

*Paper prepared for the
Fifth Euroacademia Forum of Critical Studies*

Asking Big Questions Again

11 – 12 November 2016

Lucca, Italy

This paper is a draft

Please do not cite or circulate

Kozhevnikov Nikolay, Danilova Vera
North-Eastern Federal University, Yakutsk, Russia

THE ONTOLOGICAL AND METAPHYSICAL ASPECTS OF THE WORLD COORDINATE SYSTEM BASED ON THE LIMITS OF DYNAMIC EQUILIBRIUM

Introduction

According to the ontological approach, all natural and cultural formations strive to three limit equilibriums: identification, communication-network and the minimum element of the code of harmonious interactions between them. However they never reach these ones. These limits create an internal cell of natural and cultural formations. External cell consists of phenomena and horizons and connected with internal one. The original premise of the coordinate system based on a balance of dynamic chaos: "World consists of two unequal parts. On the one hand the formation's laws are the same for the chains and structures of interrelated limit dynamic equilibrium at various levels of organization of the world. On the other hand - the rest part of the world, covering nonequilibrium processes and phenomena". The main idea of the world coordinates system: "All natural and cultural formations may be connected with limiting fundamental equilibrium of the three types, which compares the corresponding coordinate axes."

Metaphysical approach considers the "Being" of three main types. 1) "Being-essence" associated with the identification fundamental limit, which seeks to find itself. This approach was formed in ancient philosophy. 2) "Being-existential" – is the kind of "Being" as communicative systems of different entities. These entities can stably exist only by uniting with other ones. 3) "Being-presence" – is called in accordance with the ideas of Heidegger. This "Being" means that the coordinate system does not just exist, but actively makes itself at every level of the organization of the world. This activity is not the result of the spirit, the mind, the intellect, the will, or life. It is manifested in the fact that "being-essence" and "being-existence" are tuned to the harmonious rhythms of the world and create the cells, which is widespread the presence of the coordinate system at all levels of organization. This bond is the result of self-organization processes and is optimum and sustainable.

The conception of the world coordinate system based on the limits of dynamic equilibrium is the following. The dynamic equilibrium of different types, based on deterministic chaos is the most widely distributed in the world. They can really be found at all levels of its organization and associated with any processes that occur in nature, society and the humanitarian sphere. The development of the world as a whole would have been impossible without intermediate dynamic equilibrium on which any possible process could base on from time to

time. Another idea consonant with our concept is the triad of interrelated fundamental notions. Here we can mention "Trinity" in the Christianity, the "triad" of Hegel, the triple view of the system inherent in systems theory (inside, outside and environmental point of view).

It should be emphasized that our approach is very versatile and have many forms and types. The most important are the metaphysical, ontological, phenomenological, hermeneutic aspects of the coordinates' system of the world. The main areas for the application of the approach (the fields of the research) are the natural sciences, cultural sciences, religious and others. The different kinds of Being actively interacting between themselves is the main subjects of ontological and metaphysical aspects of this problem.

Ontological and metaphysical approaches have preceded consideration of the phenomenological aspect of the coordinate system. It begins with the realities associated with the coordinate system, with its bright crashing into the consciousness of the stroke. Here at the forefront poetry, because that it is able to provide such a stroke or trait.

The ontological aspect of the world coordinate system

Any natural or cultural formations can be considered from point of view the dynamic equilibrium's limits. All these formations tend to three limit fundamental equilibriums: identification (*I* - limit), communication-network (*C* - a limit) and limit rhythm of the time (*K* - limit). Natural and cultural formation is not reached these ontological structures (equilibrium limits *I*, *C*, *K*) as a result of environmental resistance. However, each stage of the process of change of any natural or cultural formation can be compare with intermediate dynamic equilibrium *F*, *H*, *T* associated with *I*, *C*, *K* by calibration ratios. Ontological structures *F*, *H*, *T* correspond to the calibration of dynamic equilibrium nodes, which are connected with optimal and stable rhythms of the world harmony. In this equilibrium's cell established the possible dynamic equilibrium between an arbitrary natural or cultural formation and of the set its external limits: the phenomenon (*F*), the horizon (*H*), and the intermediate rhythm of world harmony (*T*). Ontological structures *T* and *K* should be highlight their sense of time.

All unknown to us processes are balanced with the limit notions of the corresponding world levels. For different levels (constitution) of the world is possible to allocate: for the limiting phenomena: "vacuum", "mass", "temperature", "life", among the limiting horizons, for example - "inertia (inertia)". However, in the real world we have to deal with intermediate levels. Among them will be the intermediate horizons - "phenotype", "person", and with the intermediate rhythms of world harmony is connected, for example "spirituality".

