

Intentionality of Time and Quantum – Phenomenological Sense of Space

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Abstract Intentionality of time seems to play a role of vitally important phenomenon in comprehensible sphere of cosmos. The work presented here is just devoted to the problem of timing the space throughout the genesis and development of the universe. This philosophical inquiry goes beyond physical cosmology and refers to phenomenology of life in the light of biblical-theological experience of mankind concerning the supernatural celestial events.

To explain the correlation between the intelligible order of outer space and the logical structure of consciousness, it is suggested (based on the phenomenology of Hegel and in the spirit of the ontology of Heidegger) that being has an inborn intentionality of self-reflection. Therefore, incipient state of being – primeval chaos, which gives birth to the cosmos presents the self-reflective and hence the self-ordering system. Emergence of life and development of human consciousness both are essential points in unfolding this system, since Logos of life appears to have realized this inborn intentionality of being.

This position makes some critical remarks to the cosmological theory of “Big Bang”. Phenomenological interpretation of wave-particle duality explains the expansion of the galaxies without referring to the starting explosion.

It is suggested that the cosmos is not exhausted by the objective reality of mega-physical events and shares with subjective forces of life which make the sense of time penetrating all the cosmic river of stars. Although, time is relative (it depends on the reference system), the intentionality of real time (from the past toward the future) keeps its absolute meaning for all the diversity of beings. On the other hand, subjective origin of arrow of time ruins objective perspective of spreading the classical causality throughout space, since the cosmos has had not the monological, continual structure.

Discontinuity of the upper-land means the coexistence of galactic physical reality with transcendental sphere of ideas and sense-forming acts. This subjective process

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of becoming the sense saturates the world and inserts some freedom and uncertainty within the starry order. Therefore, the cosmos is not absolutely intelligible and cognoscible. Neither the lack of cosmic information nor the failure of cosmological theory is responsible for cosmic uncertainty. The latter has a positive value, since it has manifested the phenomenological openness of cosmos toward primordial chaos. It makes an opportunity of creative development of human consciousness in the everlasting life of the universe.

Part One

It is not accidental that the cosmos serves as the area of my imagination, fantasy and dream. The very fact of coordination of my subjectivity with the celestial sphere means that the cosmos cannot be exhausted by interactions of physical-celestial bodies. The moon is the source of my poetical inspiration, the sun symbolises the joyfulness and happiness of life, stars accompany my dreams. All these phenomena of my psycho-emotional life have the roots in the metaphysical mystery of cosmos. I always used to confuse when meeting the explorations revealing the tremendous scale of the mega-world – the distance million and million light years, time leading in a huge number of centuries... My imagination is unable and my words are inflexible to express the incredible scale of cosmic forces. Theoretically I can calculate the great number of stars and embrace immense diversity of galaxies but let me be sceptical concerning the phenomena which I cannot actually comprehend (In physical cosmology, according to current scientific theory, the diameter of the observable cosmos is thought to be about 93 billion light years. The diameter of the entire cosmos is unknown. However according to Alun Guth's "inflation theory" the actual size of the cosmos is at least fifteen orders of magnitude larger than observable universe, approximately 10^{26} light years). See (Guth 1997).

Indeed, my terrestrial being is far to be compared with the great distances and forces of cosmos, but I have the consciousness which gets my being to deal with a spiritual sphere and thanks to this relation I am a subject who perceives and cognizes the cosmos. Therefore, there should be some accordance between the subject and object of this cognition. If the cosmos presents a comprehensible system of objects, I as a subject should be comparable with the cosmos and the huge celestial events calculated from the data of the cosmic experiment yet going beyond my comprehension, would be illusive.

To clearly recognize the problem let's emphasize what kind of the subject we are speaking about. The subject as the source of vital spiritual energy is worth mentioning here. He looks like the subject of quantum measurement which participates in the process of making the sense of atomic objects. Therefore, the subject appearing in the cosmos is not only the observer. He presents the vital agent of some energy acting as the creator on the stage of celestial phenomena.

When I speak about the cosmological theory of "Big bang" leading to the expansion of the distance between the galaxies I am not the vital narrator of the history

of the cosmos. My suggestions are based on the data of the cosmic experiment according to the logic of classical causality. Here I imply that the universe has a mono-logical and continual structure which makes me free to extend endlessly my classical knowledge. I do not take into account that I am the subject which acts, like the quantum measurement in the dualistic (polyphonic) spheres of being.

Discontinuity of matter rejects the mono-logical structure of the universe and hence I should restrict the using of classical causality in the cosmos. Classical physics does not take into account attendance of vital consciousness in the cosmos which deals with the stream of some intellectual energy participating in making the sense of cosmological order.

