

Cognition and Evaluation of Nature in the Context of Ecological and Anthropological Crisis

Filyanina Nelya,

the Head of the Department of Humanities,

National University of Pharmacy, Kharkiv, Ukraine

Abstract: The paper deals with the transformations of human existence in the “man – nature” coordinates that are caused by ecological crises, as well as ways to overcome these transformations. The author analyzes and compares the peculiarities of cognition, perception and evaluation of nature at cellular, molecular levels, model levels, and on the basis of a holistic approach. The reasons are presented in favour of a holistic emotional perception of nature to overcome the ecological and anthropological crisis.

Keywords: ecological crisis, anthropological crisis, value of life, value of nature, principle of the 3 R's, levels of live study, holistic and emotional perception of nature.

Modern being is extremely complex and multidimensional, hence a person faces numerous crises (economic, social, environmental, humanitarian, etc.) and makes extraordinary intellectual and spiritual efforts to overcome them.

M.V. Popovich writes: “Society must be constructed so that an individual could fully reveal his inner wealth. Nevertheless, he may also reveal his inner poverty. Everything depends on what social function a person will bring to life and that it has to disclose.” [4, p.223]. The inner world of man, his virtues and vices are revealed not only through relations among people but also via his attitude to the surrounding world, the natural world. At the same time, the attitude of people to nature, their perception and experiences of nature largely reflect the system of social values and human relations among themselves.

Let us consider it in the coordinates of “man – nature”, focusing on the transformations caused by ecological crises, and try to suggest ways to overcome these transformations.

A prerequisite for overcoming the current ecological crisis is the change in the attitude of man to nature. It requires, on the one hand, a deeper understanding of the laws of nature functioning and the complexity of natural systems of all levels in order to minimize negative effects of human activity on nature, on the other, a substantiation of the value status of nature and determination of its place in the system of cultural values of modern society. The solution of this two-fold problem requires mobilizing not only the potential of natural science, but also socio-humanitarian knowledge. V.A. Ryzhko notes that the contemporary world philosophical thought draws attention to the fact that solving the most important problems of the future society lies in the sphere of use of humanitarian and social knowledge, and in its turn it primarily requires to master it [6, p.13]. The latter manifests itself through the growth of the role of humanities. At the same time, the process of humanization of the natural sciences takes place [1; 5; 9; 10].

In the literature, much has been written about the negative anthropological effects of the destruction of nature, alienation of man from nature and displacement of the natural environment with the artificial one. According to M.M. Kyseliov, it results in cardinal transformations of the human psyche and changes in a person's identity. He writes: "Man no longer feels his deep unity with the live, natural world; he is increasingly seeking self-identity in the inorganic nature, technosphere." [9, p.54] The author also emphasizes the need of a critical evaluation of the situation with the help of philosophical "glasses", i.e. use philosophical reasons to justify the ultimate value of the live to the artificial one. Since man is also a living being and represents the world of life, the depreciation of the live (natural) turns into "the depreciation of the man himself." [9, pp. 55-56]. Thus, the issue of rehabilitation of the value of life, including its value in the system of values is not only a matter which for a long time has worried representatives of natural science, environmental practitioners and activists of environmental and zoo-protection movements, but a key question of philosophical anthropology, an issue of human existence and its meanings.

Thoughts of V.H. Tabachkovsky will help consider a deeper understanding of the value of nature as the basis of human existence. He makes reference to the literary works by A. Platonov and a proposed by him metaphor "substance of existence." Condition and features of this substance serve as an indicator of modern anthropological crisis. First, it is stated that the lack of "substance of existence" "hinders the implementation of the most marvelous projects of the harmonious

arrangement of the human world” [7, p. 252]. V.H. Tabachkovsky considers children (childhood) and human corporeality as the most important components of the “substance of existence”. He states, “human corporeality is labile but extremely fragile and vulnerable”. The natural origin of man is realized in children and corporeality. Therefore, analyzing the artistic comprehension of the disease situation, V.H. Tabachkovsky concludes “excessive reduction of the body borders on its carrier with self-loss.” [7, p. 257]. V.H. Tabachkovsky also points to the “quiet forces of being,” inherent in man (tenderness, compassion, consolation, hope, patience) and “hard forces” that are represented as technical systems and means of influencing nature. Thus, a person addresses the task of preserving and supporting, and even increasing, the “quiet forces of being” and containment of “hard forces” in order to secure their own being and self-identification.

