

Where Do We Go?

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“Every day of man’s life represents a little piece of evolution of our species, which is still in full swing” Erwin Schroedinger — Mind and Matter

Abstract

The process of Mankind’s development is discussed from the global, universal, and historical viewpoint. The author formulates several theorems: the theorem of Development, the theorem of Physical Evolution, and the theorem of Evolution of Consciousness. The main conclusion is that we witness the informational evolution of Mankind, the Evolution of the Spirit, not the physical body. This process continues within, at least, some few millenniums and gradually prepares Mankind’s consciousness to develop as a Consciousness of the Planet and a whole Universe.

Introduction

When we speak about future forecasts, all Mankind is divided into two big groups: Pessimists and Optimists, no matter whether the topic is fishing at Sunday noon or perspectives of global survival. This division is independent from the current information. This is a quality of brain organization, most likely domination of one or another hemisphere. It is well known that the left brain is an optimist, and the right one a pessimist. These questions are discussed in more detail in our latest book.

By nature, I surely belong to the Optimists and believe in the progressive spiral of development. These views are supported by a whole life experience, the practice of mountaineering, a belief in life after death, and analysis of the history of development of human civilization known to us.

During thousands of years, Pessimistic Prophets regularly predicted the End of the World. This took place on the eve of every new millennium, and sometimes even a new century; the present epoch was not an exception. And so the prophets disappeared, but Mankind is still living. In the beginning of the previous century the Pessimists’ serious prediction that in 40 years, because of rapid development of transport, London would be covered with horse-dung — did not come true. Malthus proved by figures that in the middle of the twentieth century, Mankind was threatened with total starvation — again a bad shot. We can gather a whole volume of such examples, so there are grounds for optimism. Let us live some more time. Question: How? Will we turn into a society of computer game players, controlled by the electronic brain, or will we destroy all ecology by genetic experiments and ozone holes?

Scenarios of Mankind Development

There are many scenarios of development. And they should undoubtedly be calculated. First, not to waste money for the projects of Star Wars and biological cloning. Modern synergetics allows building probability models of development and making certain forecasts on this basis. Development of powerful computers will significantly contribute to such investigations.

At the same time, let us look at the processes of Mankind’s development from the global, universal historical viewpoint. We can review the period of about 5,000 years known to us, although there are all grounds to suppose that highly developed civilizations also existed before this period. American researcher Graham Hancock presents a lot of interesting ideas on this topic in his books.

So, if we consider the course of historical development as the process covering different nations and continents, developing in waves within centuries and millenniums, we will witness a clear forward spiral tendency. Several aspects of this process can be distinguished: material and

technical, mental and ethical, social, ecological, and spiritual. Progress in the material sphere is obvious and needs no comments: we moved from the caves to the sky scrapers and slowly take up the cosmic space. In the mental and ethical sphere, the progress clearly manifests in the attitude to the value of an individual life regardless of social status of its owner. And this progress goes very quickly in various places of the globe, although in a different way. Some 200 years ago, slavery was a common thing in Russia, the United States, Africa, and Asia. Today, we are fighting against racial, sexual, and age discrimination, actively putting into practice a moratorium on the death penalty, and developing methods for rehabilitation of mental deficient. There is direct evidence of progress. In the sphere of ecology, Mankind changed from the conquest of nature and mass destruction of all life to the protection of nature and concern for dumb animals. In the social sphere, more and more countries gradually transform from one social formation to the other, becoming more complex and providing the highest level of mental and ethical development.

And, finally, a distinct tendency to the development of global perception of the idea of the Universal Spirit can be traced in the spiritual field. The lowest level is the worship of the powers of nature: thunder storm, rain, wind, and sun. The next level is the personification of spirits associated with these phenomena, giving them human features while keeping their super-human status. Then there is the creation of an assembly of gods and imparting all human weaknesses and habits to them, with detailed description of their life stories, situations, and adventures. In other words, projection of the everyday life to the divine life. And, finally, emergence of monotheistic religions, in various parts of the globe, in different cultural and historic situations, but in a relatively small historical time period. And these religions spread around the Earth, millions of people speaking different languages and belonging to different nations became involved in this process, and it was the next stage of spiritual development of Mankind.

