

# The Impact of Marx's Technology Thought on Space and Human Essence<sup>†</sup>

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**Abstract:** Marx stressed that only by controlling the production tools to technically transform space can it be called the space of practice. Therefore, to explain Marx's space thought, we must consider its internal logic related to technology. This internal logic is mainly characterized by the space–time compression, under the guidance of technology, the formation of the world market and the formation of spatial productivity. Marx comprised all kinds of contemporary technological thoughts, understood and grasped technology from the perspective of practice, and provided important theoretical resources for reflecting on technology and space—the domain of the community of human destiny.

**Keywords:** Marx; technology; space; human essence

## 1. Introduction

Marx's thought of technology runs through his production practice, and technology is an important aspect of Marxist production theory. Marx pointed out that human history has always been associated with technological development, "the sum of productive forces achieved by people determines the social situation. Therefore, we must always study and discuss the" human history "in connection with the history of industry and exchange" [1] (pp. 33–34). In his letter to W. Borgius, Engels incorporated technology into Marxist historical materialism and insisted that "economic relations" were the "decisive basis" of history. These relations involved production and exchange, and thus the whole technology of production and transportation. This technology determines the mode of exchange and distribution of products, the division of classes, the relationship between domination and subordination, as well as the state, politics, law, and so on. From this point of view, production categories related to human society need to be understood in the historical background of technology.

## 2. Return to Marx: Technology as Practice

First of all, people's practical activities are carried out to meet the needs of people's own survival and development. Marx's technological thought is also based on people's practical needs. It is in order to meet people's own needs and unlimited pursuit of means of life in the process of historical activities that technological practice becomes an indispensable existence activity and gives technology special significance.

Secondly, Marx thinks that technology is a kind of productivity, and the development of productivity based on technology promotes the development of human history. In his manuscripts, Marx studied and summarized the extremely rich historical data of technology from ancient times to the middle of the 19th century, pointed out that technology existed as the object-oriented product of human's essential power, and put forward that technology is a kind of productivity and a means of labor created by human beings from a historical point of view. Moreover, Marx thought that technology is a kind of practice, and he understood



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and analyzed technology activities as human practice activities. In Marx's view, human production practice is always carried out on the basis of certain technology. Any labor practice that human beings engage in in order to meet the needs of survival and life contains the power of technology.

As a kind of practice, Marx's technology has its unique characteristics. On the one hand, Marx's technology is purposeful and regular. On the other hand, Marx's technology is ideological. Of course, in terms of the history of thought, Marx's thought of technology is mainly influenced by Hegel, Babbage, Ure Andrew and Franklin.

### 3. Technology and Space: An Important Aspect of Technology Influencing Space

The inevitable connection between space and technology is indisputable. Marx pointed out in anti-Turing theory that space is the basic form and condition of all existence, and "space is the essential factor for all production and all human activities" [2] (p. 872). It is also an important field of human practical activities, including material production, spiritual production and human production, which take technology as the externalization of human essential power. In Marx's technological thought, the space of technological influence is mainly characterized by the compression of time and space, the formation of the world market and the formation of spatial productivity.

First, "space-time compression"—space compression is realized by eliminating space with time. The industrial revolution has made science and technology develop continuously and caused a series of great changes in economy, politics, technology, ideology and geography, which has compressed time and space to an unprecedented degree in history. The compression of time and space shows that technology shortens time and then reduces space, which is reflected in the realistic relationship between technology and time and further affects the development of space. The development of technology rearranges the distance, overcomes the space barrier and shortens the time range. The products of human production practice based on technology, such as telegraph, telephone, railway, automobile, high-speed railway and airplane, become the concrete representation of space-time compression.

