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ANALYSIS OF MARX AND ENGELS' THOUGHTS ON THE INDUSTRIAL REVOLUTION

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ABSTRACT

The Industrial Revolution, which emerged in Britain in the 18th century, was a major event that significantly influenced the course of human history. Lapar, Mantoux, and Ueda Teijiro all mentioned that Marx and Engels used or systematically explained the term "Industrial Revolution". However, these references were brief and lacked in-depth analysis, leaving room for further exploration and elaboration. Based on original works and returning to the texts, Marx and Engels analyzed and elucidated the five key factors that triggered the Industrial Revolution from the perspective of the contradiction between productive forces and relations of production. They presented the relationships between the subjects involved in these factors and, from the standpoint of the proletariat and with human emancipation as the guiding principle, revealed the institutional roots of alienated labor. They also analyzed and clarified the historical mission of the proletariat and the historical value of the Industrial Revolution, providing a valuable intellectual legacy and meaningful historical insights for understanding and grasping the ongoing new wave of the Industrial Revolution.

KEYWORDS: *Marxist thoughts on the Industrial Revolution; subject-object factors; class standpoint; value pursuit*

1. THE ORIGIN OF THE STUDY

The large-scale industry that emerged in Britain during the 18th century, along with the transformations it triggered, has been a significant focus of academic discourse. Klaus Schwab and Nicholas Davis, in their book, argue that the term "industrial (revolution)" might be too narrow to encompass the scope of this transformation. Instead, they suggest that the term used by 19th-century thinkers such as Thomas Carlyle and John Stuart Mill, namely "industrial revolution," might be more suitable (Schwab & Davis, 2018, p. 5). From the literature, it can be observed that not only 19th-century but also 18th- and 20th-century scholars employed the term "industrial revolution" to explore this momentous event in human social history, and Marx and Engels were no exceptions. Mantoux's work, *The Industrial Revolution in the Eighteenth Century—An Outline of the Beginnings of the Modern Factory System in England*, is acclaimed as a classic in economic history (Mantoux, 1997, p. 7). In the preface of this book, Ashton noted that the term "industrial revolution" was coined by Toynbee in the 18th century, and was subsequently used by Engels, Mill, and Marx (Mantoux, 1997, p. 3). Mantoux summarized the basic characteristics of the industrial revolution as the widespread advent of "machine-based production and the factory system," and he referenced Marx's discussion in *Capital* to clarify the distinctions between factories and craft workshops (Mantoux, 1997, p. 1). From the footnotes that Mantoux provided at the end of his book, it can be seen that Rappard pointed out in *The Industrial Revolution in Switzerland and the Origins of Legal Labor Protection* that Engels had used the term "industrial revolution" in *The Condition of the Working Class in England* on pages 11 and 355 in 1845, while Marx systematically elaborated on it in *Capital* (Mantoux, 1997, p. 390). However, Mantoux and Rappard did not provide detailed explanations of how Marx and Engels used or explained the term.

Teijiro Ueda, in the opening chapter of *The History of the Industrial Revolution*, stated that Marx and Engels not only explained the necessity of the "industrial revolution" from the standpoint of scientific socialism but also frequently used the term (Ueda, 2017, p. 1). While investigating the direct causes of the industrial revolution, he directly cited Engels, stating that the industrial revolution began with the invention of the spinning machine and steam engine (Ueda, 2017, p. 7). However, as Jameson put it, "The 'privilege' of Marxism lies in its intervention and mediation between different theoretical codes, far beyond what these codes can achieve themselves" (Jameson, 1997). In other words, in terms of Marx and Engels' usage and explanation of the term "industrial revolution," Teijiro Ueda provided relatively more commentary compared to Mantoux and Rappard, but it was still far from being a deep and systematic analysis of Marx and Engels' thoughts on the industrial revolution. This paper aims to return to the original works, re-examine the texts, comprehensively

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and thoroughly restore and interpret the initial thoughts of Marx and Engels on the industrial revolution, supplement, expand, and deepen the perspectives of the above-mentioned scholars, provide valuable historical insights for understanding and grasping the new wave of industrial revolution, and offer intellectual tools and a practical guide for the breakthroughs in core technologies and industrial upgrading in China.