Naturally, these processes occur unequally. They often return to the previous stage or stop for many centuries. However in historical perspective the development is obvious. An impression is created that Mankind develops as a single organism, gradually growing up and transforming from one phase to the other. Here we follow the line of ideas developed by Le Roy and Vernadski. Naturally, when we say “organism” we mean first of all collective consciousness, as a function of complex structure, consisting of a quantity of elements. This organism went through the period of naive childhood, pugnacious youth, and only now nears the maturity; still very far to wisdom. Development of the organism of Mankind is an inevitable process, although often flowing quite unevenly. However, all the deviations from the total progressive line are temporary and after a number of over-oscillations the system comes back to the given mechanical trajectory again. This thought can be formulated as a theorem:

Theorem of Development

Progress of Mankind moves along an ascending spiral, as a self organizing process of development of a single organism. All deviations from this process are temporary over-oscillations, which gradually come back to the main line of development.

To all appearances, these processes involve global powers, strange and incomprehensible to us, bringing historically significant events. History gives many examples of this: England, progressive from a historical view, was dreadfully threatened by the Spanish invasion, and it seemed no forces could stop the “Great Armada.” Then suddenly a very strong storm started, and all the ships of the Armada were lost at sea. Another example: While Napoleon was introducing new progressive ideas in Europe, he was invincible. But when he started aggressive war, blinded with his might, he was thrown down and defeated. All the twentieth century was the period of massive historical experiments in the sphere of Human Spirit. The Empire of Stalin and Hitler represented global experiments in a forced creation of a New Man. Experiments took the lives of millions of common people and ended with total collapse.

Now we evidence the next phase of the global historical process: creation of a single economical and political European institution. This is a great step forward on the way to the creation of the World Government. However, this is an issue of the quite-distant future.

The level of development in the modern world is very non-uniform; very often we do not even understand this. Most people in Europe, Russia, or the United States suppose that there is a civilized world, where we live, and there are separate wild tribes somewhere in the wilderness of Amazon. As a matter of fact, this is far from true. “West is West, East is East, and they can never converge,” wrote Rudyard Kipling more than a century ago, and this idea remains true even today, despite tremendous progress in a lot of countries. I happened to travel a lot around the world, initially among mountaineer expeditions; now more and more often because of lectures and work shops. I have visited far-away places of Middle Asia, particularly the borders of Afghanistan, India, Nepal, and, what is more, apart from tourist tracks. Each time I wondered how different the style of life of the local people is from our Western standards.

Two days by truck from a large city and you find yourself in the medieval world, living the same slow life and following the same rules as thousands of years before. People graze cattle, wandering with the herds in the desert mountain gorges. They marry, give birth to children, grow old and die according to the ancient tribal traditions. And it is not important that they have a refrigerator or a TV in their house, that in one or two days they can find themselves in a big city with all the attributes of informational civilization — this is another world for them, alien and needless. Not separate villages, but whole countries and nations, most of the population of the globe lives this life.

Therefore, when we come to them with our traditions, our culture, this evokes counteraction and antagonism. A paradoxical situation occurs: Western civilization distributes its equipment around the world — from machine guns and rockets to computers and CD-players. This equipment is demanded and consumed in the whole world, regardless of the nationality and culture. But, together with the equipment, certain clichés of Western, first of all American style of life, are spread out. But do they reflect the highest achievements of Western civilization? Can McDonalds or Hollywood thrillers pertain to the cultural progress of Mankind? This is a certain substitute, cheap chewing gum, but these are the products, which are spread most quickly. And these very products give birth to the highest antagonism, contradicting local customs, rules, habits, and evoking irritation with the “satisfied” American reality.

