РАЗДЕЛ III
РАЗУМНАЯ МАТЕРИЯ
INTELLIGENT MATTER

Разумная материя – это материальная субстанция, характеризующаяся процессами формирования, развития и взаимодействия представителей разума в масштабах космоса. Разумная материя, как считается, является третичным состоянием вещества и поля. Предполагается, что характерной особенностью разумной материи является наличие высокоразвитой психики – полевой организации интегрированных в единое целое нейронных комплексов, на основе которых в ходе эволюции образовалось два самодостаточных нейронных ансамбля: сознание и подсознание. В основе организации психики – целостного, саморазвивающегося, самовоспроизводящегося образования, склонного к аналитической и синтезирующей деятельности, – находятся нейроны, межнейронные и внутринейронные связи. В целом работа психики основывается на новом качественном свойстве материи – ее способности к ассоциативной работе с информационной средой. Разумная материя на Земле представлена в форме человечества.

Cosmic Education: Formation of a Planetary and Cosmic Personality

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The major stages of development of cosmic pedagogy have been researched. Based on the achievements of the modern neurosciences as well as of psychology, cosmology,
and philosophy, the authors provide their reasoning for the cosmic education and its outlooks for the educational systems of the world. Through the studies of how important human mind is for the Earth and the cosmos and by researching the evolution of human mind within the structure of the Universe, the authors create a more advanced scientific and philosophic basis for the cosmic education where the subject is a comprehensive process of formation and directed progress of both an individual mind and a conglomerate of minds called the "psychospace". The cosmic education researches the permanent progress of the intelligent matter of the Earth. The purpose of the cosmic education has been determined as formation of a planetary and cosmic personality. According to the authors, a planetary and cosmic personality is a harmony of mind, soul, and body, and such harmony is directed to use the internal creative potential of mind to the benefit of the intelligent matter of the entire Earth and the cosmos. The properties of such a planetary and cosmic personality are being improved continuously; they are a sample (the ideal) of the cosmic pedagogy and the image of a human being of the future. Through the usage of the entire potential and art of upbringing and educating, the cosmic pedagogy is called to embody the major properties of the image of a human being of the future in the new generations of minds and to form a planetary and cosmic personality capable of self-actualization to the benefit of the permanent progress of the intelligent matter.

The key words: cosmic education, cosmic pedagogy, mind, planetary and cosmic personality, image of a human being of the future, intelligent matter, psychospace.
The need to develop the cosmic pedagogy was for the first time substantiated by the famous Russian educationalist named Konstantin Wentzel (1857–1947). In his scientific works titled "The Ideal School of the Future and the Ways to Make It Real", "The Educationalist of the Future", "The Religion of Creative Life", "On the Problem of Cosmic Education", "Messages about Cosmic Education", "Beams of Light on the Way of Creativity", and "The Philosophy of Creative Will" et al., which were written in the early 20th century, Konstantin Wentzel singled out and gave substantiation for the base of the cosmic education; the natural unity of the personality being educated with the life of the entire and infinite cosmos. According to Wentzel, the supreme purpose of pedagogy is to educate a personality who would realize himself or herself as a Citizen of the Universe. "It is first of all required to teach a child to feel like a small part of the nature which the child is able to grasp with his or her mind, and that is to feel like a part of a field or forest, and then gradually broaden such a piece of land where the child perceives himself or herself as one with the nature, up to the size of the Earth as a planet; and later we can start the transition to the Solar System and to the stellar systems making up our Universe, and then to the endless system of the universes spanning our entire and infinite Cosmos" [Wentzel, 1993: p. 162].

