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Abstract

The planetary reality is studied from the viewpoint of the artificial and the natural and their main constructs. The existing Earth's spheres can be subdivided into natural spheres and artificial spheres. Biosphere is an object of natural reality, and technosphere and sociosphere are objects of artificial reality. The interaction between these realities is investigated on the basis of the concept of noobiogeocenosis introduced by the author in earlier publications. Noobiogeosphere is a composite human-dimension complex consisting of biosphere, technosphere, sociosphere and other sociocultural planetary spheres, and it can be studied only on the basis of a transdisciplinary approach. Noobiogeosphere has three levels of organization: the micro-level represented by a noobiogeospheric personality, the meso-level constituted by noobiogeocenosis, and the macro-level, which is noobiogeosphere itself. The main part in the interaction between the artificial and the natural is performed by noobiogeocenosis, and an important factor for the formation of noobiogeocenosis is the presence of a noobiogeospheric personality, or a society of such personalities. Therefore, noobiogeosphere is a space where we see converge of the results of researches on disciplinary knowledge and on existential problems of the lifeworld.

Keywords: natural, artificial, noobiogeosphere, noobiogeocenosis, noobiogeospheric personality, biosphere, reality, landscape, transdisciplinarity, values, ethics, ecological crisis, responsibility.

iafor The International Academic Forum www.iafor.org 1. The artificial and the natural are ontological characteristics of objects of reality; they distinguish the objects of reality according to their mode of genesis, existence and extinction. The definition of the artificial and the natural was first introduced by Aristotle: "Of things that exist, some exist by nature, some from other causes." (as cited in Pavlenko, 2001, p.158). We will study the natural and the artificial with regard to planetary reality. There are over twenty earth spheres, such as biosphere, hydrosphere, atmosphere, magnetosphere, technosphere, sociosphere etc., all of them can be divided into two groups – natural earth spheres and artificial earth spheres. Biosphere is an object of the natural reality. Technosphere and sociosphere are objects of the artificial reality. We will study the interaction between these realities on the basis of the concept of noobiogeosphere introduced by the author earlier (Danilova, 2004). According to this concept noobiogeosphere is the ontological basis of the combination of all the planetary phenomena, related to nature, man and society.

Modern research is focused, primarily, on complex, unique, historically evolving systems in which the evolution of man is supplemented by generation of artificial intelligence, development of informational, medico-biological, ecological objects and processes, distinguishing of axiological factors among the explanatory theses. The typical features of such systems are interaction with the environment (openness) and selforganization. Reality includes the material, the ideal and the relations between them. On this basis a new net work reality is formed. Conceptions evolve from objective and empirical reality to theoretical reality, i.e. to the world of constructs, theories and models. Stable interaction of artificial systems with the environment and natural systems becomes increasingly significant.

The concept of universalism was developed by many philosophers of Antiquity, Middle Ages and Modern Age. At the beginning of the XX century one of the main lines in generation of the universal synthesis was based on the idea of noosphere of V.I. Vernadsky (Vernadsky, 1989) and P. Teilhard de Chardin (Teilhard de Chardin, 1987). In the works of these philosophers it was stated that biosphere in the course of its evolution should enter the next stage of its development, and this stage was called noosphere, i.e. the sphere of mind. An active role in this transformation is to be played by man. The theory of noosphere, however, seems in incomplete condition and is still regarded as a hypothesis. In his works Vernadsky suggested ideas of co-evolution of nature and society, of the responsibility of man for the further changes in biosphere, and it is consonant with the modern concepts of "ecological ethics" and "ethics of responsibility" which have a significant value today. In the concept of noobiogeosphere introduced by the author, the idea of noosphere is further developed and becomes a noospheric representation of modern universalism.