Theory of “Big bang” reveals the incipient explosion of the super-dense matter resulting the extension of the system of the galaxies. The theory of relativity implies the cognoscibility of the universe (Hawking 1999). Both conceptions make the cosmological viewpoints according to physics. To speak about the metaphysical aspect of space in the sphere of genesis of the being we also need the philosophical approach.

Phenomenological philosophy assists us to grasp the universe in the dynamic process of becoming the being. It takes into account the sense-forming acts reflecting the process of the cosmic development. Phenomenology embraces the motion of cosmic forces in its integrity with human consciousness. Such a complicated problem is far from the physical viewpoint. To the physicist the cosmos presents the area of physical–celestial bodies and the cosmic relations are reducible to interactions of the physical objects. Even if we shared the position of Einstein concerning the intelligible nature of the cosmos it would be the intelligible space from the viewpoint of the physicist – who considers the cosmological concepts and ideas as the ideal, stable, basic forms which determines objectively the physical objects and the relations in between. Einstein’s viewpoint implies that order of the cosmos has absolute character and all the cosmic phenomena eventually are reducible to the some intellectual position of the system of knowable concepts and ideas. In other words, there is some possibility to unfold the cosmos completely according to the logical concepts and the development of human mind shares with this intellectual position. Professor Ash Gobar analyzes this position on the background of dialectical realism (Gobar 1994).

Although the cosmic order has an intelligible (geometrical) structure, phenomenological approach rejects the absolute cognoscibility of the cosmos. Phenomenology takes into account the metaphysical, unknowable as principle character of the universe and what is more important, it does not consider this unknowable aspect in negative sense (which according to the physical viewpoint must be overcome). Phenomenology interprets the cosmic non-cognoscibility as a positive value, which must be kept as the basis of human creativity and as the perspective of the creative development of the cosmos.

Such a position echoes with the cosmological ideas of phenomenology of life which are developed in the work of Professor Tymieniecka A-T. – “Human Development Between Imaginative Freedom and Vital Constraints” (Tymieniecka 2009).

How to reconcile the metaphysical aspect with the physical order of the cosmic phenomena?

The cosmos is knowable and intelligible since it has a geometrical structure and it is penetrated with ideas. We can imagine the cosmic ideas as the ideal particles which are involved in wave-particle dualism of quantum physics. The interaction of these ideas makes a vital language of the cosmos and presents the process which saturates the universe. But cosmic order is not completely intelligible and absolutely clear, it has some hidden uncertainty since it has been provided by the creative process of sense-formation. Thanks to this positive uncertainty the cosmic order has a changeable and creative character in the perspective of endless development.

Thus we suggest that the universe is penetrated with ideas and confines the sense-forming process which is responsible for the development and order of the cosmos. Our suggestion derives from the basic thesis we have expressed it after the phenomenology of Hegel and in the spirit of the ontology of Heidegger (1989): the being (existence) is related to itself and hence it has an intentionality of self-reflection. Thanks to this existential intentionality, in primeval chaos we can assume the occurrence of some intellectual energy of becoming the being. Chaos has an inborn intentionality toward the being which would be self-reflected. Therefore chaos partially and step by step turned into the cosmos which thanks to the incipient intentionality, would be constituted as an intelligible system of the beings on the point of being reflected through the consciousness. Emergence of human consciousness is an indispensable step in the development of the cosmos and we can emphasize once again: there should be some accordance between the intentionality of human consciousness and intelligible nature of space.

Thanks to this essential accordance, cosmic disorder should be accompanied by the disturbance of human consciousness. One can see the signs of cosmic disaster in estrangement of human consciousness leading to self-alienation of man and to the ecological catastrophes. Being has a potential striving for self-reflection, that means that the being presents a self-ordering system. (Otherwise, in state of disorder it cannot be reflected on its own). Emergence of life which through the adaptation reflects the environment, is the first step of realization of this hidden potential of the being. If some celestial body burst into the system of the galaxy and broke its order it would mean that the being had lost its striving for self-reflection (and hence, the tendency to self-ordering) and life and consciousness as the fruitless phenomena should be destroyed. Therefore the crisis of human consciousness leading to the destruction of life should anticipate the cosmological disaster... This problem needs special investigation going beyond our paper.

To come back to our phenomenological approach it should be noted that intentionality of human consciousness in alliance with an intelligible nature of space makes vital wholeness of a subject-object relation and the heterogeneous order of the cosmos is based on this vital stream of intentionality. Therefore there must be some correlation and balance between the consciousness as an intentional, subjective phenomenon and the cosmos which presents the object of human investigation. Man as an intentional subject is comparable with his object and the

cosmos is not incredibly big. It is great but not as matchlessly great as compared to human consciousness.