2. SIX DIMENSIONS OF MARX AND ENGELS' THOUGHTS ON THE INDUSTRIAL REVOLUTION

Engels once humbly stated that most of the guiding ideas he and Marx developed, particularly in the fields of economics and history, belonged to Marx (Marx & Engels, 1995, p. 242). Engels also emphasized that in *The Condition of the Working Class in England*, he described the "youthful phase" of the British Industrial Revolution (Marx & Engels, 1995, p. 422), while Marx, in *Capital*, depicted the period when "the prosperity of British industry had reached its peak". In this work, Marx developed their ideas into a scientific system (Marx & Engels, 1995, p. 423). Therefore, following Marx's logical pathway in *Capital*, this paper examines their thoughts on the industrial revolution through six dimensions to analyze their rich content and profound connotations.

(1) The Historical Prerequisites of the Industrial Revolution: The Development of Exchange and Division of Labor

The Industrial Revolution in Britain in the 18th century was not a random event; rather, it was a manifestation of the interconnectedness and mutual influence of exchange and the division of labor, reaching a decisive point through continuous development. Marx linked these facts with the evolution of industrial production methods and expounded on the historical prerequisites of the industrial revolution. Marx divided industrial production since the Middle Ages into three historical periods: household handicrafts, handicraft manufacture, and large-scale industry. These three periods succeeded one another like geological layers. Handicraft manufacture emerged from household handicrafts in two forms—simple cooperation and cooperation based on division of labor. Initially, with the establishment of the colonial system and the development of maritime trade, exchange means and markets expanded, and capital accumulated continuously. In order to conduct large-scale production and reduce unnecessary costs, different production tools and craftsmen were gathered in a large workshop under the control of a single capital. However, they continued laboring according to handicraft production methods, meaning that small master craftsmen worked with a few apprentices and assistants, with each worker manufacturing the entire product, completing each operation sequentially. This was the simplest form of cooperation, in which there was almost no division of labor or only partial division.

As external market demand and exchanges continued to expand, the need arose to provide a large quantity of finished goods within a specific time frame. This necessitated the adjustment and alteration of the original production methods, thereby shifting labor within workshops to a new method. Specifically, the various operations required to produce the entire product were separated and isolated according to the principle of division of labor, with each worker specializing in a single task or partial procedure, all operations occurring simultaneously in collaboration. This kind of division became systematic and institutionalized, leading to the differentiation, specialization, and simplification of production tools. Marx stressed that the accumulation of production tools and the development of division of labor were closely linked and mutually reinforcing. Every significant technological development in machinery spurred further division of labor, and every increase in division of labor, in turn, prompted new inventions in machinery (Marx & Engels, 1972, p. 164). Since machines consisted of numerous simple tools assembled into a single mechanical apparatus, which increasingly developed into sophisticated machine systems, the period of handicraft manufacture laid the technical and material foundation for the advancement and application of machinery.

At the same time, Marx pointed out the production and technological limitations inherent in handicraft manufacture. On the production side, the specific division of labor in handicraft manufacture fixed workers in isolated operations, whereas the production of goods often required a series of interlinked stages and processes. Maintaining the continuity of these interconnected operations inevitably incurred additional, non-productive expenses. Technologically, as different operations required varying time commitments, unequal quantities of intermediate products would be produced in equal periods. To achieve production goals within specific timelines, labor allocation across operations needed to be adjusted proportionally. In Marx's view, compared to household handicrafts, handicraft manufacture had its advantages, but "it could not achieve genuine technical unity based on its own foundation" (Marx & Engels, 1972, p. 386), nor could it overcome "the separation of individual processes resulting from division of labor" (Marx & Engels, 1972, p. 418). True technological unity existed only in mechanized factories, and only in machine-based production could continuous, uninterrupted work occur without dividing processes (Marx & Engels, 1972, p. 418). Additionally, the technological foundation of handicraft manufacture remained within the scope of manual labor. When market demands expanded to the extent that manual labor could no longer satisfy them, it was necessary to surpass its technological limitations and transition to large-scale industry based on machinery. Thus, the contradictions and conflicts between the technological foundation of handicraft manufacture and the production demands it had created led to the historical prerequisites for the British Industrial Revolution.

