

Research on the Function of Science and Technology Culture in the Construction of Ecological Civilization

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Abstract

Looking at the history of the development of human civilization, each time the progress and leap of civilization are based on the advancement of science and technology culture and the tremendous increase in productivity. As a civilization which is more advanced than industrial civilization, the construction and development of ecological civilization are based on the advancement of science and technology culture, and depends on the important functional support of science and technology culture. The article made an in-depth study of the important epistemological functions, methodological functions, and productivity functions that science and technology culture played in the construction of ecological civilization. It aims to solve the serious ecological crisis that China is now facing, to realize sustainable development and build a Beautiful New China.

Key words: Science and technology culture; Ecological civilization; Beautiful new China

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INTRODUCTION

Science and technology culture is a special culture that goes far beyond the technology itself and closely integrates with human society, morality, culture, politics, and economy. It is a theoretical tool for people to

recognize the nature and transform nature, and it is a systematic summary of scientific theory and experience. It belongs to the category of knowledge, so it must have the function of epistemology. In addition, culture is a kind of productivity. Science and technology culture, which is one of the special manifestations of culture, also has productivity functions. Its productivity function is reflected in the following aspects: On the one hand, it can bring enormous economic and social benefits; on the other hand, it provides intellectual support for the construction of ecological civilization; and it is also the spiritual power of people in the construction of spiritual civilization. So it requires us to understand and inspire the epistemological function, methodological function and productivity function of science and technology culture, in order to make it play the greatest role in the construction of ecological civilization.

1. GIVE PLAY TO THE “EPISTEMOLOGICAL” FUNCTION OF SCIENCE AND TECHNOLOGY CULTURE, AND PROVIDE A BASIS FOR THE CONSTRUCTION OF ECOLOGICAL CIVILIZATION

The “epistemological” function of the science and technology culture is that science and technology culture is a theoretical tool for people to recognize nature and transform nature, and it is a systematic summary of science and technology theories and it belongs to the category of knowledge. Giving play to the epistemological function of science and technology culture, we will continuously broaden and deepen the understanding of the “human and nature” system relying on science and technology culture, and provide a basis for the construction of ecological civilization. Nature is

the foundation of human survival and development. The relationship between human and nature means whether human beings can continue to survive and develop healthily. As a complex and large system, the operating mechanism of nature is also very complex. Science and technology culture plays a crucial role in the process of human understanding of the complex nature systems. Without the intermediary of science and technology culture, it is difficult for people to clearly define what they can and cannot do with nature, and how far can people do? We must also realize that, in the 21st century human society, with the rapid development of science and technology culture and productivity, the production of material information surpasses the previous situation, and people must pay great cost with huge resources and the deteriorating ecological environment. Human have to change the traditional backward development concept, and follow the new development concept of advancing with the times, that is, “innovation, coordination, green, open, and shared.” This is because human beings wantonly destroy natural ecology while carrying out development and practical activities, and they have been attacked back by nature which has seriously affected the better existence and development of human beings. The counterattack of the nature world on humans has made people realize the importance of nature to humans. In order to achieve sustainable development, people must first establish an attitude of respect and protection of nature, conform to the laws of natural development, and conduct regular practice activities. This means that, the laws of natural development and the laws of human practical activities cannot be changed and violated. At this time, we must give full play to the epistemological function of science and technology culture, understand and grasp the laws of nature relying on science and technology culture. At the same time, we must respect and apply laws to solve the serious ecological environmental crisis we face and maintain ecological health, in order to benefit our future generations and all humanity.

On the other hand, the serious new contradiction faced by our country's society is that the natural resources we have at this stage cannot meet the survival and development needs of our country's population, as well as the poor conditions of environmental pollution and ecological destruction. However, strictly speaking, the ecological crisis encountered at this stage is actually a crisis of public awareness of environmental protection. It is people's awareness of the natural environment is not enough, and the sense of crisis is not strong. For people to achieve sustainable development, we must establish crisis awareness and environmental awareness. We must abandon the traditional anthropocentrism, no longer occupy the high status of mankind, and give up the wrong idea that profit is all that matters. We must thoroughly bid farewell to those traditional “anti-natural”

development models, respect nature, comply with nature, and realize the two-way harmonious development of economic society and green civilized society. It requires us to give full play to the epistemological function of science and technology culture, so that the science and technology culture will motivate people to promote ecological awareness, expand their understanding of ecology, disseminate ecological knowledge and conscious ecological behavior, integrate new development concepts into the hearts of people, and enhance people's environmental awareness. All of these can motivate people to apply ecological values in the practice of ecological civilization construction and eventually gain greater common ecological benefits. We can also incorporate the concept of eco-technical culture into the daily cultural practice activities that are popular among the broad masses of the people, so that we can realize the renewal of the mass environmental protection activities. Cultural projects such as the “Community Environmental Art Festival” and “Village Ecological Science and Technology Festival” and so on are carried out to achieve the penetration of scientific and cultural knowledge and environmental protection knowledge, so that the general public can participate in practice and get profound influence, and ultimately realize the improvement of the quality of the science and technology culture and ecological environmental. We also can send the workers in science and technology culture and ecological to the community to conduct the preaching work as well as technical guidance, disseminate scientific and technological knowledge and ecological knowledge, and improve people's ecological protection capabilities.