2.Noobiogeosphere is a composite human-dimensional complex of biosphere, civilization, and socio-cultural planetary spheres. It has three levels of organization. The core of its micro-level is a noobiogeospheric personality, the meso-level is represented by noobiogeocenosis, and noobiogeosphere itself is characterized as its macrolevel. It is a model of a new reality which can be studied only on the basis of transdisciplinary approach. Investigation of noobiogeosphere makes it possible to study a variety of processes on the earth surface, including the interaction of the artificial and the natural on a planetary scale. The structure of noobiogeosphere implies the emergence of noosphere group of sciences which continue and develop biosphere sciences. Noobiogeosphere as a planetary entity is formed by means of generation of the fundamental cells: noobiogeocenosisis and noobiogeospheric personalities. Noobiogeocenosis is the main unit of noobiogeosphere. It is formed as a result of harmonious interaction of biogeocenosis and antropocenosis. The term "biogeocenosis" was introduced at the beginning of the XX century by Russian scientist V.N. Sukatchev (Sukatchev, 1945). It means areas of land with determine structure of natural and artificial components through which no natural boundary passes. It is very similar to the term "ecosystem", but an ecosystem can exist both on land and in water, while biogeocenosis can only be found on land. Within noobiogeocenosis there occur temporal, spatial and spatio-temporal coherences. They can include all types of natural and artificial formations. The artificial formations which correspond to the rhythms of nature fit naturally into the existing systems. Noobiogeocenosis contains a complete set of elements and processes corresponding to biogeocenosis: producers, consuments, autotrophs, heterotrophs. Here we can find ascending and descending chains of matter, energy and information.

Thanks to the wasteless cycle of matter and energy can maintain as table balance of biogeocenosis and preserve trophic chains between its components. But the balance of such a system can be upset by man whose interference adds the artificial to the natural. In the approach that we develop the activity of noobiogeocenosis ensures the harmonic interaction between the artificial and the natural. We can imagine a small town where people use renew able energy and recover completely all their wastes. Such a town interacts harmoniously with the environment and does not endanger the stability of biogeocenosis. An essential factor for the existence of noobiogeocenosis is the formation of a noobiogeospheric personality. A noobiogeospheric personality is a monad complimentary to the entire world; it corresponds to the micro-level of our model.

The antropogenic impact of modern man on the environment is usually disbalanced and irreversible. Initially, man lived on traditional landscapes for a long time. Then technogenic and innovational landscapes came into our life, and these landscapes create a lot of new problems for man and have very poor interrelations with traditional landscapes. In this respect cultural landscapes, i.e. areas of land adapted for life and work by many generations of man, become increasingly important. There are several approaches to define a cultural landscape. According to one of them, the concept includes the results of man's activity in the form of material culture (Kovalev, 1995). Examples of material culture are buildings, fences, bridges, cemeteries, fields, lighthouse, roads, churches, channels etc., i.e. everything that people use to enrich the primeval natural landscape. This concept correlates with the idea of "ethnos" of L.N. Gumilev (Gumilev, 1993), which means not only a type of community but the habitat of this community as well. Thus the concepts of cultural landscape includes not only altered nature and artificial structures, but also people themselves as bearers of a specific culture. Organization of a cultural landscape is a complicated integrated task and necessitates studying of a complex of philosophical, culturological, political and sociological problems. Moreover these studies should be conducted in interdisciplinary and transdisciplinary fields of modern science. In culturology and related sciences, in the past centuries, certain images of classical cultural landscapes were formed, such as: a series of palaces and gardens, a manor house, a Japanese garden etc.

The conception of noobiogeocenosis gives scientific ground and attractive presentation of the project of the town of the future. This small future town with a population of 60-80 thousand people is a key element of cultural landscape. The conception of noobiogeoenosis is a generalization of the idea of biogeocenosis (ecosystem) and includes all types of human activity (Danilova, 2003). Due to the fact that noobiogeocenosis does not contain inner boundaries which could impede stable flows of matter, energy and information, the activity of man inside the noobiogeocenosis complements the biogeocenosis structures and does not disrupt them, as it usually happens in reality. Cultural landscapes connected with noobiogeocenosis constitute an optimal combination of elements of natural, technogenic and informational worlds. These cultural landscapes of the future are open systems where crucial significance is assumed by the processes of self-organization. A noobiogeospheric cultural landscape implies the consumption of various substances, the use of solar batteries and ecofriendly materials. These processes are combined with the complete recovery of matter, energy, information, which ensures the safety of all the technologies inside the landscape. Planetary spheres contain both the natural and the artificial.

3.The philosophy of transdisciplinarity implies the unity of object and subject structures. According to the methodology of transdisciplinarity a noobiogeospheric personality can be identified as a subject structure of a new reality. Owing this personality, value guidelines enter the reality. The formation of this personality is conditioned by eliminating negative features and qualities and by affirming humanistic qualities, because man is capable of profound moral reform. One of the most important stages of the development of this personality is the formation of ecological and planetary mentality. As a result, a noobiogeospheric personality brings together the results of disciplinary research and investigations of existential problems of life world in single space.