The major statements about the cosmic pedagogy formulated by Konstantin Wentzel were further studied, analyzed, and developed by M. V. Boguslavski, B. V. Yemelyanov, N. V. Keberle, G. B. Kornetov, Yu. V. Lopukhova, T. A. Petrunina, G. A. Repina, N. V. Samoilichenko, M. Ye. Steklov, K. Ye. Sumnitelni, T. P. Tolmachiova, I. A. Feodulova, Ye. V. Chmyriova et al. An in-depth and all-round research into the genesis of the ideas formulated by Konstantin Wentzel as the originator of the cosmic pedagogy was carried out by Irina Pushkina in her thesis work, in her monograph, and in her series of scientific articles [Pushkina, 2007]. A contribution to the development of the cosmic pedagogy was also made by the
1. The main prerequisites for the origination of the cosmic pedagogy by Wentzel were the philosophy of the Russian cosmism as well as the intensive development of the national science and technology along with the social and cultural environment of the late 19th and the early 20th century when the said educationalist worked. As the most important figures in the Russian cosmism, such persons as D. L. Andreyev, V. I. Vernadski, K. N. Wentzel, Ye. I. Roerich, N. K. Roerich, V. S. Solovyov, N. F. Fiodorov, K. E. Tsiolkovski, A. L. Chizhevski, P. A. Florenski et al. can be mentioned. The Russian cosmists have formulated a series of globally important issues pertaining to the place and role of a human being in the Cosmos; to the sense and purposes of existence of human beings and how to reach for them; to the interrelation of macro-cosmos and micro-cosmos; and to the responsibility of intelligent beings for the God's creations and for what human beings transform from one thing into another.

2. The Wentzel's cosmic pedagogy is an integrative doctrine based on the ideas of unity, interrelation, integrity, and co-evolution of a human being, of the mankind, and of the Cosmos (which are the main ideas of the Russian cosmist philosophy), and on the ideas of educating a free, independent, and original personality with good morals (which are the centerpiece of the free education theory), and on the ideas of discovering and developing the creative capabilities of a child (which is the main point of the personality development theory), and on the idea of the cosmic education (which is the prominent idea of the cosmic pedagogy).

3. The Wentzel's cosmic pedagogy is based on the principles of anthropogenic cosmism, cultural relevance, freedom, non-violence, and harmony, and can be viewed as a scientific and pedagogical phenomenon. The methodological basis for the Wentzel's cosmic pedagogy is formed by the ideas of the Russian cosmism.

4. The main ideas of the Wentzel's cosmic pedagogy are identical to the main ideas of the global education as a new field of the global educational politics in the 21st century. The cosmic pedagogy ideas formulated by Wentzel in the context of the modernization of the Russian educational sector and its contents are reflected in the discovery of global interdependency, unity, and integrity of the system described as "Human Being – Mankind – Nature – Cosmos"; in the discovery of the development logic of this interre-
lation; in the studies of the universal (cosmic) laws; and in the formation of the responsibility in the coming human generations for the consequences of the changes made to the Earth and to the Cosmos on the basis of an integral view of the surrounding world.

Konstantin Wentzel was of the opinion that the primary objective of the cosmic education is "to raise the Cosmos higher and higher in its development" [Wentzel, 1993: p. 202]. According to B. V. Yemelyanov, such understanding of the tasks of the philosophic grounds of the cosmic pedagogy by Wentzel can be perceived as an "attempt to use the philosophic and aesthetical program by K. E. Tsiolkovski for the purposes of pedagogical practice whereas the said program pertains to the fundamental problems of human existence, which is tightly linked to the cosmos; the problems of the importance of the cosmos as the sphere where cosmic civilizations exist and where the human influence on various matters and substances is active; the problems of the sense and purposes of the human history and human life and of the grounds for human morals; the problems of the transformation of a human being into a "new human being" tagged homo cosmicus who will rule the Universe in the end" [The Ideas of Cosmism in Pedagogy and in Modern Education, 2004: p. 10].

In his article titled "The Cosmic Pathfinders for the Russian Pedagogy", B. V. Yemelyanov singles out three major options for the Russian cosmic pedagogy [The Ideas of Cosmism in Pedagogy, 2004]:

1. The cosmic pedagogy formulated by Konstantin Wentzel as we specified hereinafore;

2. The "Agni-Yoga" ("Live Ethics") series of books allegedly compiled by Elena Roerich (1879–1955). The "Agni-Yoga" books have incorporated many fundamental details about human beings strongly popular in the oriental philosophy. One of the foundational principles of the "Agni-Yoga" is the continuous and infinite evolution of human spiritual qualities in unity and harmony with the Cosmos, with the society, and with the human being him/herself. "...The Agni-Yoga pedagogy is a cosmic pedagogy that maintains that the Cosmos and a human being are relative values. The cosmic mind improves and develops just like a human mind does, and a cosmic heart is correspondent to a human heart. Just like the supreme intelligence resides in a human heart, the cosmic intelligence also resides in the Cosmic Heart, which incorporates all achievements of the previous conditions of the Cosmos" [The Ideas of Cosmism in Pedagogy, 2004: p. 14];

3. The third option of the pedagogical theory oriented to the cosmos is the "Rose of the World" ("Роза Мира") by Daniel Andreyev (1906–1959). According to that book, the Earth and the mankind take part in the cosmic processes of the struggle between the Good and the Evil forces. In the spe-
cial section of the said book titled "Education of a Human Being of the En-nobled Nature", Daniel Andreyev introduces three postulates of the communistic education: the subordination of one's personal considerations to the common/societal purposes, the spirit of internationalism, and striving for the future. However, these postulates, as formulated by Daniel Andreyev, are "free from the Marxist ideology with its unilateralism and atheism. The new construction of those postulates in the all-human and in the cosmic contexts now leads to the education of a human being of the ennobled nature" [The Ideas of Cosmism in Pedagogy, 2004: p. 16].

However, over the recent decades, we could witness significant changes in the scientific and philosophical grounds used for setup and facilitation of the cosmic education. Let us now view the cosmic education thru the prism of the present-day cosmological pattern called the "Evolutionary Substance". In the publications titled "The Universe: Live and Intelligent Matter" [Bazaluk, 2005], "The Philosophy of Education in the Light of the New Cosmological Concept" [Bazaluk, 2005], "The Insane: Fundamental Principle of Life and Death" [Bazaluk, 2011], and "Cosmic Travels – Travelling Mind" [Bazaluk, 2012], we have analyzed the researches in the field of neurosciences as well as of psychology, cosmology, and philosophy, and have discovered a number of important regularities, which are of interest to the present-day scientific and philosophic understanding of the cosmic education.

Firstly, we have discovered a regular nature of formation and development of human mind (the neuron ensemble of conscious and subconscious minds) somehow predetermined by the laws of setup of the material world applicable to the entire Earth. The planetary evolution clearly shows the directed development of molecular compositions as follows:

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\text{micromolecules} \rightarrow \text{biopolymers} \rightarrow \text{proteoids} \rightarrow \text{protocells} \rightarrow \text{prokaryotes} \rightarrow \text{eukaryotes} \rightarrow \text{adhesive cells} \rightarrow \text{neurons} \rightarrow \text{neuron network} \rightarrow \text{pre-consciousness} \rightarrow \text{neuron ensemble of subconscious mind} \rightarrow \text{neuron ensemble of conscious mind} \rightarrow \text{comprehensive work of mind}
\]

Secondly, the combination of minds with various degrees of internal perfection creates the psychospace within the Earth and that psychospace reveals itself in the activities of the mankind. The activeness of the evolutionary psychospace in combination with the material forms of human activities, where the psychospace is partially materialized, creates the noosphere of the Earth, according to the Vernadski terminology.

Thirdly, thru the analysis of the extent of the activities of the said psychospace of the Earth as well as a series of some other definitive proper-
ties as we mentioned in the publications [Bazaluk, 2005; Bazaluk, 2010; Bazaluk, 2011; Bazaluk, 2012; Bazaluk, Vladlenova, 2013], we have singled out the human society into a third state of matter, which is the intelligent matter. Based on the cosmological pattern developed by Vernadski in his work titled "The Evolutionary Substance" where, based on the large-scale geological research of the Earth and of the circumterrestrial space, the author singled out three states of matter: rigid, bio-rigid, and live substances, – we have suggested a new modern cosmological pattern called the "Evolutionary Matter" [Bazaluk, 2005; Bazaluk, 2010; Bazaluk, 2012; and Bazaluk, Vladlenova, 2013]. In this pattern, the live matter (which is the live substance according to Vernadski) is transformed into the state of the bio-intelligent matter and later becomes live matter, which is represented thru the human society throughout the Earth.