Nature is often called an “external body of man”. Therefore, nature also forms an integral part of the “substance of existence,” and its painful state, compression, loss, or distortion may have the same negative consequences for a person's well-being as corporal illness does. Moreover, diseases of the “external body” of a person have a direct consequence of both physical and mental illness of a person. It is not a coincidence that modern medicine pays considerable attention to the definition of external factors (in particular, environmental factors) in determining the health and pathogenesis of various diseases. These conclusions of medicine and ecology are controversial a conclusion that “the modern world is becoming less favourable for the life of human beings” [7, p. 265].

Full human existence is impossible outside of nature. Therefore, the reproduction of the real value of nature is a necessary condition for overcoming the anthropological crisis. However, if we are talking about the need to evaluate and preserve nature as a condition of human existence, then, to a certain extent, we are at the position of anthropocentrism. At the same time, the causes of environmental crises are often perceived in the worldviews of anthropocentrism. Consequently, there is a need to overcome “vulgar anthropocentrism” and the formation of “neoanthropocentrism” where “every fragment of nature appears as a self-worthy, worthless unit of being, which makes its indispensable contribution to the maintenance of homeostasis of biosphere processes.” [7, p. 330].

Let us consider some approaches to the definition of the value of nature in general and wildlife in particular.

Based on the literary heritage of A. Platonov, V.H. Tabachkovsky also considers that the division into “quiet” and “hard” forces can be realized also within the technical systems [7, p. 262]. We will try to interpret the idea of division within the technical systems in view of the need for awareness of the value and self-value of nature. In our opinion, this division lies in the fact that nowadays the latest advances in science and technology do not only destroy nature, but can also serve to preserve it. In particular, this is manifested in the use of so-called alternative methods of research instead of experimental animals, and one can significantly reduce the use of animals during biomedical research, testing of new medicines or cosmetics, etc.

However, alternative methods still do not allow completely abandon animal experiments. Therefore, the development of the principles of humane use of animals during biomedical experiments is actualized. At first, in the form of a holistic concept, such principles were proposed by William Russel and Rex Burch from the Universities Federation for Animal Welfare (UK) and set out in the book “The Principles of Humane Experimental Technique” (1959). They got the name of Russell-Burch's principle of the 3 R's (Reduction – reduction of number of animals involved in the study; Refinement – improvement / humanization of laboratory procedures; Replacement – replacement of laboratory animals on lower organisms or cell cultures). In order to implement Russell-Burch's principle of the 3R's in practice, when it is impossible to abandon completely the use of animals, the first priority must be to study carefully the literature on the subject of the study and determine if the planned experiments will carry novelty rather than repeat the experiments already described. For the second, it is necessary to determine whether it is possible to use other models (animal cultures, computer and biochemical models) instead of animals. If it is not, the experiment should be planned in such a way as to minimize the number of animals involved in it, and to adhere to the relevant conditions for the maintenance of experimental animals, terms of the experiment and methods of painless euthanasia. Scientific effectiveness, economic efficiency and ethical substantiation of the experiment largely depend on the qualifications of researchers [3, pp. 123-124].

For instance, nowadays for toxicological research as biological models of the second order are widely used systems of different biological organization (invertebrates, hydrobionts, microorganisms, plants, animal and human cultures), as well as physical-chemical test systems. In the future, such alternative technologies

will become increasingly important as being justified from economic and ethical positions [8, p.122]. The methods of computer modeling for the study of thin mechanisms of functioning of biomolecules in the body are also gaining weight [2, p. 122].

In addition to the introduction of alternative methods in the field of medical and biological research, modern society is also concerned with the introduction of alternative research methods in the educational process. In particular, the level of animals use in higher education and range and possibility of using available alternative research methods is analyzed. The advantages and disadvantages of using alternative methods in education are estimated. Considerable attention is paid to the dissemination of information on the use of alternative methods in the educational process, as well as strategies for assessing the educational effectiveness of the alternatives used. For instance, despite the fact that in Europe the number of animals used for educational purposes is relatively small in comparison to the total number of experimental animals, nevertheless this number reaches several hundred thousand annually in the European Union [12].

