

Biocosmology : A New Philosophy beyond Traditional Mechanical Cosmology

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**Биокосмология: Новая философия
за рамками традиционной механической космологии**

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Abstract. In the face of the global ecological crisis in the 21st century, we should re-interpret the cosmology of the 17th century in an organic way, realize the contemporary turn of the organic cosmology, and finally form a systematic and scientific philosophical worldview and the methodology of building a new human civilization. Organic cosmology is a philosophy of ecological environment with the supremacy of nature. It is supported by traditional Chinese and Western philosophy. Organic cosmology is global-oriented but originated in China. Chinese traditional philosophy has expanded a new direction for the perfection of organic cosmology with a spirit of rational thinking. Organic cosmology adheres to the research standpoint and dynamic method of holism. Based on the present and looking to the future, organic cosmology aims to realize the harmony and beauty in diversity of cosmic life.

Keywords: Organic cosmology; Dong Zhongshu, Triadicity; Holism

Резюме. Перед лицом глобального экологического кризиса в XXI веке мы должны переосмыслить космологию XVII века в органическом ключе, осознать современный поворот органической космологии и, наконец, сформировать системное и научное философское мировоззрение, и методологию построения новой человеческой цивилизации. Органическая космология – это философия экологической среды с главенством природы. Она опирается на традиционную китайскую и западную философию. Органическая космология ориентирована на мир, но зародилась в Китае. Китайская традиционная философия открыла новое направление для совершенствования органической космологии в духе рационального мышления. Органическая космология придерживается исследовательской точки зрения и динамического метода холизма. Основываясь на настоящем и устремляясь в будущее,

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органическая космология стремится реализовать гармонию и красоту в многообразии космической жизни.

Ключевые слова: Органическая космология; Дун Чжуншу; триадичность; холизм

Contents

1. The philosophical nature of organic cosmology
 2. The basic principles of organic cosmology and its deconstruction of mechanical cosmology
 3. Organic cosmology and Dong Zhongshu's cosmological thought
 4. Philosophical comments on organic cosmology
- Endnotes & References

Содержание

1. Философская природа органической космологии
 2. Основные принципы органической космологии и ее деконструкция механической космологии
 3. Органическая космология и космологическая мысль Дун Чжуншу
 4. Философские комментарии к органической космологии
- Заключительные сноски и литературные ссылки

The universe is the inclusive place of all living beings, stars and galaxies, and also the space-time boundary faced by natural organic matter and inorganic matter. As a kind of academic thought with great research significance, organic cosmology is increasingly attracting the attention of experts and scholars around the world. Based on the new historical and cultural context, organic cosmology takes Aristotle's ideological system as the theoretical foundation and makes a new theoretical interpretation, committed to providing the guiding principle of organic philosophy for the contemporary cultural and scientific activities. *Addressing the scientific community – the Biocosmology Initiative* states: “There is no doubt (in view of the current global crisis): the time has actually come for the scientific community to reconsider the supremacy of the 17th century's cosmological (basic scientific and cultural) foundations; but instead to take as a basis the new foundational principles for the scientific and cultural activities produced by the Anthropocene, man and society in the 21st century.”ⁱ Therefore, realizing the turn to organic cosmology is of great significance for the contemporary study

of the field of philosophy of science and culture, for the formation of a scientific philosophical world outlook, and for the construction of the methodology of the new human civilization.

1. The philosophical nature of organic cosmology

Organic cosmology is a philosophical interpretation with a historical root, and a kind of ecological environmental philosophy that upholds the supremacy of nature. It is not a philosophy that ignores man unilaterally and excludes man arbitrarily, but an ontology that pays attention to the harmonious coexistence of man and nature from the perspective of the cosmological world outlook and the organic methodology. Organic cosmology takes the physical world as its basic research category, including both the whole world and each subject in this organic universe. It harmonizes the relationship between various physical subjects organically based on the principles of unity, naturalness and dynamism of the world. The concept of cosmology has been discussed as early as before B.C. In the *Classic of Changes*, a traditional Chinese work, it is mentioned that “The vast earth is the source of all things, obedient and adhering to the law of heaven. The earth is deep and contains all things and its merits are vast and infinite.” The hexagram “Qian” refers to the heaven and “Kun” refers to the earth. It deduces the source of the world, deduces the beginning of the universe and the generation of everything in the world. The cosmological view in the *Changes* regards “Yin and Yang” as the origin of the world, and insists that everything in the world is born of “Yin and Yang”. The Indian *Upanishads* refers to “the Great Brahma, the one who is all, the supreme joy, the self-born.” The Great Brahma is not only the source of the world, but also the world itself. It is eternal, immortal and imperishable. The existence of the universe and the things in the universe are characterized by infinity, naturalness and non-terminality. The dynamic principle of organic cosmology is also the contemporary exposition of infinity in the *Upanishads*. It can be seen that the historical interpretation of cosmological concepts in traditional Chinese and traditional Indian civilization has provided the root and basic philosophical theoretical support for the discussion of organic cosmology.