Primordial chaos which anticipates and limits the cosmos is the area of Brownian movement. Brownian movement presents the in-deterministic, non-predictable rambling of particles which can be expressed through the principle: there is always the threat of braking the interaction between two particles by the accidental invasion of the third particle.

Scrutinizing this principle we have come to the point that there is no sense of time in Brownian movement; time can be measured through the duration of some movement, but this duration cannot be objectively established, because the movement always can be accidentally interrupted by the invasion and clash with a new wandering particle. Therefore it is impossible to determine the period of time in Brownian chaos and the time loses its sense.

The similar logical judgment is true for the law of causality: the link between the cause and effect always can be destroyed because of a sudden invasion of accidental particle. So we have an in-deterministic chaos of the particles which is devoid of the senses of time and causality.

Considering the primordial chaos as Brownian movement of the celestial bodies, we should take into account that our analogy is not completely identical. Chaos giving birth to the cosmos coincides and at the same time differs from Brownian movement, since it has had some inner, spiritual energy of self-reflection. This intentional energy eventually makes within the chaos the order and some wholeness of the system of beings. It would be an indivisible whole which prevents the objects from the accidental invasion of wandering celestial bodies. Within this system the time gains its existential sense and the law of causality commences to work. That is the cosmos which begets in itself the life and develops the consciousness to realize its potential tendency to self-reflection.

Phenomenological intangibility of cosmos means that the cosmic order has openness toward disorder of chaos. It embraces therefore some uncertainty which phenomenology considers in the positive sense – as the perspective of creative development of the world. The upper-land presents the sphere of some suggestions, ideas and hypotheses excluding in principle the exact science about the cosmos. The speculative character of cosmic knowledge is not the result of lack of corresponding information or the failure of cosmological theory; it derives from the real uncertainty thanks to metaphysical openness of the cosmos. Like the ontological probability of micro-phenomena, the events of the mega-sphere also are partly unpredictable as the events of the creative forces keeping the balance between chaos and the cosmos.

Here is a very important link between the objective reality of the mega-sphere and some kind of subjective being which roots in the speculative diversity of the cosmological models. It would not be strange that all these subjective phenomena serve also as a source of mythological interpretation of the celestial world. Description of genesis of the world according to the Bible appears to contain the true information concerning the incipient point of being. The word, which presents God exists before the centuries i.e. before the time and hence, belongs to

primordial chaos. At the first day of genesis divine word created the light and separated it from the darkness. It was not the physical light which was the light of day, (which he separated from the night) it was the shining of Logos, the light of absolute mind, the substance for arising the sense (Losski 1991). Our suggestion echoes Such biblical understanding of beginning of the world; Brownian movement confines some intentionality of Logos which makes first of all the sense of being and then realizes the world we call the cosmos.

This intentionality is an inner, potential ability of the universe striving for being reflected through the consciousness. Of course, genesis of the world in accord with Bible is more obvious and visual, than our philosophical suggestion. The suggestion as a scientific idea assumes the incipient intentionality of being which explains scientifically the appearance of the cosmos and emergence of life from chaos. But logical chain of scientific explanation needs to be extended endlessly, so we must spread it beyond the origin of being and answer the question – why the primordial chaos has the intentionality of self-reflection?

Even if we found the answer it would evoke a new question concerning the genesis of a new commencement and so on endlessly...

Description of the world's genesis according to the Bible avoids this difficulty. Vital experience of language shows that a word is inexhaustible for all its meanings and the word as the subject of expression anticipates the object which it expresses. The existence of the vital word as the inexhaustible subjective energy of expression is the fact, it is the phenomenological givenness and it does not need any foundation and explanation. Therefore, the word as the subject is worth considering as the absolute commencement of the world.

If we followed the biblical description of genesis of the world and assumed word-subject as the origin of being, we could not refer to the scientific – objective explanation of cosmological events. We should describe the history of the world in the concepts of subjective being. Therefore the Holy Bible contains the history of Hebrew's nation but thanks to the mythological expansion, this description goes beyond the historical introspection and refers to the cosmological sense of incarnation of God.

The biblical interpretation and the scientific – cosmological explanation both appear to be the equivalent descriptions of genesis of the world, they complete each other.

Phenomenological approach seems to try to synthesize both – the objective-scientific and the subjective introspections of becoming the world. It keeps but at the same time takes the scientific explanation in brackets taking into account genesis of the world according to the Bible.

Eventually we come to the dualistic vision of the nature of the cosmos. The celestial order should be in alliance with the creative imagination of consciousness which must be taken into account as a subjective phenomenon. The scientific description of the cosmos has been restricted by the viewpoint leading us to the development of human consciousness on the background of creative uncertainty of ubiquitous life.