Fourth, from the "Evolutionary Matter" theoretical pattern we are developing, we can conclude that the intelligent matter is represented not only throughout the Earth as its development within the Universe has taken over 6 billion years, and this means that the mankind (as the intelligent matter of the Earth) with its five million years of history stands at the youngest stage of evolution.

Fifth, the events of the recent decades show clearly that the intelligent matter of the Earth is now being transformed from a planetary force into a cosmic force.

Based on the statements hereinabove, we can now formulate the decisive qualities of the cosmic education. The subject of the cosmic education (the last word here, according to Vladimir Dahl, literally translates from Russian as "formation of an image") stems from the Russian verbs meaning "to educate" and "to raise", which is "to reflect, to give a view or a image; to process or to compile in order to form an integral and complex thing". In this context, according to Vladimir Dahl, the verb "to form an image" means "to process and trim a thing in order to make it look ready-made and intact, integral" [Dahl, 1989: II, p. 613]. It all means a complex process of formation and directed development of an individual mind as well as of a group of different minds, which is called the psychospace. The object of the cosmic education is the permanent improvement of the intelligent matter of the Earth. In our publication titled "The Universe: Live and Intelligent Matter", we have shown that all of the three states of matter currently known to the scientists, and namely rigid, live, and intelligent, have their own determinative and fundamental space [Bazaluk, 2005]. In our following publications, using some research material of better quality, we have continuously developed this statement [Bazaluk, 2010; Bazaluk, 2011; Bazaluk, 2012; Bazaluk, Vladlenova, 2013]. The space of cosmic vac-
uum is the determinative space for the rigid matter; for the live matter, this role is played by the molecular-genetic space; and for the intelligent matter, this function is performed by the mind space formed thru harmonic, inter-dependent, and mutually supportive activity of neuron ensembles of subconscious and conscious mind. In the monograph titled "Cosmic Travels – Travelling Mind", using some well-known research material, we have tried to depict the major stages of the evolution of mind as the determinative space for the intelligent matter of the Earth [Bazaluk, 2012].

So, as we consider the subject of the cosmic education, we do not speak of a human being who can represent the partially live matter (such as cells and cellular formations) or the partially bio-intelligent matter (a multicellular organism controlled by a central nervous system) or the partially intelligent matter (a combined activity of the neuron ensembles of subconsciousness and consciousness that enables the functioning of a highly developed mind). We concentrate our attention purely on the research of mind and its particular features as well as on the psychospace and its material and virtual or purely virtual features. It should be noticed that the importance of physical body and its functional features will essentially decrease during a long-term space travel whereas the features of formation and development of mind and its interaction with the outer material environment will become dominant and of the highest priority. Accordingly, the subject of the cosmic education is the intelligent matter as a comprehensive combination of minds of a material object, no matter whether it is a planet or a spacecraft.

The objective of the cosmic education is to form a planetary and cosmic personality. In our series of lectures titled "The Philosophy of Education in the Light of the New Cosmological Concept", we have formulated and examined the major qualities of a planetary and cosmic personality [Bazaluk, 2010: p. 33–38]. Let us now repeat only the main thing about it; a planetary and cosmic personality is a harmony of mind, soul, and body, which is directed to actualize the internal creative potential of his or her mind to facilitate the evolution of intelligent matter in the context of the Earth and of the cosmos. The main differences between a present-day personality and a planetary and cosmic personality are specified below as follows:

1. The knowledge of one’s own past, and this is not just about the historical past related to the societal development or the geological past related to the evolution of the Earth, but about the cosmic past pertaining to the stages of formation and development of the structure of the Universe and the billion-fold development of the systems of rigid, live, and intelligent matters, and probably some other states of matter the mankind is not yet
familiar with. Only such a large-scale and all-round *cosmological* approach to the civilization's past can discover the true sense of human existence and answer such difficult philosophic questions as "the place of a human being in the material world", "the predetermination of the mankind", "the sense of human life", etc.