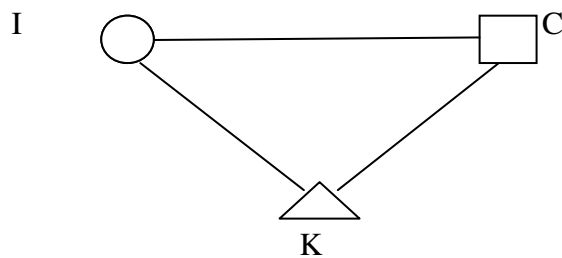
The relaxation time t_r , revealed in the inner cell *I*, *C*, *K* becomes the base calibration interval for *F*, *H*, *T* - the external coordinate system's cell of the natural or cultural formation

under of our consideration. To limit time K , much more than limit time T . The latter (time T) should be laid determined number of times in the first (time K). Only in such calibration nodes may be steady state of natural or cultural formation, as these nodes, it is related to the harmonious rhythms of the world.




The main idea of the natural coordinate system of the world is that “all the natural and cultural formations and their structures can be related to the ultimate fundamental equilibrium of three types (I, C, K). These limits are compared coordinate axes corresponding to the phase space, which is carried out this relationship. The process of natural or cultural formation’s state correspond to its development (change) and can be represented as moving of the external coordinate system’s cell (F, H, T) this formation in the phase space. Consider the cells of the coordinate system and natural and culture formations.

For illustrative purposes, consider the foregoing internal and external cells of the coordinate system, which are connected at the same time with any natural or cultural formation. Both cells are the ideal designs and are unattainable for this formation. The first (inner) cell can be used for calibration of the second (intermediate), moving in the phase space, characterizes the process of change in the natural and cultural formation.

Ontological aspects of the world coordinate system based on the limits of dynamic equilibrium are characterized by a model of the organization at different levels of the world, its main structures. Consider the basic approach and the scheme, which can be used for the levels of the structural organization of the world.



Фиг. 1. The limits of the coordinate system in the plane of the phase space

Diagrams of the basic elements of the Being for different levels of structural organization and the world. The sign  corresponds to the identification limit I ,  - communication-system limit of C , and  - code K , which provides a harmonious interaction between I and C .

Three mentioned above limits I, C, K are formed by limiting the dynamic equilibrium of various types. Equilibriums focused on the limit I formed by the "vertical" and characterizes the

transition from one "phenomenon" ("curtain" or "cover") to another. There is a transition from one level of equilibrium corresponding to the one level of identification to the equilibrium of another level. Equilibriums oriented to limit *C* emerging on the "horizontal" and characterize the transition from one "horizon" to another. Equilibriums oriented to limit *K* are formed within the cell which provides a balance between an arbitrary natural or cultural formation with limits *I*, *C*. They are characterized by the relaxation time, during which the natural or cultural formation is balanced within these limits. This relaxation process is also never implemented fully, as one non-equilibrium effects on the surrounding environment follows another one in the real world and the studying formation does not manage these impacts to balance in time. Relaxation time K_r must be made up of two times: first there is a relaxation of the limit of identification - a new level of essence is formed during K_{r1} , and then it communicates with other essences - there is a new system of beings, including it's new and it happens during K_{r2} .

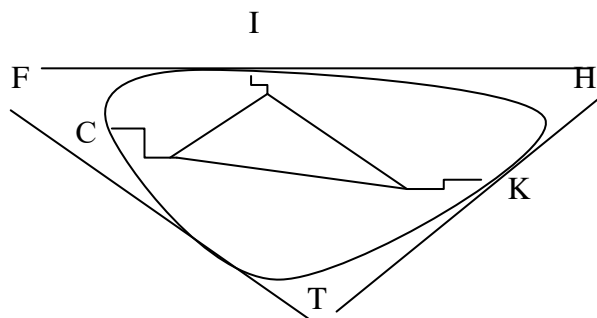


Fig. 2 The cells of the coordinate system in the plane of the phase space

Here curve line is a natural or cultural formation. Inside the triangle is uniting the limits of identification *I*, communication *C* and the limit rhythm of the harmony this level of the world - *K* for this natural or cultural formation. This is an internal cell coordinate system based on the fundamental limits of dynamic equilibrium.

Outside, it covers a triangle, which unites three key elements of dynamic equilibrium: phenomenon - *F*, horizon - *H*, relaxation time while achieving harmony in the triangle - *T*. This is an external coordinate system's cell based on the intermediate limits of dynamic equilibrium.

