



Cosmology and Moral Philosophy

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ABSTRACT: The universe as a whole can be shown to consist of two worlds: the real world and the transcendental world. The real world is a multitude of passing things in a gravitational field: it is the world of nature, every unit of which is born (from the transcendental world), develops, degrades and dies (that is, it returns to the transcendental world). The transcendental world is the world of the integrated, nonpassing, unborn and undying, internally functioning Unity, which is the other side of the real world (so to speak) as roots to a tree and its branches in relation to the surface of the Earth. The fundamental science of the real world is theoretical physics. The transcendental world is also a 'physical' but energyless world. In this paper, I outline characteristics of the real world, and the basic characteristics of the transcendental world which are essential for constructing a theory about the functioning of the cosmological vacuum.

1. Basic characteristics of the structure of the real world

The real world of our universe one can present as consisting of the totality of the interconnected (through the known fundamental interactions) units of the nature, for example, photons, atoms, molecules, cells, living organisms, men, stars, galaxies and etc. Their materiality is shown, for example, in the outwards activity (the power), in which the units of nature come forward as integrated formations in the relation of other units of nature; their spirituality, enlightened through the materiality, in the form (in order of the growth of the spirituality) of the inside activity (that is of the spontaneous transitions into their different states), in the form of the senseorganized unity (regulated by any laws), of the soul, and of the spirit. Different units of nature have different degrees of the spirituality, which are shown in the spontaneity, statisticality, selforganization, freedom of the will and so on, therefore one can say about corresponding spiritual aspects of any units of nature.

The transcendental part of the universe exerts the influence on the inside activity of the units of nature through creation of the virtual states and virtual processes.

The units of nature of a complicated structure have the central organizing element, functioning of which gives the selforganized integrity to on initial unit, and the loss of which means destruction of this material-spiritual unit of nature.

The structureless (not disintegrated into elements) units of nature (for example, photons) can arise and disappear only through their birth and destruction as a whole, while the structural units can arise and disappear in parts.

As the definite laws of conservation are to be observed when units of nature are born, the structureless units should be born and destroyed by groups (for example, by pairs) and thus they are indirectly connected with each other, although they may be separated from each other by considerable distance, that is in the definite sense these groups form the structural units of nature (but without central organizing element).

In the natural state the units of nature are greatly different in their originality, structure and relation to other units, but they are united by some characteristic signs, for example, availability of the integrity and structure, selfcoordination of all elements of the structure and consideration of other elements of nature in their conduct, relative independence and ability to reflect their environment, spectrum of the inside states and inside active principle and so on, in other words, availability of the semantic organization and vital activity with the harmonious combination of individuality and collectivity.

Any (in particular, structural) unit of nature has the spectrum of the inside states and inside active principle, thanks to which the change of its inside state may occur with or without change of its senseorganized unity (in these cases one can speak accordingly about comprehensive selfperception or selfdevelopment), expressed, for example, in change of its an inside parameter. The similar processes, taking place under influence of the outward influence, indicates comprehensive perception of the outward world from the point of view of the given unit of nature or development of a unit of nature. Thus, the inside active principle can be also the principle of the selfdevelopment, when a unit of nature acquires higher semantic organization spontaneously. The spiritual aspect of the unit of nature, connected with ability of selfperception or perception of the outward world, can be called the inside activity. All units of nature possess it. Besides, the structural units have sense organization, as their components obey laws (for example, gravitational or electromagnetic laws) of the inside interaction of their parts (and also laws of interaction with other units of nature).

Perceptions can be chaotic or integral depending on either the units of nature are structural or integral formation. One can speak about conscious or unconscious perception by highintellectual units of nature depending on their state. For example, a man, subsiding into deep sleep without dreams, is multitude of the units of nature, and not as an integral unit. Therefore he receives a great number of small chaotic perceptions, not united as a whole clear perception. In this case a man is in the consciousless state. When waking up he subordinates the whole totality of his components and perceives himself and outward world consciously.

The sense is something higher, than perception, as it is accompanied by memory, that is ability to keep and use the preceding perceptions and their sequence when necessary. The inside sense permits to feel himself, the outward sense one the surrounding world. The spiritual aspect of the unit of nature, possessing feelings, is called soul. Only living organisms possess souls. Death of an organism causes destruction of their souls.

The incompleteness of the sensual picture, demanding logical reasonings in relation with it, is completed by the reason. The reason as well as the senses, they both do not give ideas. It is done by mind capable to generalize the sensual and reasonable pictures, but giving it the absolute and undoubted character, bringing it to the ideal, which is not available in nature and the universe. The mind can be directed to study its own "I", the surrounding world, as well as transcendental world, but in this case it creates a new, mathematical world, which is neither real nor transcendental world, but only informational mathematically. Therefore higher than mind cognition ability is required to bring to conformity the picture of the mind with the universe. The spiritual aspect of the unit of nature, possessing the with mind, is called the spirit. Only human being possess it, if they are not limited by the sense-reasonal life.