And this is, to my mind, one of the reasons for the present geopolitical situation. The West invests money, technology, and weapons in the Third World; all this is consumed by the ruling clique and, under conditions of feudal society, and in no way influences the life of a majority of the population. Moreover, it is profitable for the ruling clique to keep this majority in ignorance and darkness. The deeper the feudal Middle Ages, the less information from the outer world — the easier to keep people under control. Taliban supremacy in Afghanistan was the

clearest example of this; forbidding TV, radio, the Internet, stripping women of all rights — the country falls under total control, and then turning the anger of the people against Americans, unleashing a “holy war.”

What is the way out? Does it really exist or we will wallow in the meaningless war against the East and the West? The answer to this question follows from the concept of development of the Mankind Organism as a single whole. In the present historical moment, strong non-uniformity of development of countries and even continents is evidently observed. In addition, the difference consists not in the quantity of material values per head, but in the quantity of information. Mankind develops at the expense of information consumption. Hence, if we wish to reach a balance in the world, a stable balance of negative and positive powers, we should distribute information in all ways. What kind of information? Positive and humanistic. What does this mean?

Entropy and Information in Biological Systems

One of the universal instruments for description of system functioning of biological subjects and, particularly, the human organism, is the application of a synergetic-probability approach, coupled with the use of the generalized notion of entropy. This notion is widely applied in thermodynamics to identify the measure of energy necessary for dispersion of a non-uniform thermodynamic system and in statistical physics as a measure of probability of the system's being in the given condition. In 1948, Shannon introduced entropy into information theory as a measure of uncertainty of an experiment's outcome. The notion of entropy is one of the fundamental properties of any system having probabilistic behavior, providing new levels of understanding in the theory of information coding, linguistics, image processing, statistics, and biology.

In spite of the enormous complexity of biological systems in general and the human in particular, the notion of entropy turns out to be very useful in descriptions of certain aspects of such objects.

As a first example we consider the following psychological experiment: Suppose we have N lamps; lamp number j flashes with probability p_j . The human should point out as quickly as possible which lamp has flashed. What is the mean time of human reaction if the experiment is repeated many times?

The answer turns out to be rather unexpected: the average reaction time is proportional to the entropy of our experiment, and not to the number of lamps N , as one would naively think.

Moreover, we can repeat the experiment under another condition: We can ask the human to point to the flashed lamp as soon as possible, very quickly, so that sometimes he can even make mistakes. Then we get two probabilistic experiments: experiment α , whose outcomes are flashes of lamps, and experiment β , whose outcomes are human reactions. It turns out that the average time of human reaction in this case is proportional to information $I(\alpha, \beta)$.

The conclusion we can make from these experiments is that the speed of signal propagation in human nerves is proportional to a mathematically well-defined amount of information contained in the signal.

Another indication of the relevance of the entropy notion in biological systems is a well known fact that in any population of biological species most of their physical characteristics (like say weight, or length) have gaussian distribution density. As we know, the gaussian distribution maximizes the entropy if the dispersion is fixed. Therefore, we conclude that the principle of maximal entropy (and also the constancy of dispersion) has direct application to the evolution of biological populations.

Entropy is connected directly with the notion of information, which mathematically characterizes the interrelation of several events and becomes more important when the functioning of biological subjects is investigated. The necessity of taking into account the processes of exchange of both energy and information is acknowledged, while describing the functioning of the biological organism as an open dissipative system. The influence of outer information upon the organism might be estimated through the modification of entropy conditions.

In accordance with the Nobel Prize Laureate Ilya Prigogine's conceptions, in the process of growth and development of the organism, a decrease occurs in speed of entropy production, pertaining to a subject mass unit. Reaching standard state, a summary modification of entropy may be considered equal to zero, which corresponds to a mutual compensation of all processes related to the inflow, removal, and transformation of substance, energy and information. Prigogine formulated the basic property of stationary states of open systems: having fixed outer parameters, the speed of entropy production stipulated by irreversible processes' flowing, is permanent in time and minimal by magnitude $dS/dt > \min$. Thus, according to the theorem of Prigogine, a stationary state is characterized by minimal dispersion of entropy, which, for the

alive systems, can be formulated as follows: maintenance of homeokinesis requires minimum energy consumption, i.e., the organism tries to operate in the most economical energy mode. Deviation from a stationary condition — disease — is concerned with additional energy consumption, compensation for inborn or acquired biological defects, and entropy growth.