It should be noted that the internal and external cells perform different functions in the process of interconnection of natural and cultural formation in the world coordinate system. The inside cell, composed of limits *I*, *C*, *K* is a landmark in establishing its links with the coordinate system. Thanks to them, you can identify resistant components for the outer limits *F*, *H*, *T* of the cell of the natural and cultural formation. In the real world natural and cultural formation interacts with this outer intermediate cell.

S - the main parameter of the natural or cultural formation.

The metaphysical aspects of the world coordinate system

The metaphysical approach to the coordinate system allows us to consider the existence of three main types: "Being-essence", "Being-existence", "Being-presence". They are closely interrelated and interact with each other.

1) "Being-essence" is related to a fundamental limit *I* and seeks to clarify itself. Such an approach to Being formed and has been detail studied in ancient philosophy yet. "*It is the essence of things, quality, quantity, relation, place, time, action and enduring*" (Aristotle, 249). "Being-essence" seeks to self-identify that became more and more fully and thus tends to the most optimal and sustainable condition. Many of the formations in the living world and in the non-living world can be considered as perfect, but they tend to even greater perfection at all levels of the organization of the world. In society and the humanitarian spheres is usually far away to the optimum and sustainable objects associated with existence, but there are numerous examples of the highest perfection, and their respective ideals. Being "*Aristotle was already understood as the unity of analogy ... Aristotle posed the problem of the unity of being, in contrast to the variety of content categories*" (Heidegger, 18-19).

2) "Being-existence" - the second basic form of existence in the form of a communicative system different essence because they can stably exist only by uniting with his fellows. Heidegger uses the terms "*Dasein*" and "*Existenz*" to refer to the human person. Man of Heidegger is being, the essence (essentia) of which lies in its being (existentia): "*The essence here-being (of Dasein) in its existence*" (Heidegger, 42). Planets and stars join together in galaxies, because they have some common essence: dark matter and dark energy. The life of populations and species, and further their combine into the biosphere is also possible only on the basis of some of the communicative nature. And at the heart of communications in society is the semiosphere. However, all these communication essence is very difficult to define in clear and understandable terms.

3) "Being-presence" - this kind of being named in accordance with the Heidegger's ideas, which is determined as a certain oscillation frequency. "Being-presence" means the universal harmony, the rhythms of the world coordinate system does not just exist, but actively makes itself at every level of the organization of the world. This activity is not the result of the spirit, the mind, the intellect, the will and the life. This presence is manifested in the fact that "being-essence" and "being-existence" are tuned to the specific rhythms of the world and create a cell, which is the ubiquitous presence of the coordinate system at the all levels of its organization. Such a relationship, which arises as a result of self-organization processes, is an optimal and sustainable and is closely linked with the "timeness".

"Being-presence" is a manifestation of global harmony and a sign of an amazing organization, feasibility and optimality of all aspects of the world. Where this harmony is present, there are objects that exist considerable time. For example, the structure of the atmosphere in its present form exists - 1.8 billion years old, the hydrosphere - 3.8 billion years. At the same time there have been significant fluctuations in their individual settings, but the overall dynamic equilibrium of the atmosphere and hydrosphere, proved to be extremely stable. Such a complex entity as the Earth exists 4.6 billion years. If these formations do not match the rhythms of world harmony, they would have ceased to exist long ago. The same can be said about the species with an average age of 5 million years old, and some of them are much more. Great works of the human spirit in philosophy, literature, art, religion and claimed hundreds of thousands of years. Plato, Aristotle, Homer caught the fundamental rhythms of the world, which made the foundation of philosophy and literature. The prophets of the great religions of the world: the Buddha, Jesus, Mohammed, and their successors could not have carried away their teachings hundreds of millions and billions of people, if their text books did not correspond to the rhythms of world harmony. Prophets "heard" the global harmony code and broadcast it to the people. Many of them were illiterate; so factors such as intelligence, education, knowledge don't play the special role.

"Being-presence" - is a manifestation of the world's languages, which are available at all levels of its organization. For example, a quantum system (atom, the nucleus, the molecule), elementary particles, quarks, gluons are characterized by quantum numbers. State of an electron in an atom is determined by four quantum numbers in the so-called full quantum system exhaustively defining its status. In the living sphere there is genetic code, numerous languages of ethology. In society and the humanitarian sphere there are communicative systems of languages. "Being-presence" operates of the cell coordinate system, as their equilibrium could be only dynamic equilibrium. Such cells are specific natural and cultural formations in the world of non-living, living, society, humanitarian, but these cells belong to the world coordinate's system too.

