

## RETHINKING THE INDUSTRIAL REVOLUTION IN A CHANGING WORLD: A CASE STUDY OF THE ENVIRONMENTAL IMPACTS OF TEXTILE INDUSTRY ON CONTEMPORARY ENGLAND

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### Abstract

*The industrial revolution had marked the beginning of the age of machine. It shaped the world we are living in. The industrial activity brought tremendous changes in almost every sphere of life. The textile industry which was one of the earliest and most prominent industries led to the emergence of the booming fashion industry. It is that fashion industry which is now creating tons of industrial waste and counted as one of the biggest polluters in the United Kingdom. The adverse industrial impacts on environment prompted the environmental activists, fashion entrepreneurs, students, and other citizens to shift to sustainable practices. There is a strong inclination to adopt sustainability in the industrial process. The mounting call for sustainability raises two important questions. Was the Industrial Revolution indeed a 'revolution'? And if that was the case, did it make the world, more specifically, the environment unsustainable? Should the Industrial Revolution be blamed for the environmental crisis in the United Kingdom?*

Revolutions have been one of the most significant topics in human history. In the academic sphere, the study of 'Revolutions' is a complicated area of research. From its meaning to manifestation, a revolution is a complex subject matter. Revolutions have been an unusual area to cover in the long and lengthy course of European history. Having seen that the revolutions have formed the present world, specifically the European world, it is necessary to further elaborate on the theme.

Revolutions can be categorized and classified into multiple spheres. They can be economic involving new methods of manufacture and production. They can be political that seek to alter or replace the traditional systems of political governance. Also, they can be scientific triggering major breakthroughs in the field of material reality. However, the most talked

about revolutions, are the political ones. This categorization of a revolution is further split into the spontaneous, planned and negotiated sectors. The spontaneous revolution occurs when there is an absence or weakness of governance. The planned revolution is a deliberate attempt by the revolutionaries to shape the state of affairs according to their ideological parameters. In the negotiated revolution, the prevailing system and revolutionary tendencies fail to overcome each other and the only way out is a negotiated compromise.<sup>1</sup>

The most groundbreaking revolutions in the last three hundred years have been the American, the French, and the Russian Revolutions. All the revolutions tend to bring a sudden tangible change in the political, social, and economic facets of the society. All the above-mentioned revolutions in one way or the other brought about change not only in their respective societies but greatly influenced their immediate peripheries.

Some revolution led to new political sovereignties—United States of America. While others ended the dynastic monarchies and introduced new systems of governance—France and Russia. The political rhetoric, approaches, chants, institutions, literature, system of government that is the manner of today's world, all reflect these revolutions to a great extent. The ideals, principles, standards that these revolutions have brought, can be observed even now not only in their places of birth, but also in the wider world. All revolutions had gone through multiple stages including violent phases that have produced both positive and negative impacts. But every revolution has left an imprint on the nations of the contemporary modern world. All the above revolutions are still alive not only in books of history but in the minds and lives of people. The storming of the Bastille is celebrated as the National Day of France, Russia commemorates November 7 which is the anniversary of October Socialist Revolution<sup>2</sup>, and the United States celebrates July 4, 1776 which was the day when the continental Congress adopted the final draft of the Declaration of Independence<sup>3</sup>.

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<sup>1</sup> Mehran Kamrava. "Revolution Revisited: The Structuralist-Voluntarist Debate." *Canadian Journal of Political Science / Revue Canadienne De Science Politique* 32, no. 2 (1999): 317-45. <http://www.jstor.org.ezproxy.library.britishcouncil.pk/stable/3232845>, 323-325.

<sup>2</sup> "Russia Carefully Marks 100th Anniversary of Great October Revolution", David Filipov, accessed June 06, 2018, <https://www.washingtonpost.com/world/europe/russia-carefully-marks-100th-anniversary-of-great-october-revolution/2017/11/06>.

<sup>3</sup> "The Story of Fourth of July" Constitutionfacts.com, accessed July 16, 2018, <https://www.constitutionfacts.com/us-declaration-of-independence/fourth-of-july>.

Hence, these revolutions were not only limited to the people who brought them but have also been memorialized by the succeeding generations.

