

Research on the Philosophical Relationship between Science Technology and Social Development

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Abstract: Natural dialectics, also known as philosophy of science and technology, is an important branch of Marxist philosophy. It mainly studies the general laws of nature, the basic methods of scientific and technological activities, the philosophical issues in science and technology and their development, the interaction between science and technology and society, etc. content. Among them, science and technology and society are the parts that best embody the characteristics of Marxist theory and are an important component of the scientific concept. Progress in science and technology promotes social development and social development constrains science and technology. The two are dialectically unified.

1. Introduction

As an important branch of science and technology philosophy, science and technology and society are universally recognized. There is a lot of interaction between technology and society and it is also well known. Then, in the final analysis, the relationship between science and technology and society is philosophical in nature. This paper mainly studies the issue from the following aspects.

2. Both are the main components of the scientific concept

With regard to the concept of natural science, Marx pointed out that natural science knowledge comes from social practice. Scientific concepts, laws and principles are the correct reflection of objective laws in the human mind. Scientific understanding continues to deepen with the development of practice. The driving force of scientific development lies in The need for social practice. Engels's "Dialect of Nature" puts forward that the dialectics for the study of nature must be based on natural sciences based on objective experience. Its core concept is "the Dialectics of Natural Sciences." With the follow-up of various researches, the study of natural sciences with the purpose of natural dialectics has become an important part of this field. In the "Encyclopaedia of Natural Dialectics", the "Demonstration of Natural Sciences" is the five main contents juxtaposed with "Dialectics of Nature", "Dialectics of Natural Research", "Dialectics of Natural Sciences Departments" and "Technical Dialectics". It is mainly about "the study of the nature and development law of natural science as a social phenomenon."

3. The relationship of them

Science and technology, as a type of human social activity, interact with other types of social activities such as economic activities, political activities, military activities, educational activities, and ideological activities. The interaction as one of the concepts of sociology is defined as the interaction and mutual promotion of various factors and their mutual causal roles and relationships. The interaction between technology and society is generally a two-way function: on the one hand, the effect of technology on other social activities is called the social function of science and technology; on the other, it is the restriction of other social activities on science and technology. The role of class constitutes the social conditions for the development of science and technology[1].

3.1 The Role of Social Development in the Development of Science and Technology

Social economy is the foundation of science and technology development. The socio-economic system is an important part of ensuring scientific and technological progress and regulates the direction of scientific and technological progress. There are mainly 1 competition mechanisms that stimulate the development of science and technology. The more fierce economic competition, the higher the need for high-quality scientific and technological personnel, the greater the need for large-scale cooperative research, and the greater the stimulation of the development of science and technology. 2 The socialization of large-scale production promotes the integration of science and technology into the collective research path of production and technology. 3 Scientific and technical legislation, invention patents and other rules and regulations provide an important guarantee for the development of science and technology. This system first recognizes and protects intellectual labor paid by inventors in legal form, and enjoys the right to economic compensation, so that scientific and technological inventions are made public in time under the protection of the law, and scientific and technological achievements are quickly transformed into social productive forces. The implementation of the patent system has also effectively promoted the exchange of scientific and technological intelligence so that the exchange of scientific and technological information is conducted according to legal procedures[2]. The quantitative formula for social economic development is as follows.

$$\left\| \frac{W_p(I + GK)^{-1}}{W_u(I + GK)^{-1}} \right\|_{\infty} < \gamma \quad (1)$$

Social politics is the atmosphere for the development of science and technology. Democratic politics is an important guarantee for the development of natural sciences. The determination of scientific truth is achieved in the course of practice. There must be full of truth and error. New ideas and old ideas, more complete conflicts between academic and incomplete scholarship. To promote in-depth research, we must be active in thinking. Therefore, academic freedom is the basic condition for ensuring the normal operation of this mechanism. The true meaning of scientific activities lies in the creation. Only in the atmosphere of academic freedom and lively research can scientists' creativity be brought into full play. Academic freedom must have political democracy as a prerequisite. Without democracy, there can be no academic freedom[3].

Social awareness counters technology. The influence of philosophy on the development of science and technology is reflected in the following aspects: 1 When scientists and scientists study the natural world, they must respond to the relationship between man and nature, that is, subjective and objective. 2 Scientific and technological research is a cognitive activity whose purpose is to reveal and use the objective laws of various special physical forms and movements in the natural world. And philosophy is to study the entire world. People's understanding of special laws will inevitably promote understanding of the general laws. The understanding of the general laws will inevitably promote the understanding of special laws. 3 The observations and experimental activities of scientific and technological workers must have the guidance of what theory. The philosophical categories of matter, movement, space-time, causality, and regularity are necessarily involved in the interpretation of data processing, phenomena analysis, and results[4].

