



Vernadsky's Concept of the Noosphere in a Global Management Environment: Searching for Ways to Exit Global Crises

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ABSTRACT

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The paper deals with the ideas of the Russian scientist Vladimir Ivanovich Vernadsky. We investigate how the thesis of scientific thinking as a planetary phenomenon led him to formulate the concept of noosphere proposed by him in the form of a transformed biosphere. The present ecological situation encourages the creation of new models of civilisation. One of the most popular is the notion of the noosphere, which is well inscribed in the evolutionary vision of contemporary culture. Moreover, it indicates a way out of an ecologic crisis which hits humankind. Vernadsky's idea of the noosphere – the sphere of reason became the basis of the concept of the noosphere, which can provide qualitatively new ways of solving problems associated with global threats, such as environmental, resource, energy, and demographic, by orienting the vector of geopolitics to protect the interests of humanity as a whole. A holistic noospheric worldview, based on ideas not only about the rights but also about the duties of man and the unity of humankind, is necessary to create a real strategy for solving the global problems of our time.

KEYWORDS:

Biosphere, Noosphere, Global crises, Global management, Scientific thinking.

I. INTRODUCTION

In numerous scientific publications of the last decades [1], [2], [3], [4], [5], the noospheric concept is discussed, which emphasises the unique role of man as the bearer of reason in further formation and development the Earth's biosphere. According to this conception, the historical function of man consists of the gradual transformation of the sphere of life (biosphere) into the sphere of reason (noosphere).

Humanity faces a massive task of finding a way out of the impending crises, the solution of which scientists from various scientific schools and countries, as well as experts in global management [6], [7], offer their visions. One of these visions is the concept of the noosphere – the sphere of reason, a geological envelope that arose at a particular stage of the development of the sphere of life (biosphere).

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The initiator of the creation of the concept of the noosphere, as well as the theory of the biosphere, is the great Russian scientist Vladimir Ivanovich Vernadsky (1863–1945). The main content of his life was the creation of a holistic theory of the biosphere and the evolution of the biosphere into the noosphere, in which human reason and scientific thinking become the determining factors of development.

II. THEORETICAL BACKGROUND

The term noosphere was firstly introduced in 1927 by the French philosopher Edouard Le Roy, who referred to the similarity of his view with that of Pierre Teilhard de Chardin. Vernadsky began to use this word a bit later. The idea of Le Roy stated that the noosphere was the phase of the Earth's evolution when the Homo sapiens came to the scene (hominisation). Teilhard de Chardin's views differed from Le Roy's, and he believed that the arising of the intellect was not a natural process but had a religious source.

Today, two concepts of the noosphere are the subject of discourse [8], [9]: Vernadsky's noosphere as a new state of the biosphere and the natural evolutionary emergence of a new planetary sphere, respectively Teilhard de Chardin's noosphere as the result of evolution along the elementary

trajectory particle, i.e. molecule – cell – organism – social group – planetary consciousness – Omega point [10]. Both considered life on Earth a kind of superorganism whose development culminated in the formation of reflexive consciousness. Both were convinced that science had to play an essential role in the construction and development of the noosphere. However, the differences between their concepts began already in their views of the biosphere. While Vernadsky saw, for instance, an impermeable division between living in non-living matter, for Teilhard, such a clearly defined difference did not exist. Teilhard saw the noosphere as a specific, additional thinking layer generated by the processes of consciousness: a new sheath beside the biosphere, which since its formation in the Tertiary has spread over the world of plants and animals, outside and beyond the biosphere [10].

Vernadsky's noosphere concept seems to differ fundamentally from the Teilhardian view. His point of departure was the statement that man is about to become a powerful geological force by transforming the entire face of the planet and nature [11]. He cultivates new plants and animals, takes millions of tons of raw materials from the Earth and introduces them into the life cycle. Vernadsky considers man as a part of the biosphere, in which he has a specific function, namely the creation and development of the noosphere as the culmination of the entire development of the Earth; at the same time, the noosphere is the living space of man. In the texts of Vernadsky, there is no strict definition of the noosphere, but the essence of this notion is straightforward. In the notes for his book of life [12]. Vernadsky christened the biosphere, transformed by the intellectual activity of man, by the name noosphere, that is, the sphere of intellect.

Vernadsky's philosophical level defines the biosphere as a specific biological form of mass motion in which billions of tons of matter are transformed. At a particular stage in the biosphere's evolution, humans inevitably emerge, equipped with reason. Living and inert matter form the biosphere system, and humanity and the natural environment include the system of the noosphere.

According to Vernadsky's first biogeochemical principle, living matter strives for maximum attack on inert matter. It can be conveyed as a principle of life aggression or living matter towards the biosphere. The second biogeochemical principle determines the direction of evolution: evolution proceeds towards the origin of a species with the most significant biogenic migration ability, i.e. towards the most aggressive species. Humans are such a species, equipped with the human brain and work. It follows that there is an organisation created by living matter in the system of nature. At the same time, there is an effort to destroy any organisation in the same living substance that forms that organisation. The contradiction eliminates the origin of man as the bearer of reason. The idea of the noosphere assumes

the unification of humanity by the power of scientific thought, a construct directed against the laws of life aggression, in which the role of reason is fully manifested [13].