2. GIVE PLAY TO THE “METHODOLOGICAL” FUNCTION OF SCIENCE AND TECHNOLOGY CULTURE, AND SOLVE THE PROBLEMS IN ECOLOGICAL CONSTRUCTION

Science and technology culture is not only a knowledge of nature, but also a method and a means by which people act on nature. In the construction of ecological civilization, it will inevitably have important methodological functions and provide guidance for the construction of ecological civilization. Therefore, we must actively use the “methodological” function of science and technology culture to realize the ecologicalization of science and technology, so as to better solve the ecological problems that contemporary humans face. In the history of science and technology, the early traditional operation mode of science and technology was “raw material-product-waste”. This operation mode had a single production process, produced a single product, and discharged large

amounts of waste. It was a wasteful operation mode with high consumption, high pollution, and low output. This operation mode not only seriously wasted a lot of human, material and financial resources, but also caused serious environmental consequences, environmental pollution, and ecological destruction, which seriously affected human production and development. Faced with this serious situation, it is necessary to use the methodological function of science and technology culture to change this backward operation mode of science and technology, change the development model, adjust the economic structure, and establish a new operation mode of “raw materials-products-residues-products”. It requires us unwaveringly to abandon the backward production mode with great determination and courage, take the initiative to adapt to new market demand and reverse the passive situation of structure mismatch between supply and demand; It requires us to use the innovation in technology and culture as the fundamental driving force, open and develop the structural adjustment of domestic enterprises, coordinate the development of all aspects of functions, adhere to green development, and strive to create an upgraded version of the economic growth model. Instead of we will continue to expand with traditional elements, consume resources, destroy the environment, and blindly pursue economic benefits to achieve development. At this stage, socialism with Chinese characteristics has entered a new era and is facing new environmental issues. There are new development requirements. More than ever, we need to rely on the methodological function of science and technology culture, and the methodological function of science and technology culture is more striking than ever before. We should rely on science and technology culture to provide solutions to ecological problems, and promote the formation of new ways of green and low-carbon cycle development, in order to continuously realize the good development of China’s social ecological construction.

At the same time, China’s modernization process is actually a process in which traditional culture and science and technology are integrated. Science and technology culture plays an important role in promoting the modernization process of our country’s traditional culture to achieve creative transformation and innovative development. In the process of development, science and technology culture will explore and reconstruct the valuable core of our country’s excellent traditional culture. For example, it integrates the ideas of Benevolence, Justice, Courtesy, Wisdom, Faith and Harmony into the process of the development of science and technology culture and the construction of ecological civilization, and forms a new ecological ethics thought. That is to say, science and technology culture gives humanity more rich and more profound meanings. Humans must not only pursue their own survival and development, but also understand that natural biological life is also hard-

won and worthy of respect. This means that science and technology culture not only plays an important role in social production practice, but also plays an important role in carrying forward social ethics and morals, ecological ethics, and raising people’s moral awareness and level. At present, under the premise of respecting nature, conforming and protecting nature, we pay attention to the technological ethics, develop green science and technology, and enable better development and utilization of some new energy sources and new materials with pollution-free and high-utilization. At the same time, we must realize the sustainable development of resources and the ecological balance in nature. This shows that people’s attitude toward the natural world begins to change, from conquering nature to respect nature and living in harmony with nature, that is to say, human beings in nature also emphasize ecological ethics and respect for other lives. For example, the application of the high-tech engineering, genetic engineering and microbiology engineering that we have developed at present have broken through the new model of natural life and human development, which is an important manifestation of science and technology culture in promoting the transformation of the modernization of China’s traditional culture. In general, nature and human being have the right to exist and develop. While realizing our own development, we respect other life, harmonize the relationship between nature and humans, give full play to the methodology function of science and technology, and promote the benign development of socialist ecological civilization.