Education maintains technological development. Science education is a necessary condition for maintaining scientific development. As we all know, scientific research has inheritance, so scientific development must be based on the scientific knowledge accumulated by previous generations and the starting point. The best way to master the previous knowledge is to learn. Science education is an important place for producing scientific knowledge. Teachers in higher education institutions are an important force for scientific research. Science education is an important way to realize scientific value. Any scientific creation and theory will only have an active role in the human's struggle to understand nature and transform nature, and its value will be truly realized. The following figure shows the growth rates of economy, politics and technology.

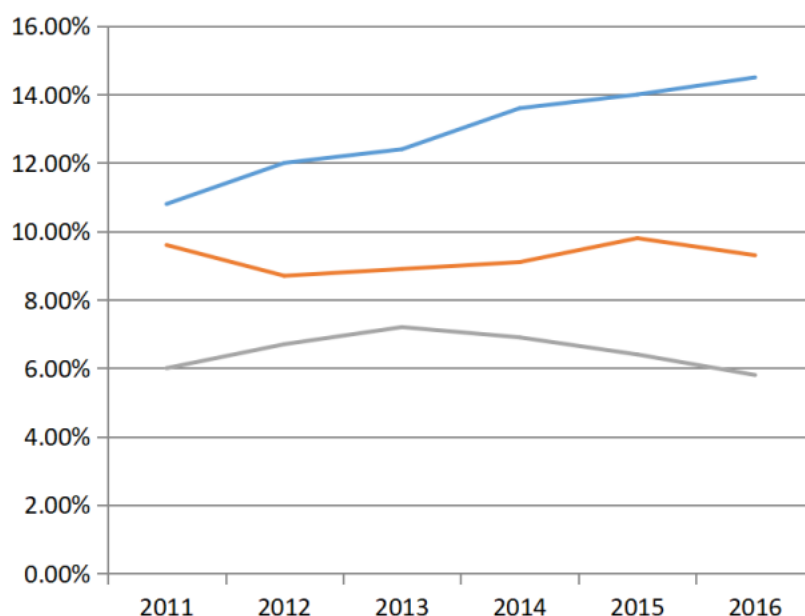


Fig.1 Growth rates of economy, politics and technology

3.2 The Social Role of Science and Technology

For Marx, science and technology have always been the factors of revolution. Science and technology have played an enormous role in promoting social civilization, including material civilization and spiritual civilization.

The role of science and technology in the development of social material civilization. Material civilization is the sum of the material achievements of humans in transforming the natural world. It is the fundamental symbol of the progress of social civilization. The fact that certain material civilizations are linked to the same level of productivity is a realistic manifestation of the development of productive forces: the first science and technology can be transformed into direct productivity; the second science and technology can cause changes in the industrial structure; the third scientific and technological development and its achievements in production. On the promotion and application, can directly promote the changes in the industrial structure; the fourth science and technology development can also affect the economic growth trend.

The role of science and technology in the development of spiritual civilization. Spiritual civilization refers to the state of wisdom and ideological and moral progress that arises and develops on the basis of a certain mode of material material production. It is the sum of the spiritual achievements of mankind in transforming the objective world and also transforming the subjective world. As a coagulation body of human intelligence, science and technology also play an important role in spiritual civilization. Through the exploration of scientific truths, natural sciences continuously improve people's ability to understand the world and thus raise the level of human spiritual civilization as a whole.

4. Summary

Deng Xiaoping pointed out: Science and technology are the primary productive forces. Technology and society are mutually infiltrating and promoting each other in the process of development, showing philosophical nature. As an important content of socialist spiritual civilization construction, science and technology have led and promoted social progress, and social constraints have influenced the advancement of science and technology. In short, a correct understanding of the relationship between science and technology and society has important practical significance for the current world and China.

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References

- [1] Christine V. Wood. Teaching and Learning Guide for: ‘the Sociologies of Knowledge, Science, and Intellectuals: Distinctive Traditions and Overlapping Perspectives’ [J]. Sociology Compass, 2011, 5(1).
- [2] Daniel H. Nickolai, Steve G. Hoffman, Mary Nell Trautner. Teaching & Learning Guide for ‘Can a Knowledge Sanctuary also be an Economic Engine? The Marketing of Higher Education as Institutional Boundary Work’ [J]. Sociology Compass, 2012, 6(7).
- [3] Božo Milošević. SCIENCE, ORGANIZATION, TECHNOLOGY AND SOCIAL PROGRESS [J]. Media, Culture and Public Relations, 2014, 5(1).
- [4] Yusuf Zorlu, Oktay Baykara, Fulya Zorlu. The Views of Pre-service Classroom Teachers about Nature of Technology [J]. Procedia - Social and Behavioral Sciences, 2013, 106.