2. The scope of thinking. A planetary and cosmic personality is capable of thinking tactically and strategically to the extent of planetary and cosmic scope and is also capable of organizing an interaction of the processes within a local material object and within the cosmos, too. The scope of thinking is not only a size of information, but also its quality. It is an analysis of the past and the present and also a forecast for the future; it is a constant extrapolation from particulars to an integral thing and a retrospect from an integral thing to particulars; it is the understanding of the importance of the components of an integral thing and, at the same time, the recognition of the self-sufficiency of an integral thing and of the evident fact that the functioning of separate components is not always equal to the functioning of an entire thing/system.

3. The quality of the information utilized. A planetary and cosmic personality will become free from the 'noises', which are low-quality information and the information affecting our sub-consciousness. Priority will be given to the scientific and philosophic reasoning that broadens one's vision of life, facilitates one's professional development, and discovers the abilities of the cosmos and the activities of the intelligent matter in the cosmic scale.

4. The sequence of activities. There is a fundamental principle of the Russian dolls in the cosmology, and this principle provides a physical and mathematical substantiation meaning that each event, process or occurrence within a planet or the cosmos is, on the one hand, based on a previous event and, on the other hand, contains the beginning of a following event. And this is the exact content of the sequence: the knowledge of the past enables us to make forecasts for the future. It is important for every human generation to preserve this sequence as it provides the most comprehensive understanding of the planetary and cosmic evolution and also enables us to organize our presence within a material object and within the cosmos in a more efficient way.

5. The purposeful nature of activity. In order to make any activity consistent and predictable, it is necessary to discover and implant into children their predetermination from the very first stages of the process, which is to understand what kind of activities they will dedicated their lives to and what results they can expect in the relevant field. A purposeful activity is, first of all, a dominance of a global purpose as the purpose of one's entire
life. Only a clear understanding of the global purpose will make it possible to correctly outline, set, and achieve a specified number of individual goals. The consecutive achievement of one’s individual objectives will enable us to achieve the global objective and the fully-fledged self-actualization of one's mind within the ontogenesis. The global objective of an activity is a pathfinder and a constant stimulator for the creative self-control of the mind while the individual goals are a mobile structure of how the life goes on by as directed by such a pathfinder being shaped depending on the particulars of the routine daily existence.

6. The prevalence of conscious activity. A retrospective analysis of the development of human mind shows that its evolution proceeds from the prevalent activity of sub-consciousness neuron ensemble towards the prevalence of the consciousness and from the prevalent subconscious activity (which is of sensory and emotional nature) towards conscious activity [Bazaluk, 2010].

7. The form of the products of labor/creative self-actualization. A planetary and cosmic personality will go from the actualization of creative potentials in material forms towards the actualization of the mental activity in material and virtual forms and, consequently, in purely virtual forms. The mind of a planetary and cosmic personality will go from its mediated manifestation thru artificial tools (such as human body, technical environment, etc.) towards direct manifestation thru the information technology, virtual world, etc.

8. The spaces of self-actualization (areas of activity). A planetary and cosmic personality will significantly broaden the spaces (limits) of self-actualization of mind, will reach out of the Earth and will start its self-actualization within the circumterrestrial space, on the planets of the Solar system, in space travels inside of our galaxy and during intergalactic space travels. Areas of activity, technology, values, and the reaches of human perception of the world will be changed.

Based on the aforesaid goals, let us now formulate the objectives of cosmic education:

– to promote the self-identification of a planetary and cosmic personality, which means that every evolutionary mind should realize and understand his or her destination and its importance for the civilization’s progress;

