for meals and tea. These hours, moreover, were not regular over the year or consistent from day-to-day. The weather and family events affected the number of hours in a month children worked. This form of child labor was not viewed by society as cruel or abusive but was accepted as necessary for the survival of the family and development of the child.

Early Industrial Work

Once the first rural textile mills were built (1769) and child apprentices were hired as primary workers, the connotation of "child labor" began to change. Charles Dickens called these places of work the "dark satanic mills" and E. P. Thompson described them as "places of sexual license, foul language, cruelty, violent accidents, and alien manners" (1966, 307). Although long hours had been the custom for agricultural and domestic workers for generations, the factory system was criticized for strict discipline, harsh punishment, unhealthy working conditions, low wages, and inflexible work hours. The factory depersonalized the employer-employee relationship and was attacked for stripping the worker's freedom, dignity and creativity. These child apprentices were paupers taken from orphanages and workhouses and were housed, clothed and fed but received no wages for their long day of work in the mill. A conservative estimate is that around 1784 one-third of the total workers in country mills were apprentices and that their numbers reached 80 to 90% in some individual mills (Collier, 1964). Despite the First Factory Act of 1802 (which attempted to improve the conditions of parish apprentices), several mill owners were in the same situation as Sir Robert Peel and Samuel Greg who solved their labor shortage by employing parish apprentices.

After the invention and adoption of Watt's steam engine, mills no longer had to locate near water and rely on apprenticed orphans - hundreds of factory towns and villages developed in Lancashire, Manchester, Yorkshire and Cheshire. The factory owners began to *hire* children from poor and working-class families to work in these factories preparing and spinning cotton, flax, wool and silk.

The Child Labor Debate

What happened to children within these factory walls became a matter of intense social and political debate that continues today. Pessimists such as Alfred (1857), Engels (1926), Marx (1909), and Webb and Webb (1898) argued that children worked under deplorable conditions and were being exploited by the industrialists. A picture was painted of the "dark satanic mill" where children as young as five and six years old worked for twelve to sixteen hours a day, six days a week without recess for meals in hot, stuffy, poorly lit, overcrowded factories to earn as little as four shillings per week. Reformers called for child labor laws and after considerable debate, Parliament took action and set up a Royal Commission of Inquiry into children's employment. Optimists, on the other hand, argued that the employment of children in these factories was beneficial to the child, family and country and that the conditions were no worse than they had been on farms, in cottages or up chimneys. Ure (1835) and Clapham (1926) argued that the work was easy for children and helped them make a necessary contribution to their family's income. Many factory owners claimed that employing children was necessary for production to run smoothly and for their products to remain competitive. John Wesley, the founder of Methodism, recommended child labor as a means of preventing youthful idleness and vice. Ivy Pinchbeck (1930) pointed out, moreover, that working hours and conditions had been as bad in the older domestic industries as they were in the industrial factories.

Factory Acts

Although the debate over whether children were exploited during the British Industrial Revolution continues today [see Nardinelli (1988) and Tuttle (1998)], Parliament passed several child labor laws after hearing the evidence collected. The three laws which most impacted the employment of children in the textile industry were the Cotton Factories Regulation Act of 1819 (which set the minimum working age at 9 and maximum working hours at 12), the Regulation of Child Labor Law of 1833 (which established paid inspectors to enforce the laws) and the Ten Hours Bill of 1847 (which limited working hours to 10 for children and women).

The Extent of Child Labor

The significance of child labor during the Industrial Revolution was attached to both the changes in the nature of child labor and the extent to which children were employed in the factories. Cunningham (1990) argues that the idleness of children was more a problem during the Industrial Revolution than the exploitation resulting from employment. He examines the *Report on the Poor Laws* in 1834 and finds that in parish after parish there was very little employment for children. In contrast, Cruickshank (1981), Hammond and Hammond (1937), Nardinelli (1990), Redford (1926), Rule (1981), and Tuttle (1999) claim that a large number of children were employed in the textile factories. These two seemingly contradictory claims can be reconciled because the labor market for child labor was not a national market. Instead, child labor was a regional phenomenon where a high incidence of child labor existed in the manufacturing districts while a low incidence of children were employed in rural and farming districts.

Since the first reliable *British Census* that inquired about children's work was in 1841, it is impossible to compare the number of children employed on the farms and in cottage industry with the number of children employed in the factories during the heart of the British industrial revolution. It is possible, however, to get a sense of how many children were employed by the industries considered the "leaders" of the Industrial Revolution - textiles and coal mining. Although there is still not a consensus on the degree to which industrial manufacturers depended on child labor, research by several economic historians have uncovered several facts.

Estimates of Child Labor in Textiles

Using data from an early *British Parliamentary Report* (1819[HL.24]CX), Freuenberger, Mather and Nardinelli concluded that "children formed a substantial part of the labor force" in the textile mills (1984, 1087). They calculated that while only 4.5% of the cotton workers were under 10, 54.5% were under the age of 19 - confirmation that the employment of children and youths was pervasive in cotton textile factories (1984, 1087). Tuttle's research using a later *British Parliamentary Report* (1834(167)XIX) shows this trend continued. She calculated that children under 13 comprised roughly 10 to 20 % of the work forces in the cotton, wool, flax, and silk mills in 1833. The employment of youths between the age of 13 and 18 was higher than for younger children, comprising roughly 23 to 57% of the work forces in cotton, wool, flax, and silk mills. Cruickshank also confirms that the contribution of children to textile work forces was significant. She showed that the growth of the factory system meant that from one-sixth to one-fifth of the total work force in the textile towns in 1833 were children under 14. There were 4,000 children in the mills of Manchester; 1,600 in Stockport; 1,500 in Bolton and 1,300 in Hyde (1981, 51).