Second, the "world market"—the technology represented by machine has realized space expansion. Technology is the fundamental driving force of space expansion, and the original, one-tier production mode cannot realize the development of space in essence. The development of science and technology and economic globalization has greatly expanded human communication, practice, activity space and spatial cognition. With the emergence and application of modern ships, railways, automobiles, and other means of transportation, human production and life gradually get rid of the old block, and the space depth, breadth and dimension of human activities have been unprecedentedly expanded. Especially in the era of post-modern capitalism, the space of human daily life has gained unprecedented globality and expansibility. With the help of industrial technology, human beings have gradually liberated their ability to conquer and transform the space. As the object of the subject's conquest, natural space has become the object-oriented existence of human's essential power. The accelerated development of main technologies, such as division of labor, circulation, steam engine, machinery, railway and transportation has fundamentally changed the essence of world space and the way of human life, production and thinking. People are no longer limited to the current living space, nor just pursuing the material space, and then continue to extend to the spiritual space, virtual space, cosmic space, and so on. It can be seen that the development of technology has affected the development of the concept of space. It not only compresses the space, but also extends the space. It reveals that technology promotes the development of space to a certain extent and becomes the basis of expanding space.

Third, productive space—technology-based production practice accelerates the productivity of space. Marx believes that space production, as a special material production, has the production, consumption and distribution and exchange (circulation) and other factors, and technology always runs through this process of production and reproduction.

Just as division of labor accelerates the productivity of space, technology also accelerates the productivity of space in production logic, making the traditional physical space turn to productive space. At the same time, the world market formed by transportation and communication, as a global space, has contributed to the development of different countries. The economic, trade and exchanges between have realized the regional and global development of productivity.

#### **4. There Are Essential Differences between Marx's Technological Thought and Romanticism and Utopian Socialism**

As a kind of practice, Marx's technology is different from Romanticism's "in order to get rid of the modern conflict, we hope to abandon the modern technology" [3] (p. 4). The concept of technology of Marx is different from that of Utopian socialism, which is based on abandoning economy and social history, and also different from Heidegger's questioning of technology.

On the one hand, he pointed out the great role of technology in the history of human society, and human beings have been inseparable from technology, but on the other hand, he pointed out that technology cannot be unconditionally affirmed, we must recognize and face the problems existing in technology. That is why Marx critically believes that technology in capitalist society can bring progress as well as destruction from the perspective of capital. Both socialism and capitalism are progressing in technology. Technology is something they both share, not unique to capitalist society. We cannot talk about technology theory without criticism. First, romanticism rejects and negates technology, opposes rational society, and holds that technology leads to human alienation. Second, Utopian socialism does not regard technology as the basis of economy and society. It believes that socialism can be realized only through technological transformation.

#### **5. Conclusions**

Contemporary human life is in the age of technology and surrounded by technology. Technology has become the extension and externality of human beings, and constitutes a unique way of life. Technology has truly changed people's real world and living space, and affected people's cognition and experience of space and time. However, when technology as a tool of human life shapes human thinking, human reason has the risk of losing control of technology. Through the application of tools, human beings have become the dominator over all things. With the gradual development of technology, human beings have alienated themselves, "let their whole world outlook be dominated by empirical science, and be confused by the" prosperity "created by empirical science". This unique phenomenon means that modern people carelessly erase the problems that are crucial to real people [4] (pp. 5–6). In the *Human Condition*, Arendt has a profound insight and criticism on the contemporary human situation, thus bringing technology into the height of human existence, and pointing out the possible conditions for the restoration of human existence in public space and private space.

As a force shaping society, technology's real purpose "lies in practice and labor, and in the discovery of special things that human beings have never revealed, so as to better serve and benefit human life" [5] (pp. 2–3), Highlight the status and value of human, rather than make it a tool to rule and plunder mankind. If we want to achieve its real purpose, we must free technology from its social shackles. Only in this way can we prove that "man is the highest essence of man". As George Joseph Stigler said, the development of technology is "both hope and fear" for human beings. Only by deeply thinking about the increasingly globalized phenomenon of technicalization and how to realize the real power of technology, can we not fall into blind optimism or fatalism despair and arouse real hope for the future.

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