The intellect (1) is the highest cognition ability of a man, transferring the absolute and undoubted ideas of the mind into the energeticless-informational transcendental (and afterwards real) sphere and thus making the cognition of the universe adequate. Thanks to the intellect one can see the material and spiritual essence in each unit of nature and the whole integrated transcendental world, and the structural characteristics of the real world, for example, the spiritual (the senseorganized unity, soul, spirit) and cognitional (sense, reason, mind, intellect) are not to be applied to the transcendental world. The transcendental world is characterized by inside activity, perception, selfperception, selfdevelopment and so on.

So, the real world is characterized by connected multitude of the transient, but long existing, matter-spiritual unit of nature with one or another degree of the spiritualness. Therefore there are stable cause-consequence, space-temporal and subject-objectal relation as well as impulse-power, spin and other characteristics capable to be the basis of the theory of this world in it (and they not available in the transcendental world).

2. Basic characteristics of the transcendental world

The availability structureless, but, for example, twin units, distinguishing by one or another opposite characteristics (for example, by sign of the electrical charge) in nature, and also the unity of the real and transcendental aspects in it brings to an idea, that fundamental basis of the real units of universe should be connected with the transcendental world through virtual states, which, in their turn, have basis in uncreated and undestroyed active senseorganizing (but not senseorganized as the whole point is in the absence of the organization, figuratively speaking the whole sense is in the absence of the sense) united cosmological substratum, which on average does not possess any conceptual (stable) space-temporal, cause-consequenceal, subject-objectal, impulse-power, charge, spin and so on characteristics, inherent in units of nature; the latter appear together with origin of the virtual and real states of the unit of nature's unit from this cosmological substratum, which therefore can be called cosmological vacuum.

The cosmological vacuum is the fluctuating (in metric, dimension, topology, coherence) space on the background of the multitude of the virtual, powerless, structureless, inside active having the spectrum of the inside states (that is ability to the selfperception, selfdevelopment, perception of the outward world) units of the transcendental world, which is its outcome. Cosmological vacuum is unit of the transcendental world. In spite of this three hypostases can be distinguished: 1) the universal boson, 2) the spontaneous inside move of this boson (its transition into different states), 3) the senseorganizing inside move (in its some inside states), transiting into outward move, in which the fundamental units of nature (first in virtual and then in real states) are born.

The universal boson can be presented as of the fluctuating space. The spontaneous inside move of this boson causes all sorts of its possible states, from virtual up to real. The virtual states of the vacuum ("false vacuum") is its unsteady excitement, raising the virtual particles and inside virtual space-temporal, cause-consequenceal and subject-objectal relations. The real state of the vacuum (true vacuum) is such its excitement, in which the real particles are raised and also real space-temporal, cause-consequenceal and subject-objectal relations. Therefore one must distinguish three types of the geometry of the cosmological vacuum: the inside geometry of space of the universal boson (basic pre-geometry), the inside virtual geometry as the geometry in presence of virtual particles (space-time foam) and the outward geometry as the geometry in presence of real particles (classical geometry). All three aspects of the cosmological vacuum (and corresponding aspects of geometry should be explained physically). The source of the spontaneous inside move (vital activity) of the cosmological vacuum can be presented as quantum fluctuations.

The vital activity of the cosmological vacuum, generally speaking, is not connected with the change of its energy, because it is cold (its average energy is equal to zero). Here one can tell about availability of the Planck's density now herenow there or what is same space-time foam (singularities in classical language) or the state of "false vacuum", in short, "nothing" (absence of any real particles and radiation). When speaking about quantum birth of the world from "nothing" with Planck's density or from singularity, they mean same: the creation of classical space-time's regions from space-time foam. When description of the universe's evolution according to classical equations of a movement begins with its sufficiently big radius, they speak about creation from "nothing".

The cosmological vacuum as the senseorganizing beginning of the real things (as basis of the outward move) is shown in processes of the transition into states, in which particles are born and hence the laws of its interaction, that is when the senseorganized (well regulated) units of nature are shown. These real units are forewarned by their virtual states, that is laws of the real world are in the transcendental world for virtual states of particles. The United Highest Law appears in the transcendental world unmanifested form without not depending on the existence of the real world. In the real world it is only manifested, but do not arise. This Highest Law is united, but in the world of nature it is splintered into multitude of the laws of nature. The essence of the functioning of the Highest Law is creation of new and new real worlds and maintenance of their life, therefore it is one of the most important hypostases ("Son") of initial God, that is of the cosmological vacuum. (Other hypostases of God are the spontaneous inside activity ("The Highest Spirit") and the universal bosom ("Matter")). The lowest display of this Law in nature is the birth and the maintenance of life of quarks and leptons (or preons), the highest one is birth (and maintenance) living beings, having the intellect. As fragments of the Highest Law are present in each unit of nature, any part of nature can inform about the whole nature and even about the universe from the point of view of this unit (anthropical principle).