The influence of noobiogeocenosis on the formation of transdisciplinary entities, e.g. cultural landscapes, is very poorly investigated. The objective of preserving stable cultural landscapes implies solving several fundamental problems: 1) Creating balanced complementary interaction between the natural and the artificial. 2) Ensuring neutralization of negative anthropogenic influence on the environment. 3) Creating wasteless cycles of matter, energy and information. 4) Developing adequate mechanisms of cognition of the processes which ensure the solution of the above mentioned problems by methods of science and philosophy. The same questions arise when these landscapes are formed.

To organize wasteless cycles of recovery of material substances, it should be taken into account, that for the past decades man has created thousands of substances which do not decompose naturally, and to reprocess them, special measures, often very costly ones, should be taken. And the bigger problem is to recover in formation. According to present estimates, up to 95% of information in modern world is superfluous. Part of this amount can be regarded as auxiliary, helping us obtain the necessary information. The rest of it is harmful and dangerous. But the criteria of discriminating information according to its quality and utility are very vague and require special investigation.

As noobiogeocenosis is formed by way of self-organization in accordance with the basic rhythms of nature, it has the following essential characteristics: stability, optimality, mutual complementarity of all the constituting processes. Noobiogeocenosis is an optimal system with a stable structure which is ensured by the basic system-organizing processes.

The principal condition of information chains in noobiogeocenosis is the absolute completeness of the ascending and the descending lines of information. The ascending lines are formed by way of generating more complicated information on the basis of initial source. It means the ascent from protocolary sentences, axioms, postulates to the information levels organized on their basis. The information cells and structures of each new level co-opt the cells of the previous level. In descending chains superfluous information should be processed not in separate "atom" units, but in entire blocks, which can be defined as "informatiocenosis". It is useless to dispose of information in separate elements, because in this case the information will reappear in a new aspect. It is necessary to dispose of it as a complete block, with all the existing roots, according to the basic principles and stages of information generation in this particular noo-biogeocenosis.

4. The contradictions between the artificial and natural realities lead to ecological crisis. It is important to find a way out of this situation. For this purpose it is necessary to determine which part of every particular region is constituted by intact biogeocenosis. And further, what is the acceptable ultimate economic capacity of the remaining area? The solution of the set asks is connected with the ability to discriminate between natural and artificial processes, with determining universal approaches corresponding both to the natural and to the artificial processes, for example such wellknown and approved methods as synergetic spatial and temporal coherences, autopoesis, and replacement of gray technologies with green ones. That is, the artificial should in some way grow according to the laws of nature. Green technologies offer a variety of obtained products on the basis of a single general idea or pattern. The natural and the artificial interact by way of self-organization in which the artificial adjusts to the natural.

A global ecological crisis is the reflection of a profound crisis of culture. Traditional cultural guidelines, attitudes and values no longer meet the requirements of the present. The search of new guidelines is hampered by the profound global crisis of culture, by the crisis of standards and ideals in science, art, politics, pedagogics and in world view in general. In the context of this approach we suggest forming a new noobiogeospheric culture which is grounded on new worldview universals corresponding to the strategy of the further development of mankind, where there is no contradiction between the artificial and the natural.

The compensation of negative effects of human activity implies the introduction of conscious limitations. Determining acceptable limits for artificial processes in organic and non-organic worlds is the object of study of various sciences, including ecology, medicine, engineering etc. The scientists who presented their reports to the Club of Romein 1960-1990 were engaged in investigation of these limits. Apparently, due to these riots us concern with this issue, mankind has been able to evade grave catastrophes, including planetary ones.Further realization of these goals depends on the noobiogeospheric personality or society of these personalities. Contributing to the development of ecological world view, noobiogeospheric culture extends our knowledge of morality, justice, responsibility. It is in noobiogeospheric space where ecological ethics and ethics of responsibility enjoy most extensive use and development.

The formation of noobiogeocenosis and preservation of ecological landscapes requires the development of educational programmers and standards based on the principle of co-evolution of nature and society in accordance with ecological ethics and ethics of responsibility.