The discussion of modern revolutions sheds light on another revolution of the modern world which is popularly known as the Industrial Revolution. This expression 'Industrial Revolution' was first used by Frenchman Louis Guillaume in 1799<sup>4</sup> but was popularized in 1880s<sup>5</sup>. It was started in England, and has been known as a unique phenomenon that changed the "face of England"<sup>6</sup>.

### **Does the Industrial Revolution qualify to be called a 'Revolution'?**

Industrial revolution is a challenging topic of research. It is difficult because numerous aspects of this vast period are debatable. There is a debate about the nature of this unique phenomenon. Whether it is appropriate to call it a "revolution" or since it is spread over a long period, it was an evolution.

In this regard, there is a need to have an understanding of the terms revolution and evolution. Although there are multiple views and versions regarding the explanation of the term revolution, it is mostly defined as a sudden change in the political and its interconnected institutions. The widely accepted version of a revolution describes it as a fierce movement that tends to put an end to an old and rotten system of government, and introduces new social and political order. It is an overthrow or a swift replacement of a government or a political system.

According to this view, revolutions are motivated by the prevailing discrimination in a society and are meant to eradicate social injustice and inequality. These revolutions are sudden and speedy and are manifested in such a way that it is visible and perceptible to all.<sup>7</sup> As the storming of the Bastille made Duc de la Rochefoucauld call it a revolution in an answer to

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<sup>4</sup> Vidya Dhar Mahajan, *History of Modern Europe since 1789* (New Delhi: S. Chand & Company Ltd, 1994), 9.

<sup>5</sup> Patrick O'Brien, Introduction: Modern Conceptions of Industrial Revolution in *The Industrial Revolution and British Society*, ed. Patrick O'Brien & Roland Quinault (New York: Cambridge University Press, 1993), 1.

<sup>6</sup> Carlo M. Cipolla, *Before the Industrial Revolution: European Society and Economy 1000-1700*.

<sup>7</sup> Jack A. Goldstone, *Revolutions A Very Short Introduction* (New York: Oxford University Press, 2014), 4.

the question of King Louis XVI whether it was a revolt.<sup>8</sup> On the other hand evolution is a gradual development of an event, theory or phenomenon.

The above description of widely accepted views of a revolution makes the case of the Industrial revolution more elusive as it was not motivated by such ideologies that are supposed to create an equal and just socio-political order as expected by the revolutions. On the contrary, the Industrial revolution widened the gap between the rich and poor by creating another class i.e.; the middle class. Neither did it topple any government nor was it resisted by the British government. Moreover, it did not occur suddenly but rather took years to spread out. Furthermore, it produced many hardships for the working class, the class that transformed the Industrial Revolution from just an idea into a reality.

Considering the above facts, the question that stimulates a debate is then why the industrialization has been termed as a revolution?

Perhaps in the case of Industrial Revolution it was the transformation. It was not a sudden radical occurrence but rather a wide ranging and far reaching development that evolved into a revolution by changing the “face of England”. The industrial revolution not only influenced the socio-political conditions of England but radically altered the British economy.<sup>9</sup> In the broader perspective the Industrial Revolution has been categorized as an economic revolution. However, the far reaching social and political changes and impacts demand a multidimensional approach to examine the nature of this particular revolution as all these aspects including the social and environmental, are encapsulated in the Industrial Revolution.

### **What Makes it a Revolution?**

Despite the differences of opinion among the scholars, the process of industrialization has been dubbed as the “industrial revolution”, but as it has already been mentioned in above text that that particular revolution was a steady departure from old to new. Hence, the question arises as to why is the progress of industrialization termed as the industrial revolution? It was not an event which had taken place rapidly but is it appropriate to call it an evolution only because the span of the industrial revolution is a

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<sup>8</sup> Simon Baker, *Surrealism, History and Revolution* (N.P: Peter Lang, 2007), 93.

<sup>9</sup> “The Industrial Revolution”, Matthew White, The British Library, accessed 14 September 2018, <https://www.bl.uk/georgian-britain/articles/the-industrial-revolution>.

quite lengthy one? Is it reasonable to disregard the distinctive development and that rare progression that the world, or to be more precise, England had witnessed?

Although the term revolution is quite often expressed as a speedy overthrow of a prevailing system or a forceful takeover followed by fierce warfare and hostilities, it actually refers to the remarkable transformation that comes after a particular event. The Industrial Revolution was an era of great metamorphosis that reverberated on a global scale. It was a mechanical take over which ultimately modified the procedures, methods, and approaches of production.