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(2) The Technological Foundation of the Industrial Revolution: Developed Machines Driven by an Automatic Engine

Marx divided developed machinery into three components: the prime mover, which generated power; the transmission mechanism, which transmitted power; and the tool or working machine, which processed and produced. From a functional or division-of-labor perspective, the advanced machinery used in large-scale industry evolved based on technological changes in working machines and prime movers. Marx referred to changes in the working machines as the first revolution and the "use of the steam engine as a machine generating motion" as the second revolution (Marx, 1978, p. 53). Engels went even further by straightforwardly stating that "the invention of the steam engine and cotton-processing machines" spurred the industrial revolution (Marx & Engels, 1957, p. 281). Marx elaborated on the transformation of hand tools into developed machinery, analyzing the technological foundation of the industrial revolution.

The first stage involved changes to the working machines, i.e., the part of the machine that performed the labor, which originated in the tools and implements of household handicraft production and further developed during the heyday of handicraft manufacture (Marx, 1978, p. 53). The sequential invention of the spinning jenny, the water frame, and the spinning mule, all of which were referred to by Engels as "cotton-processing machines," resulted in changes to the working machines. However, these working machines still relied on "human beings themselves" for power and skill, and they did not fundamentally transform the mode of production. Nevertheless, they represented the "origin of the industrial revolution" (Marx, 1978, p. 53), heralding its arrival.

The second stage was the transformation of the prime mover. As the scale of the working machines increased and the number of tools on those machines expanded, the transmission mechanisms grew, necessitating a source of power greater and more consistent than human labor to provide continuous, uninterrupted motion. Consequently, Marx emphasized that "the creation of working machines made the revolution of the steam engine necessary" (Marx & Engels, 1972, pp. 390-391). Importantly, the steam engine being referred to here was James Watt's double-acting steam engine—a prime mover capable of generating its own power through the consumption of coal and water. It was also described as the "universal motive power applicable to all industrial sectors" (Marx, 1978, p. 117). This advancement transformed machinery from a mere hand tool into an elaborate system driven by an automatic engine, thereby enabling the mass production of machines by machines themselves. Large-scale industry established the technological foundation it required, shifting from the handicraft manufacture method to machine-based production, transforming sectors beyond textiles and chemicals, such as mining, metallurgy, metalworking, machinery manufacturing, and transportation, among others—all the "sectors of industrial activity" (Marx & Engels, 1957, p. 219). Especially notable was the advancement of machinery manufacturing, which allowed the machine system to continue to develop into a unified automatic system, fostering interdependence between previously isolated production sectors. Thus, the industrial revolution reached its "most decisive stage" (Mantoux, 1997, p. 269).

(3) Institutional Guarantee of the Industrial Revolution: Establishment and Popularization of the Factory System

From within the large-scale industry, advanced machinery driven by steam engines represented a fundamental technological factor—arguably the most crucial among them. Observing the historical development of industrial production, household handicrafts corresponded to cottage and household industry systems, and handicraft manufacture corresponded to the workshop and craft production systems. Similarly, large-scale industry based on advanced machinery required an organizational and production system aligned with it. Marx noted that the application of advanced machinery relied on factories that implemented a comprehensive division of labor, with machine-based production completing its work within mechanical factories. Factories represented the inherent form of workshops based on machine usage, with mechanical factories being the most advanced form of employing developed machinery, while the factory system represented the corresponding form of advanced labor organization (Marx, 1978, p. 41). The factory system was inextricably linked to the use of advanced machinery, and the two were regarded as basic features of the industrial revolution. The former acted as an institutional guarantee, while the latter served as the technological foundation; together, they promoted the industrial revolution, interacting and reinforcing one another. As mentioned earlier, developed machinery underwent an evolutionary and developmental process, and so did the factory system—it gradually and continuously infiltrated all industrial sectors (Marx & Engels, 1957, p. 495).

Marx quoted Dr. Andrew Ure's view of the factory system as an "order," noting that such order was absent in handicraft manufacture, which was based on scholastic division of labor. The three aforementioned "cotton-processing machines" described by Engels represented different stages of the factory system. The use of the spinning jenny did not require specialized workshops and had little impact on workers, without altering labor organization or destroying household handicrafts, thereby marking the transitional phase between household and factory systems. Arkwright gathered capital to install the water frame in large buildings, signed partnership agreements, and established the largest factory of the time, employing numerous home-based workers—thus "grafting the factory system onto the workshop system," and establishing order. Nevertheless, this did not fundamentally alter the nature of industrial production but only marked the beginning of the factory system. The invention and use of the spinning mule, especially water-powered automatic spinning mules that were used in hundreds of factories, provided the factory system with a solid framework. Marx pointed out that "a

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labor organization and labor combination entirely dependent on a system of machinery emerged only in factories driven by an automatic machine" (Marx, 1978, p. 55). With the application of steam-powered advanced machinery in factories, workshops expanded into mechanical factories, manual labor transformed into machine-based production, and the factory system was established. In textile, metalworking, and machinery manufacturing industries where the enterprise conditions allowed, the factory system was widely adopted, achieving "absolute dominance" in large mechanical factories (Marx & Engels, 1957, p. 486). It even dominated large-scale agriculture (Marx, 1978, p. 41), thereby providing a solid institutional foundation for the industrial revolution.