The use of computer methods and models in biomedical research and education can be interpreted not only as an ideal implementation of Russell-Burch's principle of the 3R's, but also as an increase in the proportion of "quiet forces" within the technology and the growth of "quiet forces of life" in general.

However, the desire to comply with the principle of the 3R's raises the problem of the adequacy and integrity of the perception of the live. Some conflicts of perception of the live through models and understanding of the value and integrity of nature are considered by T.V. Hardashuk [1, pp.67-70]. She pays attention to two levels of live study, which reflect the general cognitive situation at the present stage.

First, this study is based on molecular, physical-chemical, cellular levels and computer models. During these studies, when the live is reduced to the physical-chemical level, the researcher deals not with a living object but with the model, and perceives the live through a system of complex devices, computer programs, etc. These studies are carried out in laboratories where a live part is removed from the "body of nature", or the study object is simulated using artificial means. The attitude of the researcher to the object of his research can be transmitted by the following quotation of A. Schweitzer: "The scientist who studies under the microscope or in

physical and chemical activity a thousand forms of the will to life ... is seduced into vanity at being able to describe exactly any of its fragments" [11, pp. 305-306].

Secondly, this study is at the level of organisms, populations and ecosystems, which are carried out directly in nature and based on the methods of observation, description, and generalization. It preserves the integrity of organisms and diverse environmental connections. The peculiarities of this cognitive approach most fully manifest themselves in zoology, ethology, ecology, biology of nature conservation.

The emotional and valuable perception of the live at each level of research is significantly different.

Analyzing the peculiarities of the research process in ethology, the science of animal behavior, T.V. Hardashuk focuses on such features as the researcher's love to nature in general and special sympathy for certain species of animals. To support this thesis, there given the ideas of the prominent ethologists N. Tinbergen (irrational impulses), G. Schaller and K. Lorenz ("placement" in a group of animals), J. van Lawick-Goodall (the love of truth and condolence to nature, the worldview with animals eyes), D. Fossey (observance of the code of "rights of nature"), etc. on the substantiation of research motivations and methods. At the same time, scientific research must meet the criteria of objectivity and truth. Accordingly, there is a series of contradictions between rational and emotionally irrational, objective and subjective, requirement for the objectivity of the presentation and interpretation of scientific facts, and the subjective perceptions and experiences of what a researcher observes. Such research is carried out against the backdrop of high emotional stress and specific moral and ethical background that particularly manifests itself in relation to animals not only as objects of research, but also as "smaller brothers". T.V. Hardashuk compares the observation of animals in the natural environment with a view of theatrical performance during which a viewer seeks to understand the "language" of movements, sounds and other elements of behavior. This involves both rational and emotional spheres. What stands out is the way of solving this contradiction between emotionally moral, subjective and rational-objective in the action of hypostasis in which natural scientific knowledge appears. First, these are reports, articles, monographs that meet the criteria of scientific knowledge. Second, it is popular scientific literature. In the latter, researchers have an opportunity not only to present the results of their research in the broader natural scientific and cultural contexts but

also to express their attitude to the objects of research, their emotions and experiences [1, pp. 70-72].

Thus, popular scientific literature on nature contributes to the humanization of science. This literature attracts a large circle of readers who expand their notion of a complex world of nature and its vulnerability under the influence of human activity. Through science fiction, researchers send a massive message to society whose core is the guidance on the value of nature, the value of existence.

Let us dwell in more detail on the concept of intrinsic values, or values of existence, or natural values.

The American researcher J. D. Jamieson calls intrinsic values a “golden standard” of morality. Intrinsic value is a real, undeniable, marginal value. Just as the value of other things is evaluated through the value of gold, all other values are determined by using intrinsic values [13, p. 69]. At the same time, he proposes to distinguish at least four meanings of this conception.