The Industrial Revolution was a different type of revolution, fairly apart from the revolutions that occurred in the United States and France. It was not the one that demanded a comprehensive alteration of the political setup of a country; on the contrary it was a process that revolutionized the manner of work. The work which was formerly done by hands in the fields was now being done with the help of massive machinery. The power supply was moved from water to steam which made the work more efficient. One after the other the developments that were taking place in England were exceptional in nature. What made it an extraordinary era? The evidence was that a person born in 1760, during the period of industrial revolution, would have witnessed more changes than ten preceding generations had ever observed. The results of the industrial revolution were not felt instantly. The progression, no doubt, was a gradual one but the changes it brought in the lives of the people of England were not less than a revolution.

The railways, the steam powered machines, and the ever-increasing efficiency of industrial work portrayed a completely novel scene, which was unimaginable in the bygone ages. The Industrial Revolution was a remarkable development.<sup>10</sup>

Taking its literal meaning of a revolution into consideration, it is a sudden change that leads to a new order. It can be in the political, social, economic, or any other spheres. However, it is not necessary for every revolution to manifest itself rapidly to meet the criterion as there are no

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<sup>10</sup> William L. Langer, ed., *The Rise of Modern Europe Political and Social Upheaval 1832-1835* (New York: Harper & Row, N.P), 27.

established criteria. Revolutions can occur suddenly or in several phases. The manifestation of a revolution is dependent on the contemporary time frame and technology. They may erupt suddenly, but the causes must have been simmering beneath the surface for a long time. Similarly, the course of events that make up a revolution can take a longer period. Hence, it can be presumed that evolution and revolution are not always opposite terms as both can lead to great change. Sudden or gradual, the focus remains on the “change” that eventually transforms the whole system. Keeping this explanation in mind, there should not be any doubts to call the whole occurrence of industrialization a ‘revolution’.

### **The Textile Industry**

The Industrial Revolution is marked by the departure from the old methods of production to an entirely new and swift system. It was the beginning of a new era of growth and sustainability which has been labeled as the “takeoff” in the economic sector. The term ‘takeoff’ has been used by Walt Whitman Rostow who is of the view that the cotton industry, which was one of the earliest industries in England, started the takeoff and led to revolutionary changes. Thus, it has been correctly dubbed as a revolution.<sup>11</sup> Although this takeoff was not a quick one but it would not be wrong to call it an ‘industrial revolution’.<sup>12</sup>

The takeoff was not quick but the textile industry emerged as one of the most profitable industries in England. The more surprising factor is that England had never produced cotton required to optimally process the textile industry rather it had always imported it from Asia, Americas, and North Africa. Despite of this factor, the UK appeared as the dominant cloth producer in the nineteenth century.

It was the Spinning Jenny that totally revolutionized the cloth making by producing and increasing the thread making thus saving time and manual labour. The availability of cotton and the introduction of spinning jenny proved to be of great assistance for the growing textiles of the UK as cotton

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<sup>11</sup> “The Industrial Revolution: Revolution or Evolution, Robert Wilde, History & Culture, March 06, 2017, <https://www.thoughtco.com/the-industrial-revolution-or-evolution>.

<sup>12</sup> Eric Hobsbawm, *The Age of Revolution 1789-1848* (New York: Vintage Books, 1996), 28.

was an easy and cheap, and was not as delicate as silk and wool. Hence, it was much easier to produce cotton cloth in abundance.<sup>13</sup>

This process of the Industrial Revolution helped Britain flourish and become one of the most powerful nations in the world. By the middle of nineteenth century, Britain was a wealthy country with booming industry and economy. It significantly transformed British society and made possible the growth of other industrial centers in Britain.

It was the same textile industry that led to an enormous fashion industry. Over the years a variety of clothing has been introduced which includes the synthetic fabrics as well. Along with the natural fiber, the novel form of fabric entered the fashion industry, which has since been experimenting with them. Another significant development of the textile industry was the availability of all sizes which was not possible before the Industrial Revolution as the era prior to that was dominated by the tailor-made clothes, and the production was majorly depended on the order placed.

The excessive production of clothes was very much an outcome of continuous altering in fashion trends, and according to an estimate the export of textile and clothing in UK is almost above six billion pounds per year.<sup>14</sup> The textile industry is not only producing clothes for international markets but also providing employment opportunity to a significant number of people all over the United Kingdom. Hence, the textile industry holds great importance not only in the economic sector but also in the social outlook of the United Kingdom.