With the establishment and popularization of the factory system, production materials such as machinery and raw materials became increasingly concentrated, and population and capital also concentrated in factories. Marx considered this concentration, based on the factory system, to be "the condition for machine production" (Marx, 1978, p. 43). This was a means for capital to control production materials and achieve capital appreciation, as well as a new condition for labor exploitation and control. In other words, the machine-based production rooted in the factory system fundamentally transformed the modes and nature of production, heralding the beginning of the era of large-scale industry. This organized form of machine-based production became a consciously controlled mode of capitalist domination, characterized by the organized system of large-scale production and factory organization. Hence, industry based on machinery and the factory system was directly interpreted as "an organization, a production system" (Mantoux, 1997, p. 9)—a form of production relationship that typified the nature of capitalism and had the power to influence the entire economic and social system, to the extent that people could consider it as revolutionary.

(4) The Scientific Foundation of the Industrial Revolution: The Development and Application of Scientific Theories and Methods

By the 18th century, a new field of inquiry—technology as a study of production processes—began to emerge. Mechanics, physics, chemistry, and other natural sciences increasingly became connected with industrial production, and scientists were explaining these connections in ways that provided scientific theories and methods for new inventions and production improvements (*Marx, 1978*, p. 72). Watt's invention of the steam engine exemplified the extensive application of these sciences, with continuity, automation, and the operational speed of machine production all being "solved through the technological application of mechanics and chemistry" (*Marx & Engels, 1972*, p. 417). In the broader context, the Industrial Revolution was both nurtured during the age of empiricism and emerged during the age of scientific advancement. Marx examined the process of invention, construction, and application of the steam engine through the lens of dynamics and mechanics, thereby elucidating the scientific basis of the industrial revolution.

Technologically, the Industrial Revolution was propelled by successive transformations of working machines and power engines, and the technological shift and union of the power engine and working machines played a decisive role. Marx explained that, during the process of production, the power that drove the tool included human labor, animal power, water power, windmills, watermills, and steam mills. Among these, the first four sources of power did not represent any new principles, whereas the construction of the watermill was the true application of mechanics (*Marx, 1978*, pp. 58-59). After the Middle Ages, watermills coexisted with handicraft and handicraft manufacture production but did not trigger a fundamental transformation in production methods. It was not until the second half of the 18th century that the steam engine, invented to create steam mills, resulted in an automatic system of machinery. This progress in technology was not solely the result of generations of accumulated experience but also the appearance and application of theories such as friction theory, siphon theory, hydraulics, hydraulic engineering, and turbine theory during the 18th century. Specifically, James Watt's technical improvements to the Newcomen steam engine—including the invention of the double-acting steam engine—were achieved through significant scientific discoveries, including mechanical theory, the theory of latent heat, the principle of the condenser, and the principle of rotary motion, all developed through systematic, long-term experimentation in laboratories. Though building the steam engine still required the collaboration of skilled craftsmen such as clockmakers, tinsmiths, and watermen, its use represented the thorough application of science in production. For example, its application in the textile and paper industries involved alternating mechanical and chemical processes. In machine manufacturing—particularly for the production of specialized precision machines—it was necessary to ensure that the equipment and processes used to manufacture them achieved high levels of accuracy and precision. Manual labor and traditional production processes no longer met these demands, necessitating the introduction of new principles such as the principle of sliding and the principle of pneumatics. Without corresponding scientific theories and methods, high-level machine production would not have been possible (*Marx, 1978*, p. 123).

Therefore, traditional manual labor and production techniques initially assisted new inventions and large-scale industry. However, with the invention and widespread use of Watt's steam engine, science became an indispensable factor in production processes, transforming production into a scientific application. This transformation not only represented "the concentration of traditional experience, observation, and occupational secrets derived from experimental methods" but also the development of these into scientific theories and methods, which were used to analyze and solve production problems, driving the transformation of production methods and fostering the advancement of the industrial revolution (*Marx, 1978*, p. 208).