In the western philosophy, Aristotle, as an ancient Greek encyclopedic writer, his scientific thought also upheld organic deals and the concept of holism, actively exploring the dynamic development of the whole universe. He established the form-material theory and the basic principles of the Four Causes led by the final, teleological cause. He proposed that the natural world had its own laws, and everything had its own functional properties in the cosmic order. The dynamic, organic and holistic characteristics of Aristotle's cosmology can be expanded as a new expression of cosmology, and the cosmological foundation can be reconstructed at the level of system theory. After all, characteristics

of holism and scientism revealed by Aristotle's philosophical thought have constructed the basic concepts and frames of thought in the category of organic cosmology.

Whitehead, a British philosopher in the 20th century, reconstructed the cosmology of organic philosophy in his *Process and Reality*. "The purpose of these lectures," he said, "is to formulate a rigorous cosmological idea, to reveal the meaning of these cosmological ideas by exploring various empirical topics, and finally to establish a suitable cosmology according to which all particular topics can acquire their internal relations." Whitehead is committed to know the world in a new way of process theory and to providing a new philosophical way of observing the world. He conducted a comprehensive overall study of the natural world, the fragmented fragments of the whole material world, explored the world from the perspective of processes and relations, and interpreted the real world as a dynamic organic whole.

At the same time, the origin of organic cosmology is closely related to the philosophical and cultural research of Russian scholars. Danilevsky believes that the non-uniformity of the world culture makes each civilization the embodiment of its own culture-history. In his dynamic analysis of social culture as conducted in his *Social and Cultural Dynamics*, Sorokin concludes that social culture always fluctuates repeatedly between perceptual culture and conceptual culture, which shows a kind of organic naturalism and can be expanded as a cosmological expression of organic theory and holism. Vernadsky puts forward the question on how to incorporate new cosmology in scientific activities, re-examines the expression of the 17th-century cosmology in the 21st century, and tries to explore a kind of philosophical attitude to modern scientific knowledge transformation. He willingly acknowledges the naturalistic exploration of philosophy of science and the triadicity of its system structure, so as to effectively realize the contemporary value and practical significance of this triadicity.

2. The basic principles of organic cosmology and its deconstruction of mechanical cosmology

Organic cosmology is broad and profound. As a principled generation, its basic connotation is not only a powerful deconstruction of mechanical cosmology, but also a systematic integration of the cosmological world outlook and organic methodology.

The basic position of organic cosmology is to recognize that "The real world is unified (one whole) natural Dynamic Living Biocosmos." It includes physical, plants, animals and social culture. All subjects are connected and dynamic. They grow and change in accordance with certain universal laws

(basic principles). The seven basic principles include the dynamic (Hylemorphist and Entelechist) coherent oneness of a subject, bipolarity, triadicity, circular cyclicism, quaternary, pentavalence, and the ontogenetic finitude. Bipolarity refers to “unchanging existence of two opposing centers (poles) of the integral life organization in a subject;” and triadicity means that “the poles are united into an integral life organization through an essential and unchanging (homeostatic) center, the only one capable of interacting synchronously with both poles”ⁱⁱ

Everything in the world follows these seven principles. Scientific knowledge also has bipolarity: Scientific knowledge always includes two poles of (rival) scientific positions. The contemporary scientific dominance of absolute dualism based on the transcendental view of the world advocates the opposition of man and the world. This ignores the teleological organic pole, thus excluding the organic (dynamic, internal) pole from scientific research. The result of this is that knowledge is only acquired through objective empirical research in the dualist field, and the internal dynamics of the subject naturally leaves scientific activities, so that the advantages of the organic theory and the integration theory of knowledge cannot be brought into play. The *a priori* position of organic theory admits that all subjects belong to real world and carry on dynamic activities continuously, and abandons the transcendental dichotomy of subject and object. This determines that the philosophy of science of organic theory takes into account three types of scientific knowledge in order to obtain integrated knowledge. The essence of the *Biocosmology Initiative* reveals that “scientists around the world can (and should) generate and maintain an equal awareness of both poles of rational (scientific) knowledge: as of the currently dominating Transcendentalist (Dualist – Static, mathematical-physicalist) ...; as of the forgotten Organicist.”ⁱⁱⁱ That is to say, scientific knowledge should turn to the pole of organic knowledge, eliminate the binary opposition thinking mode in modern Western philosophy, and examine the dynamics of the whole world with a new and holistic thinking mode and worldview.