The employment of children in textile factories continued to be high until mid-nineteenth century. According to the *British Census*, in 1841 the three most common occupations of boys were Agricultural Labourer, Domestic Servant and Cotton Manufacture with 196,640; 90,464 and 44,833 boys under 20 employed, respectively. Similarly for girls the three most common occupations include Cotton Manufacture. In 1841, 346,079 girls were Domestic Servants; 62,131 were employed in Cotton Manufacture and 22,174 were Dress-makers. By 1851 the three most common occupations for boys under 15 were Agricultural Labourer (82,259), Messenger (43,922) and Cotton Manufacture (33,228) and for girls it was Domestic Servant (58,933), Cotton Manufacture (37,058) and Indoor Farm Servant (12,809) (1852-53[1691-I]LXXXVIII, pt.1). It is clear from these findings that children made up a large portion of the work force in textile mills during the nineteenth century. Using returns from the Factory Inspectors, S. J. Chapman's (1904) calculations reveal that the percentage of child operatives under 13 had a downward trend for the first half of the century from 13.4% in 1835 to 4.7% in 1838 to 5.8% in 1847 and 4.6% by 1850 and then rose again to 6.5% in 1856, 8.8% in 1867, 10.4% in 1869 and 9.6% in 1870 (1904, 112).

Estimates of Child Labor in Mining

Children and youth also comprised a relatively large proportion of the work forces in coal and metal mines in Britain. In 1842, the proportion of the work forces that were children and youth in coal and metal mines ranged from 19 to 40%. A larger proportion of the work forces of coal mines used child labor underground while more children were found on the surface of metal mines "dressing the ores" (a process of separating the ore from the dirt and rock). By 1842 one-third of the underground work force of coal mines was under the age of 18 and one-fourth of the work force of metal mines were children and youth (1842[380]XV). In 1851 children and youth (under 20) comprised 30% of the total population of coal miners in Great Britain. After the Mining Act of 1842 was passed which prohibited girls and women from working in mines, fewer children worked in mines. *The Reports on Sessions 1847-48 and 1849 Mining Districts I* (1847-48[993]XXVI and 1849[1109]XXII) and *The Reports on Sessions 1850 and 1857-58 Mining Districts II* (1850[1248]XXIII and 1857-58[2424]XXXII) contain statements from mining commissioners that the number of young children employed underground had diminished.

In 1838, Jenkin (1927) estimates that roughly 5,000 children were employed in the metal mines of Cornwall and by 1842 the returns from *The First Report* show as many as 5,378 children and youth worked in the mines. In 1838 Lemon collected data from 124 tin, copper and lead mines in Cornwall and found that 85% employed children. In the 105 mines that employed child labor, children comprised from as little as 2% to as much as 50% of the work force with a mean of 20% (Lemon, 1838). According to Jenkin the employment of children in copper and tin mines in Cornwall began to decline by 1870 (1927, 309).

Explanations for Child Labor

The Supply of Child Labor

Given the role of child labor in the British Industrial Revolution, many economic historians have tried to explain why child labor became so prevalent. A competitive model of the labor market for children has been used to examine the factors that influenced the demand for children by employers and the supply of children from families. The majority of scholars argue that it was the plentiful supply of children that increased employment in industrial work places turning child labor into a social problem. The most common explanation for the increase in supply is poverty - the family sent their children to work because they desperately needed the income. Another common explanation is that work was a traditional and customary component of ordinary people's lives. Parents had worked when they were young and required their children to do the same. The prevailing view of childhood for the working-class

was that children were considered “little adults” and were expected to contribute to the family’s income or enterprise. Other less commonly argued sources of an increase in the supply of child labor were that parents either sent their children to work because they were greedy and wanted more income to spend on themselves or that children wanted out of the house because their parents were emotionally and physically abusive. Whatever the reason for the increase in supply, scholars agree that since mandatory schooling laws were not passed until 1876, even well-intentioned parents had few alternatives.

The Demand for Child Labor

Other compelling explanations argue that it was demand, not supply, that increased the use of child labor during the Industrial Revolution. One explanation came from the industrialists and factory owners - children were a cheap source of labor that allowed them to stay competitive. Managers and overseers saw other advantages to hiring children and pointed out that children were ideal factory workers because they were obedient, submissive, likely to respond to punishment and unlikely to form unions. In addition, since the machines had reduced many procedures to simple one-step tasks, unskilled workers could replace skilled workers. Finally, a few scholars argue that the nimble fingers, small stature and suppleness of children were especially suited to the new machinery and work situations. They argue children had a comparative advantage with the machines that were small and built low to the ground as well as in the narrow underground tunnels of coal and metal mines. The Industrial Revolution, in this case, increased the demand for child labor by creating work situations where they could be very productive.

Influence of Child Labor Laws

Whether it was an increase in demand or an increase in supply, the argument that child labor laws were not considered much of a deterrent to employers or families is fairly convincing. Since fines were not large and enforcement was not strict, the implicit tax placed on the employer or family was quite low in comparison to the wages or profits the children generated [Nardinelli (1980)]. On the other hand, some scholars believe that the laws reduced the number of younger children working and reduced labor hours in general [Chapman (1904) and Plener (1873)].

Despite the laws there were still many children and youth employed in textiles and mining by mid-century. Booth calculated there were still 58,900 boys and 82,600 girls under 15 employed in textiles and dyeing in 1881. In mining the number did not show a steady decline during this period, but by 1881 there were 30,400 boys under 15 still employed and 500 girls under 15. See below.