### **Why is it Necessary to rethink the Industrial Revolution now?**

The above description makes it necessary to reconsider the Industrial Revolution in the context of environmental crisis. It is quite understood by now that the Industrial Revolution, during all its phases, has generated revolutionary results. However, the pros and cons of the impacts cannot be ignored. Not all revolutionary results are always positive. Correspondingly, the impacts of the Industrial Revolution vary in their nature and

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<sup>13</sup> Clair Hopley, 'A History of the British Cotton Industry', British Heritage, 29 July 2006, <https://britishheritage.com/british-textiles-clothe-the-world>.

<sup>14</sup> "Textile Industry In UK; the United Kingdom of Great Britain England Textile Apparel Business Overviews", Textile Infomedia, accessed 04 June 2019, <https://www.textileinfomedia.com/textile-industry-in-uk>.

characteristics. Its effects on the environment, specifically on England where it was started are the matter under consideration in the following space.

All over the world, the industries opened new horizons of economic growth and development. However, the widespread industrialization hastened new and dire climatic and environmental challenges. The persisting industrial activity increased the earth's temperature and pollution.

This creeping disaster which is overtaking the world, and in danger of damaging it beyond repair, it started with the Industrial Revolution.<sup>15</sup>

The above-mentioned remarks were given by the renowned British broadcaster and naturalist Sir David Attenborough at the event organized by the World Economic Forum at Davos. The remarks hold great significance in the context of climate change and the environmental crisis which is not limited to a particular country but is gripping the entire world. The comments shared by the Sir Attenborough not only indicate the dire environmental conditions but they also reevaluate the Industrial Revolution in the current geological age that is termed as the Anthropocene age.

The Anthropocene age is characterized by the ever-increasing human activity and its impact on the natural world. Though this age has started only in the middle of 1950s, its effects on the environment have been profound.<sup>16</sup>

The transformation from manual to machine made the bulk production easier fulfilling the ever-increasing consumption demand. As it has been mentioned above that the textile industry, which is one of the earliest and key industries in England, affected the sartorial choices and led to the

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<sup>15</sup> Joe Brennan, "David Attenborough Warns Leaders of Damaging World 'Beyond Repair' Jan 22, 2019, <https://www.irishtimes.com/business/technology/david-attenborough-warns-leaders-of-damaging-world-beyond-repair-1.3766737>.

<sup>16</sup> Damian Carrington, "The Anthropocene Epoch: Scientists Declare Dawn of Human-Influenced Age, 29 August 2016, <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>.



emergence of the fashion industry. The simple manually made attire of preindustrial age with limited choices of colour and design were now replaced with the machine woven and stitched clothing and textile dye. This fast fashion was undoubtedly a revolutionary feature of the present world. However, it has also contributed to the current environmental crisis by releasing harmful materials i.e. textile dye in the waters and carbon dioxide emission by burning the clothes. Moreover, thousands of abandoned and used clothes are dumped in the landfills consequently making the textile industry the second largest polluter at present. According to a research, every year £140 million worth of clothing is dumped in the landfill which is contributing to the world 'waste'.<sup>17</sup>

Another pollutant which is not as old as textile is plastic. Plastic is a light weight, flexible, and comparatively a cheaper material used in the production of many products. The early form of plastic was made of fossils and carbon which was used with the intentions of reducing the burden on natural resources. In the middle of the twentieth century, synthetic plastic replaced the older forms and soon swapped the glass and iron products and is being widely used in the manufacturing and packaging of thousands of products and in the textile industry.

Plastic is used in the synthetic fabric like nylon, acrylic and polyester and according to a latest research by a marine biologist Professor Richard Thompson, these materials, upon washing, release microplastic<sup>18</sup> to the environment and accumulation of these small fragments of plastic contaminate the rivers and oceans. The Thames, which is the main river in the West midlands of England, was declared as one of the most contaminated rivers after more than one thousand small particles of plastic were found in it.<sup>19</sup> Every year tones of plastic in various forms end up in the oceans that has triggered a global marine crisis. The extensive utilization of single use plastic has increased the plastic waste which mostly

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<sup>17</sup> The Wrap, accessed 09 June 2019, <http://www.wrap.org.uk/content/clothing-waste-prevention>.