Therefore, the organic cosmology is a new philosophy that differs from the traditional mechanical cosmology. It insists on explaining the integrity of the universe and the internal, generative, processive dynamics of nature, and holds that the natural world moves and changes endlessly according to the principle of material unity. “In his *Concept of Nature*, Whitehead further criticizes the classical cosmological notion of a ‘dichotomy’ or ‘bifurcation’ of nature, arguing that there is only one unified nature. In other words, we only have one organic universe. By elaborating on his theory of perception, he illustrates the unity of the physical world in which we live.”^{iv} Based on this, the *Biocomology Initiative* calls for the return of knowledge of the philosophy of science to the “true triadicity” in the way of dialectical materialism, deconstructs the isolated, one-sided and static

mechanical cosmology, and realizes the turn to an organic cosmology of movement, connection and development.

3. Organic cosmology and Dong Zhongshu's cosmological thought

Organic cosmology is both global-oriented and Chinese-originated. From the Spring and Autumn Period and the Warring States Period to the Qin and Han Dynasties, the traditional Chinese cosmology was produced. Many thinkers in the pre-Qin period provided necessary ideological resources for Dong Zhongshu's cosmological thought which absorbed the essence of pre-Qin Confucianism, Taoism's Five Elements theory and the essence of Monism, including such concepts as "Tao", "qi" and "yuan", presenting a colorful picture of the universe. "The qi of heaven and that of earth are integrated into one, divided into Yin and Yang, which are classified as four times and listed as Five Elements"^v. Dong's cosmology explores the origin and formation basis of the universe, adheres to the principle of integrity, and flashes the same light of wisdom as Leibniz's principle of world unity. "The principle of world unity is the realization of unity through reasonable distribution of all cultural parties. By virtue of the principle of unity, the principle of preordained harmony is necessary in his thought, and therefore forms the basis of the other principles of unity."^{vi}

Dong regarded "Yuan" as the end of the universe and the foundation of the world. Yuan is often regarded as referring to the beginning in Chinese. The first is the beginning of the epoch of time and the basis of the generation of all things. Yuan is based on the meaning of the original occurrence of the universe. The first and the yuan share the same name, which is the pursuit of the root and foundation of all things. In the exploration of the structure of the universe and the origin of the world, Dong summarized the "ten ends" of Heaven: "The sky is one end, the earth is one end, Yin is one end, Yang is one end, fire is one end, gold is one end, wood is one end, water is one end, earth is one end, and man is one end. The number of the ends is ten, which is the number of Heaven."^{vii} As the symbol of the whole in Chinese ideology, Heaven also constitutes the basic element of the whole existence in cosmology. The support and coupling of Heaven with the Five Elements create an organic ontology of Heaven, and even directly supports the existence of the original universe. "There is a boundary for life, a domain for the earth. Boundaries and domains exist in the natural world and are presented in the form of time and space. And in a more macroscopic, broader boundary, there is a dynamic, infinite place containing all things, which the Chinese call the universe."^{viii}

Heaven is associated with Yin and Yang, and Chinese cosmology is inseparable from Yin and Yang. "The great way of Heaven lies in Yin and Yang." Yin and Yang are the inner essence of all things, the

two key elements of world changes. Dong's cosmology started from the two kinds of Qi of Yin and Yang. The change of Yin and Yang with the alterations of four seasons featured his cosmic diagram. Pre-Qin cosmology also changed the stagnant past. While absorbing the theory of Yin and Yang, the theory of Five Elements also became the basic element of Dong's cosmology. Dong constructed an ontology from the material perspective by combining the Five Elements with the four times and directions.

The Five Elements follow each other in their order. Each of the offices of the Five Elements fulfills its role. Therefore, wood is in the east and in charge of spring qi, fire in the south and in charge of summer qi, gold in the west and in charge of autumn qi, water in the north and in charge of winter qi. Therefore, wood gives rise to birth and gold death, fire gives rise to heat and water cold. For people to follow order, and officials to fulfill their roles, this conforms to the way of Heaven. (*The Meaning of the Five Elements from Spring and Autumn Dews*)

It can be seen that the coexistence of the Five Elements creates a kind of dynamic, complex world context and map with its dynamic characteristics, which provides the logic path of traditional Chinese philosophy for the organic cosmology in the world context at the ontological material level.