3. GIVE PLAY TO THE “PRODUCTIVITY” FUNCTION OF SCIENCE AND TECHNOLOGY CULTURE, AND PROVIDE ECONOMIC SUPPORT FOR THE CONSTRUCTION OF ECOLOGICAL CIVILIZATION

Marx once pointed out that “Capital was predicated on certain historical developments of the productive forces, and science was also included in these productive forces.” (*Complete Works of Marx and Engels [Vol. 46]*, 1980, p.221) “A kind of productivity that did not cost the capital was a scientific force.” (*Ibid.*, p.168)

In fixed capital, the social productivity of labor was manifested as the inherent property of capital; it included both the power of science and the combination of social forces in the production process, and finally included the skill of shifting from direct labor to machine productivity. (*Ibid.*, p.111)

The above discussion was that Marx’s idea “science and technology was productivity.” However, Marx also

indicated that science and technology was still a kind of direct productivity in a certain sense and determines the level of social production. That is:

The development of fixed capital showed that the general social knowledge had already become a direct productive force to a great extent, so that the conditions of the social life process were controlled by the general intelligence and got transformed according to this intelligence. It showed that to a great extent, the social productivity had been produced not only in the form of knowledge but also as a direct organ of social practice and actual life processes. (Ibid., p.102)

Based on a profound understanding of Marx's "science and technology was also productivity," The leaders such as Deng Xiaoping, Hu Jintao, Jiang Zemin, and Xi Jinping have realized the important productivity function of science and technology, followed the national conditions to develop science and technology at the same time, and promoted social progress.

At the same time, culture is not only an ideology, not only belongs to the category of superstructure, but also has the productivity function as a kind of spiritual thing. This means that culture, like science and technology, is an important part of the productive forces structure. From this aspect, science and technology culture, as a special culture accumulated in the practice of science and technology, has naturally become a core element of cultural productivity and become the accelerator and a growth device for cultural productivity. The productivity of science and technology culture is reflected in the soft power of science and technology culture. Soft power is mainly reflected in three aspects: The first is the productivity of science and technology culture which creates economic benefits; the second is "the soft power of science and technology culture which is considered as intellectual support" (Sun, 2009); the third is "the soft power of science and technology culture which is considered as spiritual power" (Ibid.).

The productivity of science and technology culture which creates economic benefits, means that science and technology culture is also a productivity, which can provide economic security for social development and has far-reaching impact on economic and social development. The construction of ecological civilization is to exploit and transform nature actively on the basis of respecting and grasping the laws of nature, and satisfy the material resources needed for human production and development. At the same time, we must respect nature and life, achieve sustainable development and build a Green China, while we obtained real material and economic benefits. Therefore, we need to actively adjust the economic development model that has seriously affected sustainable development in the past, change the industrial structure, establish a new type of ecological economy, circular economy and green economy, and take the road of sustainable development. It requires us to give play to the productivity function of science and technology culture which creates the economic benefits. Under the premise

of protecting the natural ecology, we must develop green technologies and clean technologies, and strictly control the use of technology. At the same time, we must also ensure that the quality of economic development and provide solid material protection for the construction of ecological civilization.

The soft power of science and technology culture which is considered as intellectual support refers to that the construction of ecological civilization is a complex and systematic project. In addition to the strong economic support, it also needs a huge team of talented people. It requires the support of high-quality and high-tech professionals, and requires the application of high-tech ecological technologies. Giving play to the soft power function of the intellectual support in the science and technology culture is necessary to continuously train and provide talents that meet the needs of ecological civilization and provide the high-tech which the construction of ecological civilization needs. Giving play to the soft power function of the intellectual support in the science and technology culture, we need to constantly disseminate and promote ecological technology knowledge, continuously improve the overall quality and various skills of workers, and establish a large-scale, high-quality talent to meet the needs of ecological construction.

The soft power of science and technology culture is considered as a spiritual power. On the one hand, as a spiritual power, science and technology culture has its own relative independence. It can develop through its own practice and innovation, and its content is continuously enriched and expanded, so that it can provide the theoretical guidance for the development and progress of science and technology culture. On the other hand, in the process of ecological civilization construction, the science and technology culture is considered as a spiritual power, which will deepen the concept of ecological civilization in sustainable development, enhance people's awareness of environmental protection and people's self-confidence in the construction of ecological civilization. It plays a very important role in creating a good public opinion environment and cultural atmosphere for promoting the quality of citizens and building a beautiful new China, and it is a spiritual power. Therefore, we must vigorously promote the soft power of science and technology culture which is considered as the spiritual power, provide a powerful force for the construction of ecological civilization, and achieve a benign development of socialist ecological construction.

CONCLUSION

In a word, the serious environmental problems and ecological crises that we now face have a serious impact on the socialist cause of our country and the lives of the people, and they are a huge challenge to the

sustainable development of all humanity. Therefore, only by vigorously building science and technology culture, extensively promoting science and technology culture, and giving full play to the epistemological function, methodological functions and productivity functions of science and technology culture, can we strengthen the foundation of ecological civilization construction better. Only in this way can we deal with the increasingly serious ecological problems of humanity, and achieve harmonious coexistence between humans and nature, people and society, and human relations. Only in this way can we contribute to the development of socialist modernization

with Chinese characteristics, and the construction of Beautiful new China.

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