5. On the basis of the concepts of noobiogeosphere and noobiogeocenosis sciences of noobiogeospheric type appear, they present a synthesis of the sciences of biospheric type and the axiomatic of humanitarian sphere which has been evolving in mythological, religious and philosophical systems for centuries. It is a complex of natural and humanitarian sciences and ethical-religious disciplines focused on the research of noobiogeospheric systems. Noobiogeospheric sciences form an ontological level of

universal synthesis for all the processes in animate and inanimate nature, as well as in cognition and thinking. In these sciences disciplinary matrices are transformed into a transdisciplinary ones, in which noobiogeosphere is regarded as a structure that unites all the processes, where scientific values correspond to the social values and where various patterns (physical, chemical, biological, social) are underlain by the common processes of self-organization.

Below we will investigate the influence of the ontological, epistemological, methodological and culturological aspects of noobiogeocenosis on the environment and on the formation of a cultural landscape.

The ontological aspect of noobiogeocenosis is presented by the formation of completely new knowledge about reality: about the environment, landscapes, noospheric towns and villages as models of the future cultural landscape. Within the framework of this knowledge synthetic, complementary, communicative, coherent qualities of reality come to the fore. This knowledge enriches reality and attunes spatial, temporal and spatio-temporal rhythms. Inside the noobiogeocenosis, all its subsystems are aligned with the main natural rhythms and various processes of self-organization take place. The ontology of noobiogeocenosis and the ontology of cultural landscape complement each other. These integral entities mutually help each other to develop.

In the sphere of methodology a conception of open rationality is evolving. This conception implies the coordination of scientific and non-scientific approaches, cognitive and axiological parameters of knowledge, close connection between explanation and comprehension, between western and eastern mentalities, rational and irrational methods of cognition. Philosophical belief acquires a more profound character and becomes as significant as science. There is a necessity to determine, on the basis of the fundamental balance of reason and belief, the philosophical views upon genetic, social and spiritual information. An ontological dualism "unique-universal" for both man and all mankind emerges. On the one hand, every person should develop his/her natural being, supplementing it with the social and the spiritual, making it unique.On the other hand, the biological, the social and the spiritual inside a person, intertwining and interrelating with the same synthetic principles of other people, forms being on a planetary scale. These tendencies are represented by modern paradoxes: intensification of integration processes in economics and finance against the background of the diversity of cultures.

The methodological aspect is represented by unlimited possibilities of noobiogeocenosis in generating and further developing ideas of postneoclassical rationality. This type of rationality is the most flexible as compared to the rationalities in classical and neoclassical philosophy. The methodology of formation of noobiogeoceosis is closely connected with the methodology of modern universalism.

The epistemological aspect refers to pluralistic criteria in the choice of optimal lines of forming cultural landscapes and their interaction with the environment. A cultural landscape, as well as a noobiogeocenosis, can be realized in a variety of forms. Therefore, when designing a cultural landscape it is essential to take into account the initial and the final states of the processes. The emergence of noobiogeocenosis in nature is accompanied by catalytic effects which harmonize their interaction with the environment. Catalysts accelerate the modification of landscapes, and primarily that of cultural landscapes. When projecting towns and villages and their interaction with the environment in the circumpolar zone, it is important to consider patterns typical for noobiogeocenoses. The latter will guide the process by revealing the limits of selforganization and with the help of catalysis. 6. The evolution of concepts of modern universal is based on the following: 1) The idea of reality transforms, the reality includes the material, the ideal and the relations between them. The new synthetic reality becomes net working, multi-sphere and multi-level. Ideas metamorphose from objective and empirical reality to theoretical reality, i.e. to the world of constructs, theories and models. 2) Modern universalism is based on complicated and unique systems. 3) The interaction between artificial systems and the environment gains more significance, it contributes to extending knowledge in the contemporary context, as many ideas, conceptions and theories proved irrelevant and were forgotten because the cultural environment was not prepared to reception of them. There emerge mechanisms of correlation between concept and the environment, their mutual adjustment, their mutual regulation, for example on the principle of hypertext. 4) The basic elements of the created universalism are man as a specific spiritual structure, and noosphere.