<sup>18</sup> "Fashion's Toxic Thread," The Economist video, 7:12, February 1, 2019, <https://www.facebook.com/TheEconomist/videos/1936115156516673/>.

<sup>19</sup> Damian Carrington, "Microplastic Pollution Revealed 'Absolutely Everywhere' By New Research", The Guardian, 7 March 2019, <https://www.theguardian.com/environment/2019/mar/07/microplastic-pollution-revealed-absolutely-everywhere-by-new-research>.

discarded in the landfills and ocean, creating alarming living conditions for many species and humans are surely one of them.

Another environmental dilemma associated with the fashion industry is the incineration and dumping of the used and unsold clothing stock. Every year three out of five clothing items end up in landfills. The UK Parliamentary committee report on 'Sustainability and Fashion Industry' has revealed that the burning of the clothes release carbon dioxide and scores of other greenhouse gasses to the environment which are not only injurious to the human health but increasing the global warming. The report has suggested the government of the UK to prohibit the incineration and discarding the clothes and encourage the practice of recycle and reuse.<sup>20</sup>

Considering the above situation, the concern of Sir David Attenborough and many other activists seems timely, and the phrase that 'the Industrial Revolution changed the face of England' becomes relevant. From the smoky chimneys of the factories to the widely urbanized towns and now to the land and oceans full of industrial pollution, the Industrial Revolution did alter the entire landscape of England.

### **Conclusion**

The favourable conditions of England in the eighteenth century made the Industrial Revolution inevitable, and now its impacts both positive and negative are inescapable. It is an undeniable fact that the industries cannot be shut down overnight in order to bring a positive change. It is near impossible to recollect what the Industrial Revolution has dispensed. Similarly, it is unfeasible to roll it back. Here the question emerges what should be done instead? The answer is not a reversal but replacement, sustainable practices, and liable utilization of resources, particularly the natural resources. Sustainability is the best response to the environmental challenges created by the Industrial Revolution. It was not the Industrial Revolution but an unchecked "take, make and dispose" practice involved in the process of industrialization that makes it a burden of history.

In England multiple measures are being taken to tackle the problem. From school students to the Royals, all are participating in the effort to reduce the severe environmental effects. A television series hosted by Sir David

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<sup>20</sup> Chris Baraniuk, "Will fashion firms stop burning clothes?" <https://www.bbcearth.com/blog/?article=will-fashion-firms-stop-burning-clothes>.

Attenborough called “the Blue Planet Effect” is creating awareness and prompting responsible action by the people and government.

Many in the fashion industry are now replacing the harmful textile dye with the natural dye. Many fashion firms have reduced the incineration of their unsold stock, and multiple fashion entrepreneurs are finding alternative ways to reduce the adverse impacts of an ever-changing fashion industry. They are also encouraging sustainable fashion and the use of natural fabric which can be used as compost when discarded.

The education sector is also emphasizing on the sustainable practices by encouraging the development of research centers that aim at inculcating new practical approaches to create a maintainable cycle that could restrict the production of waste.

The government of United Kingdom has banned the single use plastic and people are encouraged to replace plastic with more natural or eco-friendly products. The government of United Kingdom is one of the signatories of the Paris Agreement on Climate Change and has pledged to keep the global warming below two degrees Celsius.

The widespread chant of sustainability in all around the United Kingdom is evidence that the Industrial Revolution led to an unsustainable environment practice. It is not incorrect to assume that the Industrial Revolution revolutionized the textile industry, radically transformed the sartorial choices, and led to a booming fashion industry, though the landfills full of discarded fabric, the overutilization of water for cotton growth and water polluted with the textile dye and plastics and air filled with harmful gases projects a contradictory narrative. However, more than the Industrial Revolution it was the unrestricted cycle of over production and practices that created enough waste.

The Industrial revolution is rightly called a ‘revolution’ for it revolutionizes the system of production and consumption. The introduction of machine transformed human lives. However, the present presence of the Industrial Revolution needs a careful study. Keeping in view the environmental effects occurring due heavy industrialization in the textile sector, the Industrial Revolution does not portray an optimistic picture.

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It is acknowledged universally that in order to shape the future it is important to understand the present and its link to the past to find solution to the problems besieging us today. Hence, in order to comprehend today's environmental crisis there is a need to look back at the Industrial Revolution.