Of course, it seems very tempting to generalize the notion of entropy and information to the level of biological subjects, or, say, mankind as a whole, looking at evolution of our civilization, or even the whole universe as a huge random experiment. Such attempts were made by many authors. Nowadays many authors speak about an “information field” as a fundamental phenomenon, about the information significance of biological life, etc. Not denying the importance of such approaches (we will study it in more detail in the next section), we should admit that at the present moment there is no possibility to give fully satisfactory theoretical substantiation to these notions.

Mankind information is formed of two components: individual and collective. On the individual level is access to education, mastering new knowledge and new technologies. If young people have the opportunity to study, develop, comprehend new horizons of life, they will contribute to the development of the whole society, its broadest masses. But will the herdsman be able to make a computer engineer? Naturally, each one will not be able to, and will not wish to. But there will always be girls and boys applying all their forces to meet twenty-first century requirements; they will pull the whole society along. A vivid example is India, supplying the whole world with the best computer programmers and rapidly developing itself.

Collective information suggests the propagation of humanistic ideals, notions of the value of each individual life, the spiritual equality of all people. These ideas are common for all races, nationalities, and religions, and their propagation is the only guarantee of the development of the Mankind Organism.

So, if we wish to live in peace and rest, we should spread not weapons or Coca-Cola, but computers and humanistic books. Free information exchange coupled with a careful attitude to national features and traditions is the only way of development for Mankind. Therefore, the Internet and the satellite system of its support can be called the greatest achievements of the twentieth century.

Information is the blood flowing in the veins of the Mankind Organism and providing its existence. Congestion in its parts causes diseases, and these diseases influence the whole Organism. The more actively the informational blood flows in the veins, the healthier and stronger every cell and every organ. And only now we understand that the Informational Society is not just a metaphor, but the only condition of further development.

Understanding of the evolution of Mankind as an evolution of an individual specific organism enables us to foresee many tendencies in its development. Considering that we only now enter the period of maturity, having passed childhood and youth, it becomes clear that Mankind still has a long way to develop. All our mistakes and sins are an inevitable stage in the process of maturity. A ‘speeding-up’ of the evolution is a natural process of changing inner time of the system in the course of development.

Childhood time goes slower: from one birthday to the other a whole life passes by. With aging inner time increases — days, weeks, and months fly faster and faster until the old age when a person cannot follow their sequence. This is not just a feeling, but the change of speed of inner processes, the modification of the exchange of entropy with the outer world. The speed of exchange falls, the role of inner processes of information processing and forming of information of new quality increases, and inner time speeds up.

This process takes place in the human society. We lose direct dependence on the environment, start to produce more and more of our own information, and the speed of our inner processes increases, i.e., inner time of the system decreases. Mankind produces more and more of its own

unique information, and not just consuming external resources. This represents the beginning of a new phase of development of human society as a single organism.

Thus, we cannot be afraid of the pessimistic forecasts. We are just in the initial phase of development, in the first pages of the Book of the History of Mankind. As any organism, our human organism undergoes crises and diseases, but this is a temporary and transient phenomenon. Mankind is a self-organizing system, and after all deviations it comes back to its optimal way of development. In other words, the Mankind Organism is a stable system, interacting with the biosphere and flows of cosmic information. So, we are not threatened with global catastrophes, although we will still be able to think out a lot of local problems for ourselves.

Modern mathematical concepts, based on the synergetic ideas of a theory of non-linear dissipative systems, enable us to build beautiful models of the notions given above. The concept of entropy, as a measure of structural system organization, plays the leading role in these models. The meaning of entropy widens far beyond the scope of thermodynamic approach in the theory of information and synergetics. The GDV technique presents a mathematical approach to the calculation of entropy of individual systems on the basis of glow images — CDV grams.”^o This approach opens absolutely new perspective in the investigation of behavior of organism and its connection with the collective informational field.