Dong Zhongshu's cosmology is based on the cosmological thoughts of various schools in the pre-Qin period. It is coherent and full of vitality with its characteristics of systematism, balance and dynamics. It constitutes an important discussion on the cosmological view in the traditional Chinese Confucian philosophy. This cosmology from Chinese history and Chinese circumstances summarized the tradition of pre-Qin cosmology, and has continued to inspire later generations. For thousands of years, it has been all embracing. It provides the root of traditional Chinese philosophy and its speculative stance for the current study of organic cosmology, and expands the field of cosmological research by taking the Yin-Yang theory and the Five Elements theory as philosophical conceptual paradigms. As the Oriental perspective of cosmology, it effectively promotes the transmission and continuous development of organic cosmology from generation to generation by making cosmological philosophy learn to speak Chinese. It can be seen that the ancient Chinese cosmological thought represented by Dong Zhongshu in the Han Dynasty played an important role in the establishment of the cosmological view in China and the world and the shaping of the way of thinking.

4. Philosophical comments on organic cosmology

Organic cosmology is a constructivist thought of wisdom looking to the future of the universe. Its organic concept and organic philosophy are the basis of cosmology. Organicity refers to organicity of nature, of ecology, and of the universe. In terms of research scope, organic cosmology is based on the natural world, seeks the unified existence of ecological system with human initiative, investigates the universe with a holistic and dynamic mode of thinking. “The holistic view is an attempt to replace and cover everything with an all-encompassing whole or something more universal, providing a unified basis and guarantee for all members.”^{ix} The holistic view of organic cosmology is based on the basic premise of recognizing the diversity of things and seeking common ground from the perspective of synthesizing individual differences. Its dynamic nature means to examine the multiple returns of nature, ecology and universe in a way of movement and Organicity is based on natural life, implying a universe consisting of heaven and earth which nurture all things to return to their organic life. The organic system includes organic life and organic universe. The ecologically harmonious system of organic cosmos has elements conducive to the survival and reproduction of all its members, and all life elements are combined in an organic way to adapt to nature and the universe in an organic way.

Organicity is of endless growth, harmonious circulation and coexistence of diversity. The alternate cycle of life constitutes the basic premise of the existence of the universe, and different living things are in the same universe, that is, “all things exist separately and yet belong to a unity, which is referred to as mutual belonging or co-belonging”^x. The organic nature of life is the unity of diversity and wholeness. It is because of the diversity and alternate cycles of life on earth that human beings, nature and the universe are full of vitality.

It comes from ontology, cosmology strives to repair the relationship between human beings and the universe above Earth with the wisdom of organic philosophy and the naturalism-oriented methodology. In the pursuit of harmonious coexistence between man and nature, it reveals that human's ability to repair nature, the earth and the universe is the unity of finite and infinite. “Finitude is the reflection of man's finite rationality and limited labor ability. Infinity is a symbol of human creativity and intelligence.”^{xi} The unity of bounded rationality and potential power is the embodiment of human's initiative to live harmoniously in nature and repair the universe in nature, and the infinite creativity and technological intelligence revealed therein symbolize the future ideal of human's pursuit of a harmonious universe paradigm.

Organic cosmology dialectically critiques mechanical cosmology as well as unilateral modern scientism, and provides a paradigm of philosophy of science for the future development of human civilization. It is also closely related to the future trend of the global ecological civilization construction, and the transformation from mechanical cosmology to organic cosmology. It is necessary for organic cosmology to serve as the philosophical foundation of the future ecological civilization development. This is the main purpose of the *Biocosmology Initiative*, which is in essence to “promote (with urgency) the Biocosmological approach as a new form of Integralist knowledge.”^{xii}.

The dialogue between organic cosmology and traditional natural philosophy shows the transcendence of mechanical cosmology and forms a scientific and holistic organic cosmology. In terms of theoretical research significance, organic cosmology has a positive guiding significance for us to correctly understand and comprehensively understand the organic universe in reality. From the macro world to the micro world, from nature, society to human thinking, various elements in the universe interact in a complicated way and develop together. From this point of view, human beings should examine the dynamic development of the material world with a holistic organic thinking, abandon the isolated and static metaphysical cosmology, and establish organic and process thinking modes. In terms of actual effects, ecological crisis faced by the world today can to a certain extent be said to have been caused by the long dominance of the mechanical cosmology. Therefore, organic cosmological theory can be used as a reference for solving the current world ecological environment problem, exploring a post-COVID19 way to build ecological civilization against the backdrop of the global climate change and the destruction of ecological environment. The solution to the crisis of the black industrial civilization can also draw lessons from organic universe as a way of holistic thinking, which entails the exploration of the ecological features in traditional cultures, respect for the diversity of all kinds of civilization, regions and nationalities. This contributes to the collection and refinement of cosmological ideas and principles in diverse cultures that will help build a community with a shared future for mankind and a community for natural life in the universe.

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