Such are the roots of noospheric mode of thinking, which creates today the numerous civilisation models in which the human intellect is a necessary element. The main feature of the noospheric way of thinking is the belief that consciousness can change natural processes to a positive, constructive direction to guide these processes. Man's intellect is capable of good organisation of nature on the planetary scale.

III. FINDINGS AND DISCUSSION

In the most recent models of civilisation, man is taken in a naturalistic way due to natural selection and is considered the perfect animal. His essence should not embrace something specific and distinct from the natural regulations. His anatomy and morphology predetermine all his functions rigidly. The man can act only as his structure determines him to perform. The spiritual sphere is cut away. The highest value settings (the true, the good, the beauty, the justice) are reduced to purely natural processes. All typically human — selfhood, freedom, creativity, highest spiritual potentials — are viewed through the prism of action of biological laws. But at the same time, it appears that just this spiritual sphere is the guarantor of the stability of the whole biosphere on a planetary scale and the condition of its existence. Without the world of man's highest spiritual values, nature's survival is impossible. Just in man's spirituality, finding the roads to salvation from ecologic destruction is possible.

The spirit ensures the stability of the existence of matter. The building of the strategic survival model is accompanied by a silent proposition of the presence of man's highest values. The man is intended to be capable of uniting, changing his attitude to nature, being just and good etc., since he possesses an enormous spiritual potentiality. The idea of noosphere genesis grows from the view of man as Demiurg and not as a perfect animal. It is founded not on the biologicistic belief of his nature but on his spiritual characteristics. In other words, for creating the noosphere-like model, driving the world out of ecologic destruction, it is necessary to abandon the biologicistic image of man and put another one, not ensuing from the naturalistic doctrine of being.

Vernadsky seems to see the primary trend in the noosphere development in optimising human living conditions. Through planned, systematic activity, man would master nature, achieve a just distribution of wealth, and finally develop united humanity [14]. However, there are indications that this interpretation possibly does not render Vernadsky's full intentions and that his concept of the noosphere may have been nearer to Teilhard's ideas than it

may appear at first glance. It is often assumed that only Teilhard has seen in the noosphere a kind of field that develops through the mental activity of humanity. In contrast, Vernadsky's noosphere only referred to the material realm. However, it has become apparent that Vernadsky's genuine personality and views do not wholly conform to the picture many Soviet interpreters have given him. Despite the tampering by censorship, it has been apparent for a long time that his work defies the appropriation by vulgar materialist interpretation that has consistently been attempted [15]. His characterisation as a materialist and rationalist has to be revised [14]

We think that in the contemporary strategic survival models, it is impossible to grasp man as having exclusively biological properties. Today, man's naturalistic comprehending slips in the ecologic crisis, and it requests revision and addition. All ecologic problems are focused on the question concerning the moral imperatives of humankind. The current situation shows that the ecologic issue cannot be resolved without a philosophical set of man's problems [16].

IV. CONCLUSION

Vernadsky understood the noosphere as a kind of step in the development of nature and society, when man, armed with scientific knowledge and as the only species to have achieved supremacy above all others, takes upon himself all responsibility for the Earth's biosphere, reforming and reshaping it following the laws of nature he has discovered. That is, according to Vernadsky, the spontaneity of development gives way to consciously planned changes to the environment, and in place of a chaotic assortment of various conflicting nations and people, a single, rationally organised humanity would enter the stage, armed to the teeth with knowledge, technology and acquired historical experience [17].

Of course, the decades since the founder of the biosphere school of thought passed away have sharply changed the face of the world around us, but Vernadsky correctly guessed some barely noticeable tendencies. For example, the process of globalisation occurring before our eyes, connecting every corner of the Earth by television, internet, mobile and satellite link into a single information space, sounds like Vernadsky's prediction of "instant transfer of thought, its simultaneous discussion on the whole Planet" [18].

We pay our respects to his ingenious far-sightedness, with which Vernadsky, in the age of general political disorder and confrontation of the 1930s, was able to conclude that humanity's further spontaneous development was impossible and of the responsibility laid upon it for the fate of the biosphere. Vernadsky's concept of the noosphere is an excellent estimate of a scientist who was ahead of his time and foresaw the ethical problems resulting from the

emergence of an ecological imbalance in man's relationship with nature. His concept of the noosphere coincides with the need for a new morality, new rationality and finally, the emergence of a new humanism. The philosophical content of the noosphere concept should be understood as a certain standard, determining the necessary conditions for the sustainable development of humankind. We could imagine the achievement of such a noospheric state as a form of natural and social harmony, in which the human mind understands the limits of human action imposed on it by the environment and chooses the path of development that is the safest for the future.

In correlation with the reality of the 21st century, the noosphere concept helps to identify the way to solve global challenges - social, economic, ecological, technological or climatic [19]. The idea of the noosphere is a holistic idea that forces us to think about these global challenges simultaneously, as closely interconnected. The concept of the noosphere thus hides a considerable potential for a meaningful solution to these challenges [13].

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