As any other organism, the global human organism consists of separate cells; each of these cells is represented by an individual person. The organism can exist only in the case when the larger part of its cells is healthy and functions normally. In addition, the more of these cells, the more complex (is) the system. And the more active the information transfers between these cells, the more labile and live the system.

Therefore, the first and main aim of life of any person, any individual, is life itself. For it is the individual life only that provides saving of the organism of Mankind as a whole. And the life of the street cleaner is no less important than the life of a member of the government - they just have different specializations in the system of the organism. Thus, after this discussion, from the global perspective we have approached the thesis of the value and self-sufficiency of any human life. It is obvious that such discussion can be applied to biological life in general.

So, what about our individual development? Is any progression found here, and how do we differ from our historical ancestors?

Theorems of Evolution

Individual development goes on, as well, but not according to the Darwinian variant and not in the physical body. Physically we in no way differ from our ancestors who lived some tens of thousands or, perhaps, millions of years ago. A Cro-Magnon man, dressed in a suit, would not differ from the crowd of passers-by on the streets of Manhattan. Therefore, we can offer two theorems:

Theorem of Physical Evolution

Evolution of physical body of the modern man reached stationary level, i.e., stopped.

Theorem of Evolution of Consciousness

Evolution of modern man takes place on the level of individual and collective consciousness and is expressed in the formation of more and more complex informational structures, passed on from generation to generation at the expense of techno-cultural field and education.

There are no doubts that modern children master sciences much quicker than their contemporaries 100-200 years ago. For the most part, six-year-old children already read well; however, they prefer their mothers to read, whereas in the medieval Europe reading was a great art and even the majority of aristocracy was illiterate. From earliest childhood, our children

receive a flow of information, their consciousness processes it, masters it, and understands it, and somehow includes in the inner map of the universe. The model of an outer world created in the brain of a modern child is surrounded by a mass of complicative elements, which impart complex character to it. A child organically perceives the TV, radio, books, and the model of the world goes far beyond the family cell.

When early European travelers came upon an African tribe, lost far in the jungles, they would talk about their countries in great detail; after the night spent with them the sachem of the tribe told his tribesmen: "The country of these people is far away, behind the big baobab at the third bend of the river." For him, the space of the Universe is limited by the hunting expanses of the known jungles. For our modern child, the idea of other countries and continents organically fits into the picture of the outer world.

Powerful informational flow does not pass by tracklessly. It forms a physical structure of neural nets in the brain, which is the basis of consciousness. The more complex this structure is, the higher the level of intellectual development. Formation of neural nets takes place in childhood and youth, grown-up children can use only already created structures.

Thus, we come across the phenomenon of intellectual, ethical, and spiritual progress of a human being as a species, born as a result of transfer of all the information accumulated by Mankind from one generation to the other. We can call this process "Imaginary Lamarckism" after Erwin Schrodinger. The gained skills are not imparted genetically, and our babies are as helpless as thousands of years ago. But under the influence of the informational medium of modern civilization, the complex structure of the brain is formed, providing the function of consciousness.

The present hypothesis does not need to be substantiated with a supposition of some special fields, transferring information. Such concepts are of interest to us, for example, the concept of morphogenetic fields of Sheldrake, and, what is more, we consider them to be a real factor of morphogenesis. This idea is further developed in our work.' However, these notions are not the most important for the concept of evolution of the Mankind consciousness discussed by us. As seen from the above, it is enough to speak about the informational medium, created by the customary means of human civilization.