To embrace all the variety and complexity of the processes in nature and society and to promote their multi-level synthesis is possible only on the basis on the conception of noobiogeosphere. Universal cultural ideas should be adapted to ethnic and national particularities and should sustainably correlate with the corresponding ideas of separate countries and their constituents. All these approaches must be integrated (i.e. must include all the possible types of interactions) and connected with the inner and the basic outer structures. The first type of the interactions corresponds to the relations between separate elements of the systems which contribute to the formation of cultural landscape; the second type of the interactions corresponds to the relations between culture-landscape formations and civilizational environment. Investigating the experience of organizing cultural-civilizational systems in the XX century and at the beginning of the XXI century we can single our several negative trends which should not go further in the future.

1) Preservation of socio-productive relations of the industrial society. In many countries it is still common to support the policy of "struggle against nature", or offer no proper resistance to the policy of this kind (support of narrow departmental interests and structures, lack of professional ecological expertise, irrational use of natural resources). All the main systems of industrial society in education, medicine, municipal service, economy, finance, national relations come into collision with the appearing structures of information society. 2) In present-day world there is a lot of clandestine evil which has emerged recently and is very well organized (drug trafficking, mafia, corruption, black economy etc.), this evil is characterized by complicated technologies of preservation and development, well-organized structure and rigid discipline. This evil is not concerned about preserving nature. Only strong planetary structures, spiritual and cultural ones and the corresponding scope of knowledge can stand against all this evil. They should defend every person from unification; provide everyone with a certain degree of liberty, which is indispensable for the development of personality and the consequent development of mankind. 3) The present organization of expertize, control and governance proves in many cases outdated (in the sense of their clear stratification, methods of discriminating the subject and object, technologies of examination and governance, classification of basic terms). Governance should become continual-discrete, i.e. on the one hand it should have distinct centers of organization and on the other hand, it should be able to interact with any element of planetary and civilization structures by way of developing civilization-cultural networks which promote the actual democratization of society. 4) The main national and state ideas must correspond to the principles of modern philosophy, globalistics, noospheregenesis, synergetics, theory of systems. They should represent a universal

(planetary) idea which can adapt to ethnical and national particularities, they should be integrated (e. g. to include all the possible types of interactions) and connected with the basic identification processes, they should also ensure integration and ontologization of culture all over the planet and preserve and develop cultural diversity.

7. The main factors of organization of cultural-civilization systems in the XXI century are the support of self-organization processes that come from the integrated ontological basis and the formation of planetary network structures. Below we will enumerate the principal factors of their development.

1) It is important to ensure complete revelation of all the principal channels of interaction between cultural-civilization system and the environment; otherwise it will be dangerous to use self-organizing processes inside them. Modelling the patterns of development of specific cultural-civilization systems will lead to wrong conclusions and to disharmony. Interactions should be segregated and studied separately in compliance with the corresponding integrated natural rhythms. 2) The basis of cultural-civilization systems should be simplified, in spite of the fact that in the XXI century it will acquire a variety of new facets due to the dramatic complication of these systems. It implies the upgrade of all the possible types of examination, the development of various forms of feedback and local government. The creation of noobiogeosphere requires that there be conditions for any new planes to be included in the structure of culturalcivilization systems. 3) "Noobiogeospheric man", "noobiogeospheric mankind", "noobiogeospheric consciousness" are ontological concepts the division of which into the subject and the object is almost impossible. It is impossible to discriminate between the subject and the object in the concept of cultural-civilizational system, and it corresponds to the principal approaches of modern philosophy. 4) Communication relations between cultural-civilizational systems, the governance, the intellectuals in different countries, information cycles, and everything that supports noospheric consciousness, should become to the possible extent open and complete, just as biogeocenosis and biogeotechnical cycles of noobiogeosphere. The developed communicativeness and awareness will serve to reveal the disruptive trends, because these systems tend to secrecy and limitations of information and due to these particularities they cannot interact with the stable cycles of noobiogeosphere. 5) The upgrade of the system of independent examination should be carried out in several stages. First it should be approved in the sphere of state and public construction and the fundamentals of sciences and ethics. Then the examination should confirm that the basic principles of the programmers of development of cultural-civilizational systems can be realized. The actual independence of examiners should be guaranteed by law and should maintain a certain hierarchy (regional, federal, special levels of examination). Only those cultural-civilizational systems that have passed the above mentioned tests can be realized and put to use.

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