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(5) The Capital Logic of the Industrial Revolution: The Relationship Between Science and Large-Scale Machine Production Under Capitalism and Its Consequences

According to Engels, the political revolution in France and the philosophical revolution in Germany were the result of the union between science and philosophy, while the Industrial Revolution in Britain was the result of the combination of science and practice. However, during the 18th century, scientific disciplines such as mathematics, mechanics, and chemistry had already achieved their own forms of scientific knowledge, and in terms of scientific discoveries and technological advancements, "France, Sweden, Germany, and Britain were more or less on the same level" (Marx, 1978, p. 233). Yet why did the Industrial Revolution first occur in Britain? Marx explained this with "four onlys": only under the capitalist mode of production could "the kind of practical problems that required scientific solutions arise for the first time"; only the immediate needs of capitalist production reached a scale that "made the application of science both possible and necessary"; and only in Britain had economic relationships developed to the point where "capital was able to take advantage of scientific advances" (Marx, 1978, pp. 206, 233). In other words, the occurrence of the Industrial Revolution was also rooted in the link between science and large-scale machine production mediated by capital. Marx analyzed this relationship and its consequences by examining the relationship between capital and labor productivity, revealing the underlying logic of capital in the Industrial Revolution. In Marx's analysis, capital is value capable of creating surplus value, while labor is the source of value, and surplus labor is the source of surplus value. In pursuing endless capital accumulation, capitalists also sought to continually increase labor productivity, or as Marx stated, "labor productivity is productivity precisely because it is the productivity of capital; their growth is one and the same" (Marx, 1978, pp. 182-183). The value of a commodity is determined by the socially necessary labor time it embodies. Machinery, being a product of production, has value and represents social labor. In production, machinery transfers its value—determined by the labor required for its creation—to the products, thereby contributing to their appreciation. Machinery's use thus contributes not only to society's labor productivity but also converts natural forces, such as water, wind, steam, and electricity, into components of social labor. While natural forces, resources, and even scientific forces may cost the capitalist nothing, capitalists can only harness these forces by "possessing capital," especially "the form of machinery as capital" (Marx, 1978, p. 190). Through the use of machinery, capital generates surplus value from surplus labor. In this way, capitalism transforms the productive potential of society into the productive force of capital. Capital's goal of increasing labor productivity and extending the scope of production required that all domains of nature submit to production (Marx, 1978, pp. 190-192).

As a result, under capitalist production, large-scale machine production not only subordinated natural forces to direct production processes but also, for the first time on a large scale, created the material means for the advancement of natural science. Capitalism transformed science into a practical tool for production, making it a conscious and systematic element of production. Researchers funded by capitalists were encouraged to continually explore practical applications for science to advance production, thereby "for the first time systematically and extensively developing and applying scientific factors" (Marx, 1978, p. 208). This use of science enabled capitalists to extend their ability to exploit and control nature, and the productivity of capitalist production grew "at an unprecedented pace and on an unprecedented scale" (Marx & Engels, 1995, p. 741), fundamentally transforming production and social life.

However, Marx also emphasized that in mechanical factories, organized under the factory system, surplus value ultimately stemmed from the exploitation of labor power. The capitalist's appropriation of science, and the conversion of science into an applied science for production, was accomplished by "subordinating the worker to capital" (Marx, 1978, pp. 211-212). Thus, under the capitalist mode of production, both science and machinery became forces that opposed labor—forces that obeyed and served capital, executing the "function of a master". To the worker, these forces became "alien, antagonistic, and domineering" (Marx, 1978, p. 207).

Therefore, the result of linking science with production under the capitalist mode of production was inherently dual in nature. While the productive forces of capitalism underwent significant expansion, the relations of production also experienced deep changes, intensifying the degree of exploitation and oppression faced by workers and exacerbating the antagonism between capital and wage labor. This antagonism manifested as a contradiction between capitalists and workers, or the bourgeoisie and the working class, a contradiction that, when intensified to a certain point, would lead to social revolution. Engels thus believed that the result of applying science in production was also social revolution (Marx & Engels, 1972, p. 28), thereby shifting the focus of Marxist industrial thought from capital logic to the logic of human emancipation.