Naturally, formation of a complex structure of neuron nets requires much time and big efforts. This is why our children should study from the early childhood until rather grown-up age. And concern for them shall be taken by Society upon itself. Of course, we must not make drones of them, but should give them time for free development. They should feel the life, see other countries, fall in love and make their own mistakes. All this is a part of the evolution process. The society should take care of them during this time and assign special means for that. School and high school play an important role. Russia has a centuries-old tradition of good education; our graduates take good positions in many countries of the world. Therefore, it is necessary to support this tradition on the state level and develop it, support the process of the evolution of Mankind. We see more and more young people in modern Russian society interested not only in primitive material well-being, but in the development of all society, development of Russia as a great state, accumulating strict rationality of the West and broad philosophical ideas of the East. And our future consists in these new powers.

Does this enable us to speak, however, about a new stage in the evolution of the Mankind as a species? Yes, of course. There are a number of definitions of the notion of "Evolution":

— a constant process, where some thing changes, passing to the other, usually more complex or better form.

— In Biology:

a) a theory of evolution, studying changes of groups of organisms in time, mainly as a result of natural selection, when the descendants differ morphologically and physiologically from the ancestors; and

b) historical development of connected groups of organisms.

Say we can trace the evolution of horses from their ancient ancestor, more similar to a dog, through a number of fossil individuals, significantly differing from one another morphologically, to the modern well-known horse. And if we now compare various breeds of horses, say, trotters and heavyweights, they belong to the same species regard less of all their differences.

If we compare a modern individual with his far-away ancestor tens of thousands of years ago, we will see that there is no morphological or genetic difference, in spite of the wide variety of races, nations, and types of constitution and physiology. However, a modern individual differs greatly from the intellectual viewpoint. And this intellectual difference is stipulated by certain morphology of organization of the brain tissue structure. This structure is not fixed genetically, i.e.; we do not keep to the theory of the inheritance of acquired character of Lamarck. This structure is formed in childhood at the expense of cultural and informational influence.

The level of intellect of a modern child can be measured with the help of quantitative objective tests, and we see that it grows even within the known period of some decades during the twentieth century not to mention comparison with the intellect of a child some centuries ago. Notions that were previously taught in the universities are now studied in schools.

Thus, we can realistically speak about the informational evolution of Mankind, evolution of the Spirit, not the physical body. This process continues within, at least, some few millenniums and becomes quicker and quicker in recent years. What can we expect from this process?

If we extrapolate modern tendencies, we can assume that Mankind moves to the understanding and control of the mechanisms of interaction of consciousness and the material world. Consciousness will be more and more involved in the creation of our world in the course of evolution. This process goes together with the development of intellectual equipment, and imperfection of individual physical qualities will be compensated by the development of technical devices in many spheres. Consciousness and equipment will integrate, at that. Artificial organs, controlled by the power of thought, will overcome sensory defects: blindness, deafness, inborn dysfunctions, the mastering of several languages, ultra-speed digestion of information, and the capability to flexibly operate huge data flows will occur. What is more, operation on the basis of intuitive associations, not hard algorithms, as contrasted with computers will occur. A computer will simply become a part of the cultural sphere, an integral part of life, as jeans and T-shirts, providing performance of many service functions in a background mode.

And most important - a man will learn to influence the development of the outer world consciously, by the force of thought. And not only our world.

Future Perspectives

We can forecast a number of consequences of this informational evolution of Mankind:

- Control of diseases and collective informational correction of energo-informational status of an unhealthy person;
- Overcoming of sensory defects by way of mental training and using technical devices, transferring information directly to the brain;
- Development of new methods of super-effective digestion of information;
- Mental journeys and conscious obtaining of information during sleep and meditation;
- Mental control of natural processes;

— Mental control of the course of development of social processes, individual life, social environment; and

— Conscious direction of the course of historical events.

It is easy to see that all the mentioned characteristics are stipulated not by the appearance of particular, even super genius people, but by the evolution of society as a single whole. All these are characteristics of collective informational processes, synchronous acts of large groups of people, possessing highly developed individual consciousness. And again we speak about the unity of individual and collective evolution, about the development of the Mankind as a single organism. An organism, providing intellect and consciousness of the planet Earth and Universe as a whole.

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*Many of life's
failures are people who did not
realize how close they were to
success when they gave up.*

- Thomas A. Edison