– to stimulate and direct the actualization of creative potentials of each mind to the benefit of high-quality development of the systems of intelligent matter within a separate material object (of natural or artificial origin) and within the cosmos;
– to create and continuously improve the ideal image of the future human being who would have the characteristics to ensure the quality and the efficiency of development of the system of intelligent matter within a material object and within the cosmos;
– to prepare (to raise, train, and educate) the new generations of minds in the direction towards an ideal human being of the future and to continuously improve both this ideal image and those new generations of minds;
– to organize and continuously promote the competition among evolutionary minds (inside of the psychospace). A competition is the driving force of progress in every state of matter. The cosmic education must ensure equal opportunities for creative self-actualization of minds whereby the abler ones, whose activity is most efficient and useful for the civilization, must be by all means singled out and duly encouraged. The entire structure of the Universe is a competition and the opportunity to exist and prosper only for the strongest and most adaptable (and, accordingly, the most perfect) formations;
– to develop and implement a system for encouraging the best and most able minds. In doing that, we must step aside from the material incentives as they are gradually losing their previous importance, and instead use some material and virtual or purely virtual means of remuneration/encouragement. The best award for a mind should be its prestige and influence and also the recognition of the importance of its creative work for the psychospace;
– to ensure equal opportunities for each and every mind in order to actualize its internal creative potentials and their continuous progress in the circumstances of tough competition. The rules of existence must be equally binding for everyone and no exceptions must be there. Only the ablest and most efficient minds should win the contest of self-actualization;
– to ensure the transition from self-actualization of mind thru material forms (material products of labor) towards material and virtual and purely virtual forms;
– to consistently enrich our knowledge about the planetary and cosmic evolution, about the structure of the Universe, and about the place of the intelligent matter and of the other states of matter within the cosmos in order to ensure the most efficient and full self-expression of mind in its day-to-day existence;
– to facilitate the high-quality transition of the intelligent matter of the Earth from its planetary state towards the state of a cosmic force;
– to ensure resettlement and procreation of the intelligent matter of the Earth within the Solar system with the view to mastering the galactic and intergalactic space; and
– to create the conditions for the formation of an improved mind, which is a traveling mind, the one born and formed in the circumstances of an artificial material object wandering in the far reaches of space.

Now let us examine the cosmic education methods required to complete the objectives specified above. The cosmic education methods are a process of interaction of an influential and well-developed mind with the one that is just being formed and developing its one 'self'. Such a process results in the discovery of the inherited inclination of the younger mind towards a particular creative self-actualization, and we also discover the relevant capabilities for more efficient and comprehensive implementation of its internal creative potentials to facilitate the progress of the intelligent matter throughout the Earth and the cosmos.

According to the current tradition in the pedagogy, the cosmic education methods shall be subdivided into three groups as follows:

– The methods to organize and carry out the research and training activity: 1. Verbal, visual, and practical methods (according to the sources of the educational material); 2. Reproductive methods, which are explanatory and illustrative, research, studies, problem-based and others (according to the nature of the research and training steps); 3. Inductive and deductive methods (according to the logic of narration and of perception of the educational material);
– The methods to supervise the efficiency of the research and training activity: verbal and written checks (testing) and self-tests to see how efficiently the students learn the knowledge required for highly professional operations; and
– The methods to stimulate the research and training activity: specific means of encouragement (remuneration) in the course of formation of the motivation; the feel of responsibility, obligation, and belonging; and the interest towards gathering knowledge, skills, and abilities.

It should be remembered that the cosmic education is predominantly an individual work of mind in an artificially created educational environment and that such work of mind is carried out under specific conditions aboard a spacecraft or a space station. The cosmic education means the methods of forced implanting of the required basic information (at the early stages of the ontogenesis of a mind) as well as the methods for the independent work of mind spanning an informational environment in order to enrich the knowledge of the information available (i.e. the knowledge about
the external material world) and, accordingly, to increase the chances of making some better and more efficient decisions.

Summing up, we can now conclude that the cosmic education not only improves the understanding of the cosmos for a mind being formed, but it also intends to form a planetary and cosmic personality who would, thru its predominantly conscious activity, transform the psychospace of the Earth and its structure from a planetary force towards a cosmic force. Such directed and meaningful activity would enable the intelligent matter of the Earth to eventually become an active part of the intelligent matter of the galaxy and to perform the large-scale cosmic activity such intelligent matter is principally intended for.

References


Education as a Planetary Phenomenon, 2011 – Obrazovaniye kak planetarnoye yavlennyie [Education as a Planetary Phenomenon]: A Monograph /
Л.А. Алексеева, Р.А. Додонов, Д.Е. Мурза, Ф.В. Лазарев, В.М. Таланов и др. – Донецк, 2011. – 270 с.  