First, it is a metaphor through which certain values contradict instrumental values, i.e. those that help to achieve some goals. Second, intrinsic values are what moral community is guided by, and the recognition of these values by an individual determines his belonging to the moral community. In other words, true values determine the objects of primary moral concern. Such a definition of values is complicated by the need to distinguish between true values and mere things and the realization of a timely choice between them. At the same time, caring for mere things is often densely indirectly related to true values. Third, intrinsic, true values are defined as innate, inherent values, since they are inseparable from their bearer and an inalienable characteristic of the things themselves. Typically, these values are determined by the relationship between a person and things, objects. Fourth, intrinsic values are defined as something that does not depend on values at all, i.e. certain things are declared valuable, although in fact they have not been evaluated by anyone [13, pp.69-72]. Such values are also called “values of existence” [14]. From this definition, it follows that a person must appreciate all ecosystems and all living beings. Nevertheless, J. D. Jamieson notes, in reality the definitions of intrinsic, true values are usually mixed with each other. It is also not always possible to draw a clear line between intrinsic and instrumental values and determine their interrelationships. For instance, we can hardly deny the intrinsic value of forest ecosystems but the material or instrumental value of forests for human beings (wood,

wild fowl, mushrooms, berries, flood protection, etc.) is inseparable from their existence, because people can use the “gifts” of forests only if they exist as integral ecosystems.

As a result, the typology of intrinsic or true values is as follows: 1) intrinsic values as marginal values; 2) intrinsic values as morally significant; 3) intrinsic values as inherent values; 4) intrinsic values as an independence from values [13, p.154].

In the end, intrinsic, non-instrumental, non-consumer value of nature should take a prominent place both at the level of formation of socio-economic strategies of the society development, and in everyday life of every person. Unconventional values of nature, or natural services, include support for the productivity of ecosystems, self-purification and conservation of water resources, support for soil fertility, support for a sustainable climate, utilization and processing of human waste and human activities (for example, some bacteria and fungi are able to accumulate heavy metals and pesticides, preventing them from spreading in the environment), opportunities for recreation and ecotourism development, etc. Educational, scientific and aesthetic value of nature should also be noted [14, pp. 40-47].

J. D. Jamieson also observes that, despite certain differences between the third and fourth types of intrinsic values, they are united by the fact that in both cases intrinsic values are regarded as self-sufficient. At the same time, the first and second understandings of intrinsic values are productive in the sense that values are constructed in the process of evaluation. At the same time, the scientist does not agree with those who call for less discussion of values, and more and more actively protect nature, since the fundamental questions about the nature of values do not disappear at anybody's command. Moreover, there is no rigid and direct connection between the appraisal procedure, which is quite complicated in its nature, and such worldview guides as anthropocentrism, biocentrism, ecocentrism, etc. At the same time, the recognition of values largely depends on the individual experience of the interaction of man with the world and the system of values which he / she professes [13, pp.154-155]. Therefore, the task of philosophers is to help understand these values and thus contribute to a sensible activism aimed at protecting nature.

A link that joins a deep understanding of values and environmental protection activities must be comprehensive, continuous environmental education that integrates science and humanities. At the same time, the participants (activists) of the educational process are not only educators; they are scientists, researchers of

nature; they bring to society not only their personal position, but also implement the principles of responsibility of a scientist to society.

Thus, reading becomes an important factor in the formation of a worldview and a value relation of man to nature. Popular scientific literature on nature acts as an effective mediator in communicating man with nature and in human progress towards understanding nature. The role of reading science fiction enters into the wider context of the analysis of the situation of man in the modern world. Thus, V.H. Tabachkovsky draws attention to the observations of J. Brodsky, according to which, the time spent in reading, communication with a book, constrains a person from activity, from various forms of hyperactivity. Such containment is very important in our time when various crises are caused by human activities [7, p. 65].

Thus, modern ecological and anthropological crises are caused by a number of factors. Among them, one should distinguish, in particular, the displacement of the natural environment by the artificial one and the deepening of nature cognition at the molecular and physical-chemical levels of knowledge of the live, which leads to a violation of perception of the integrity of nature and loss of appreciation of life. Therefore, the question of the evaluation of life in its integrity becomes a key issue to solve both the ecological and anthropological crisis, to determine the meanings of human existence.

However, both alternative methods of biomedical research and education developed on the basis of the latest technologies and the need to cultivate ideas about value, self-value and integrity of nature can promote rehabilitation of the value of life and implementation of humanism principles.

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