All types of being mentioned above in the real world are not fully appearing themselves; their limit depth is not achievable. "Being-essence" based on the intentional limit and it is the "thing in itself", in accordance the terminology of Kant. Cognition of a particular level of reality provides some "covers" that can be called "things for us," in line with Kant's terminology or according to Husserl - phenomena. We will continue to use the term "phenomenon" (F), as the term "cover" is unscientific. The phenomena are dynamic equilibrium, which in one way or another connected all the processes in the world. What is "beneath" can be considered transcendental region, which cannot be known until the end. However, during the transition from one phenomenon to another (from F_1 to F_2), some new area of study becomes available, but the

area still remains transcendent. It is appropriate to recall the paradoxes of Zeno "Achilles and the Tortoise" - as if close we are no closer to intentional limit there will be remain the unclarified sphere. That is why all the fundamental essences of the world (spirituality, inertia, gravity, life, etc.) cannot be understood until the end.

"Being-existence" should be viewed through the "Horizons", a common term for which we will - of H . Horizon - a communication level at which completes the formation of a particular phase of a system of such essences. In forming the stable communication systems there is a transition from one horizon to the other. So the horizon of H_1 corresponds to the phenomenon F_1 , and horizon H_2 - to the phenomenon F_2 .

Any examination of the phenomena, horizons and the three aforementioned limits (identification, communication-system and limiting the rhythm of world harmony) occurs in conjunction with the natural or cultural formations. We are always dealing with such formations and study their development in view of the world coordinate system.

Only three kinds of Being together ensure that the being is, which manifests as flicker different faces in the gaps rhythm.

Discussion

The world coordinate system is present in every part of the universe, at all levels of its structural organization, but it were as in the "parallel" phase (phase) space I, C, K . "The world coordinate system" is not identical with the concepts of "absolute", "preferred" or "truly objective" reference system of classical physics. In contrast to these concepts offered us the coordinate system on the one hand adapts to the process, if it is able to "catch" for any type of equilibrium. On the other hand, entered into a random interaction with this process, the coordinate system helps him to find a more sustainable equilibrium. The world coordinate system is the passive part of the world like it "shadow". It is a set of interrelated limits, in respect of which in the rest of the world carry out the self-organization processes. Attempts to understand Being from the one limiting concept is useless. It can be understand only as a structure of interconnected limiting concepts.

The world coordinate system is not related to the idea of God or the Absolute. We do not distinguish out any particular (singular) points, axes, or rhythms. All essences, their communication system or rhythms for one level of organization of the world do not have any advantages over the other such levels. For example, the rhythms of living nature no better rhythms non-living world or spiritual sphere. They have different frequencies, periods of vibration, but are similar to each other. The fundamental and intermediate limits described above are homomorphism. The universalism of offered the world coordinate system is in this point.

World Coordinate System is rather simple and accessible to everyone. There is possible to come to it by developing sensory representation, using theoretical models of cognition, creating a combination of all possible types of such interactions. After the first contacts coordinate system will adjust individual to their rhythms itself and will keep him stable connection. In the life of a modern man must continually sounding "melody" of this communication. The most important thing to know, to feel that there is a system of coordinates, and then it will provide individual existence "régime of awake", discovered itself for him more and more.

The coordinate system is the boundary between being and nonbeing, one side of which faces to the first, the other side - to the latter. All that chaos a certain level of organization of world (the totality of the relevant interrelated processes), which is involved in the creation of the coordinate system is beyond the perception of its natural or cultural formation. As a result, the coordinate system is presented to us as a «tabula rasa», although in fact it has quite complex organization. The coordinate system can be compared with the physical vacuum, which is often defined as a state where there are no real particles or "void" of Taoism. In fact, both: the vacuum and the "void" are complex.

The existence of the world coordinate system clearly appeared in the anthrop principle (strong variant), according to which the universe and consequently the fundamental parameters from which it is depended, should be such that allows the existence of observers at some stage of its development. In other words, the world system of limit dynamic equilibriums have sequence change after the change of the fundamental parameters of the universe provided the appearance of man himself. Evolutionary processes are much faster than if they were based on sorting of possible options for further development. They are like directed by the coordinate system of the world. With the world coordinate system correlates well the synergetic paradigm, one of the principles of which is as follows: "Processes of creation have a single algorithm, regardless of the nature of the systems in which they are carried out". The coordinate system interacts with open systems, which have a tendency to self-organization, self-development, dialogue, and this openness allows them to be interconnected with the coordinate system.

Cell I , C , K is used for calibration through these limits, and for the study of the fundamental levels of the world, when vacuum, mass, temperature, life, spirituality first appear.