(6) The Historical Value of the Industrial Revolution: Facilitating the Construction of the Association of Free Individuals

Marx believed that, during the Industrial Revolution, science increasingly entered human life through large-scale industry and reshaped it. Even though, under the capitalist mode of production, science had "to fully develop in a form alien to humanity" (Marx, 2016, p. 86), it nonetheless laid the groundwork for human emancipation. Engels pointed out that capitalist large-scale industry had developed "conflicts that made the transformation of production modes absolutely necessary," but it also "developed the means to resolve these conflicts through immense productive forces" (Marx & Engels, 1995, pp. 607-608). Hence, through an examination of the capitalist

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production process, Marx and Engels not only revealed the irreconcilable contradiction between the bourgeoisie and the proletariat but also discovered the dynamic of productive forces and production relations and identified the path for human emancipation. They further analyzed this path through the relationship between industry, science, and the generic essence of humanity, clarifying the historical value of the Industrial Revolution.

Marx noted that "the history of industry and the objectively existent products of industry are open books on the essential powers of man" (Marx, 2016, p. 85). However, under the capitalist mode of production, not only machines and science but also labor itself became an alien force, leading to the alienation of human essence and estrangement among people. Regarding the root cause of alienated labor, Engels argued that it "must be sought in the capitalist system itself" (Marx & Engels, 1995, p. 421), while Marx attributed it directly to the capitalist private ownership of production materials, i.e., "modern bourgeois private property" (Marx & Engels, 1995, p. 286). Therefore, eliminating alienated labor requires abolishing this ownership model and establishing a system of ownership based on the social nature of modern production materials—whereby society collectively owns the materials as means for sustaining and expanding production, while individual producers directly own them as living and enjoyment resources (Marx & Engels, 1995, p. 754). This implies that, after the proletariat seizes state power and establishes public authority as the ruling class, they should use this power to transform the bourgeois-controlled social production materials into state property or public property. In doing so, these production materials are liberated from the constraints of the capitalist mode of production, free from their role as capital, allowing their social nature to be fully realized. Thus, the mode of ownership corresponding to the accelerated development of productive forces is established, and through the development of industry and natural sciences, society can "lay the foundation for truly human life" (Marx, 2016, p. 86).

To Marx, conscious and free activity is a human characteristic that is demonstrated by the practical creation of an objective world and the transformation of the natural world. Since industry represents the practical relationship between humans and nature and is also the foundation of human science, the true human mastery over nature could only be achieved through industrial and scientific advances, even though this was initially in an alienated form (Marx, 2016, p. 86). This means that, under conditions of social ownership of production materials, the conscious application of natural sciences to industry and the promotion of a new round of technological revolution and industrial transformation would ensure the development of social production. This development would guarantee not only an abundant material life for all social members but also the full development and utilization of their physical and mental abilities. As production continues to advance, the social ownership of production materials would gradually transform into direct individual ownership, eliminating the existence of class antagonisms. Thus, "the natural laws that have always ruled over people" and "the objective alien forces that have hitherto dominated history" will come under the conscious control of humanity, and humans will become masters of their social relationships and, therefore, the conscious masters of nature and of themselves (Marx & Engels, 1995, pp. 758, 760). Consequently, humanity can form an association of free individuals, where "each individual's free development is a condition for the free development of all" (Marx & Engels, 1995, p. 294). This represents "the historical mission of the modern proletariat" (Marx & Engels, 1995, p. 760) and the most far-reaching historical value of the British Industrial Revolution.

In conclusion, the occurrence of the Industrial Revolution in Britain in the 18th century was not a random event but the manifestation of the interconnected and mutual influence of industrial capitalists, inventors, scientists, and workers, who, based on the development of exchange and division of labor, driven by capital, with science and technology as the foundation, and connected by the factory system, reached a decisive point through continuous development. Marx and Engels, from the standpoint of the proletariat and guided by the value of comprehensive human freedom, connected these subjective and objective factors, demonstrating the process of the British Industrial Revolution's occurrence and development, revealing the institutional roots of alienated labor, clarifying the future trend of human social development, and explaining the historical mission of the proletariat and the actions they must take. They highlighted the historical significance and the value of the Industrial Revolution, providing intellectual tools and historical insights for seizing the historical opportunities of the new round of the industrial revolution and promoting the modernization of socialism with Chinese characteristics.

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