According to standard cosmological model, our universe was born from singular state of the cosmological vacuum with infinite density through Big Bang (cosmological repulsion). The most essential peculiarities of typical for present time, were formed during short time (say less than three minutes). The early universe, in the process of its formation, had unusual units of nature for present time existence (for example, magnetic monopoles, superstrings), unusual forces (for example, cosmological repulsion due to negative pressure), unusual dimension of space-time (for example, equal to 10 or 11) and so on, which disappeared at present time, leaving the relict in the form of its known basic characteristics.

More accurate definition of the standard model (2) is connected with explanation of the Big Bang. In the result of the quantum processes, taking place inside of the cosmological vacuum, it can turn into unstable (but cold) state, called "false vacuum" (or pre-initial state of the universe). This state is characterized by huge negative pressure (but almost by zero energy), due to which the Big Bang take place and inflation (the exponential expansion that is blowing). To the end of the phase of inflation the universe was empty (there were no the real particles) and cold, but after of the decay of "false vacuum" it crossed into the state of the true vacuum, having produced huge energy (kinetic energy of real particles) and warmed up to very high temperature during very little time. The formation of bubbles of true vacuum, which form new and new regions of classical space of the real world when expanding takes place already in state of "false vacuum".

The cosmological vacuum, which is the truth of intellect (that is the intellectual-intuitional discretion of the fundamental basis and principles of its functioning), does not represent of the ideal perfection, demanded by mind to satisfy its absolute inclinations. The absolute vacuum (that is the truth of the mind) is ideal perfection. The transition from the truth of the mind to the truth of the intellect, identical enveloping essence, can be realized through

recognition of the spontaneous inside activity, vital activity, that is the spirituality of the vacuum.

3. The transcendental world and the church theology

The transcendental world is the Creator and the Almighty of the real world, therefore we must connect the initial God with it. From one hand the cosmological vacuum is allpowerful, because it is the source of all realizing worlds, the distance duration of which depends on degree of their perfection (for example, on dimension of space-time); from other hand it is all-knowing in the sense that laws of nature are comprehensive Highest Law, which gives the permitted variety in the world and the permitted variety of the worlds (based on the variety of the senseorganized's processes); in the third place it is good in the sense that the realized worlds are harmonious and expedient (for example, they have the dimension of space-time equal to 4, in which the structurale units of nature of type of the atomic and planetary systems are possible. One can say that the cosmological vacuum is the Great Monarch, the Great Architect, etc. One could find some the other qualities in it, for example, the aesthetic taste (because it chooses harmonious worlds for creation), the will (because it realizes them), etc. Thus, one can see some features in the cosmological vacuum, giving ground for its church-theological interpretation. However the cosmological vacuum itself does not have very many qualities of the natural units, but from the scientific point of view the (non-church) theology is isomorphous with the physical cosmology. One must agree with conclusion of the brilliant Jove's Book (3; 41,3) of the Bible that God is not obliged man, but man is obliged to God in everything and being thankful he must live in accordance with the Highest Law.

4. The cosmic moral

If a man want to be really happy, he must be in full consent with the universe, that is he must 1) know all perfections of the universe (to possess the necessary learning), having made the corresponding science, 2) love these perfections (to know the essence of the good), having chosen the corresponding theology, 3) choose them for the guide to life (to find wisdom), having created proper philosophy, 4) realize them in his life (to strengthen the will), having elaborated the necessary ethics, 5) feel them (to develop the aesthetic taste), having created adequate aesthetics. Science, theology, philosophy, ethics, aesthetics have in themselves basis the eternally living senseorganizing cosmological vacuum as their basis. But the science on nature, theology, philosophy of nature, ethics and aesthetics connected with nature, depend on system of laws of this or that world, but the science on the cosmological vacuum is connected with comprehension of the fundamental substance, which is the basis of all possible worlds, therefore it must be the united and the highest science for reasonable beings of all worlds.

The cosmological vacuum is spontaneously inside active and free from any connections, therefore a man, orientating on the principles of the functioning of the cosmological vacuum, is free, if he rises over space-temporal, cause-consequential, subject-objectal relations of the nature's world, at the expense of his inside activity remaining equal to the opposites (impassive) and not being tied to the fruits of his activity. Having reached of the wisdom (of interpretation of the universe through science on cosmological vacuum, the perception of world through cosmic art and world relation through cosmic moral), he will win himself, duality, attachment and comes to consent with himself and with the universe. The world of nature is harmonious, beautiful, wisely organized world. As it is a creation of the cosmological vacuum, a man must live by model of functioning of the transcendental world that is of God. This is the cosmic moral (4). (The ethics can be also drawn from the church-theological interpretation of physical cosmology).

References

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