However, in real processes of any natural or cultural formation changes are connected with an intermediate cell F , H , T . There is also relaxation time t_r should be composed of two times: first there is the relaxation of the intermediate limit of F - a new level of essence forms in the time t_{r1} , and then it communicates with other essences - there is a new horizon (of beings system, including the new one) and it happens during t_{r2} .

The time t_r is the maximum time to establish the full harmony within the cell F, H (the coordinate system's cell). Typically, such a balance is established before, but it is not complete, and is located in one of the calibration units.

We define and examine the fundamental elements of this scheme for the different levels of the world (to limits I, C, K and homomorphic limits their intermediate F, H, T ones).

Human Level

Natural and cultural formation - individual (S)



- human



- personality



- Spirituality. Thus is relaxation time, which makes a person a person a minimum of code element rhythms of world harmony (interaction with God, with the guru, with a loving man - mutual love, etc.).

Human is a completely new essence (entity) in comparison with all other levels of the world. Deepening and continuous extension identification of primates provided their evolution, and this process was extremely fast development. Human resources are enormous and the process of self-identification can last a very long time (almost indefinitely). Man carries a "Being-essence" as the element of identification limit equilibrium of inner cell.

Personality is the result of communication with something very high and deep. It becomes the main stable relationship between man and a phenomena and a horizon. The man and the person does not communicate directly, but through them. Inner cell communication limit equilibrium is "Being-communication". Personality can be stabled if it is guided by the rhythms of world harmony. Inside the cell is "Being-presence", and assistance in cooperation with it often has a focus on God, Guru, inner ideals.

Results and conclusions

There are no may be a coordinate system arisen naturally in the world. The further development cannot be connected with it. Despite of the world's complexity it is surprisingly organized, expedient, optimal, stable. All its levels are associated cosmic cycle of matter, energy, information. Local coordinate systems can be considered as inertial systems in mechanics or quasi-static processes in thermodynamics. The concept of coordinate systems developed in geography, astronomy, in science where the special methods and directions are integrated, system's theory, ecology, synergetic and many others.

The main characteristic of the world coordinate system is a focus on limiting questioning, which was mastered by the ancient Greeks, but then this approach was forgotten or distorted. To

such questioning be sustainable it must be harmonious and match the rhythms of the world. These rhythms are similar to non-living and living nature, society, and humanitarian spheres.

Three mentioned above limits I , C , K are formed by limiting the dynamic equilibrium of various types. Equilibriums, focused on the limit I formed by the "vertical" and characterizes the transition from one "phenomenon" ("cover") to another. There is a transition from one level of equilibrium corresponding to the identification to another similar equilibrium. Equilibriums oriented to limit C emerging on the "horizontal" and characterize the transition from one "horizon" to another. Equilibriums oriented to limit K provide a relationship between an arbitrary natural or cultural formation and cell of I , C , K . This type of equilibrium is the most universal, because all stable and optimal formation in the world is subject to fluctuations with periods or frequency associated with the rhythms of world harmony.

Limits I , C , K are also required for calibration coordinate system cells. In any natural or cultural formation is part of the substance S , which may be connected with each of these limits. Appropriate processes of such connection are characterized by relaxation times, during which the natural or cultural formation is balanced with these limits. These relaxation processes can be carried out only mentally. Relaxation time K_r must be made up of three times. 1) There is a relaxation of the identification limit - formed a new level of essence during K_{r1} . 2) This essence communicates with other essences – in the result there is a new system of beings, including its new essence. It happens during K_{r2} . 3) The third relaxation occurs between the intermediate rhythm and limiting rhythm harmony appropriate to the level of the world's organization.

For real processes of change of any natural or cultural formation using a cell F , H , T . There is also relaxation time t_r should be composed of three times: first, there is a relaxation of the intermediate limit of F - a new level of essence is forming in the time t_{r1} . After that with this essence communicates with other essence - there is a new horizon (system of essence, including the new one) - for the time t_{r2} . During t_{r3} –it is established corresponding to these limits harmonic rhythm. Time t_r - maximum time to establish harmony within the cell F , H , K (the cell of the coordinate system). Thus there is a transition from one of calibration set of nodes to another.

The world around us is non-linear, complex, but the ontological conditions of the coordinate system are simple, as well as herself.

Bibliography

1. Aristotel' Sobranie sochinenij v 4 t. T. 1 – Moskva: Mysl', 1976 – 550 s.
2. Heidegger Martin. Bytie i vremja – Moskva: Folio, 2003 – 503 s.