Phenomenology of life differentiates two main abilities of human mind: constitutive function and creative activity (Tymieniecka 1990). The first refers to the rational power of mind which establishes the deterministic structure of the cognizable world. Under the spell of rational authorities of mind we involuntarily come to the absolute cognoscibility of cosmos – to the close system of interactions between the physical-celestial bodies.

The creative impulse inserts the freedom of intentionality as a weapon against the monster of rationality. Creative activity of mind appeals to the sense-forming process which furtively saturates all the heterogeneous diversity of upper-land. Creative impulse versus to analytical thought – that is the motto which drives not only the inner working of mind but it also develops the propulsion of the cosmic forces beyond physical matter to the vital intentionality of chaos. Openness of the cosmos toward primordial chaos provides the human mind with the creative condition.

Heterogeneous world of heaven is responsible for devaluation of the concept of causality for benefit of the idea of freedom. The link between cause and effect is played down thanks to the cosmological duality of spirit and matter. We assumed the area of uncertainty where the inborn intentionality of self-reflection acts as the subject and creates the light as the shining sense and then makes the order of cosmos which can be reflected through the human consciousness. This uncertainty could be identified with infinite darkness which God separated from the spiritual light. It is the positive darkness impregnated by light of Logos; it is a precondition of arising the world (Losski 1991).

This creative uncertainty is not the object of scientific – analytical thought. It is the sphere of phenomenological description where the integrity of subject and object would be unfolded in terms of subjective being, as the biblical history of mankind with cosmological sense of incarnation of God.

These ideas derived from the results of comparative analysis of the work of professor Tymieniecka A-T (Tymieniecka 1990) and our work (Dolidze 2006). To find the existential basis of human consciousness we used gradually the method of phenomenology and removed the claim of being from the inner strata of mind. This process of ousting (bracketing) the existence had been ended eventually; we came to the basic procedural level of the content with undeniable existential claim. It was the irreversible process of sense-forming acts, which had been embracing some mutually exclusive, conjugate couples of the phenomena, like the spirit and matter, the wave and particle (in quantum physics), The particle and anti-particle (the electron and positron) the essence and existence, the being and becoming, continuity and discreteness etc. Although these phenomena were mutually exclusive, they needed and completed each other since the one provided another with existential sense and vice versa. To explain this paradox we interpreted the phenomenon of freedom as the result of devaluation of deterministic – causal link. The mutually exclusive phenomena of conjugate pairs annihilated each other as the causal events, they were manifested and unfolded as free phenomena and thanks to this freedom they gained the existential sense in the ubiquitous river of sense-forming acts.

We used our model in a different spheres of phenomenological inquires. It resolves for instance, the paradox of wave behavior of quantum particle. Only in

continuity of wave-state, which excludes the discontinuity of particles the deterministic factors of local micro-object are devaluated and the quantum particle displays itself as a free, in-deterministic phenomenon. Thanks to this freedom the quantum particle gets its physical sense since the freedom is an inevitable condition of arising the sense. Therefore, if atomic particle had not behavior of wave it could not exist as a particle and vice versa: If quantum wave was not considered as a stream of micro-particles it could not exist as a wave.

If we expanded this phenomenological approach on the cosmic sphere, we would come to the point that chaos and the cosmos both are mutually exclusive, conjugate states of the universe. They provide each other with existential sense. Through the inborn intentionality of chaos the cosmos gets its sense of being. Why? Because the physical order of cosmos devaluates the causal structure of primordial intentionality, the latter turns into a free phenomenon and this creative freedom provides the cosmos with existential sense.

On the other hand the causality and necessity of the cosmos are played down in eternal endlessness of chaos. Cosmic order deals with creative freedom and thanks to this freedom the intentionality of chaos obtains its ontological sense of divine existence and the cosmos is worth considering as the creation of God.

Such phenomenological approach helps us out from the problems arising not only in the history of micro- physics (concerning the principle of uncertainty in quantum theory) but also in the mega-sphere of celestial events. Philosophical – speculative – scientific – hypothetical explanation of the universe completes the biblical description of Genesis . Indeed ! they are mutually exclusive yet equal and correlative approaches to the great problem of becoming the being which drives the development of philosophical thought.

Our conception of freedom seems to be acceptable to genesis according to the Bible. The word dwelling before the centuries, hangs upon the chaos as a play and freedom and creates the world. We must take the beginning of the world through our believe in God without any analytical explanation. This religious position echoes with the phenomenological approach that the sense of being dwells beyond causality in the sphere of freedom and anticipates genesis of the world.

If chaos had an inborn intentionality of self-reflection and if this intentionality established the physical order of the cosmos, first of all it would establish the transcendental condition of arising the sense of this order. The sense of cosmic order appears to be in the area of creative uncertainty between chaos and the cosmos. It basis the physical order of the cosmos but at the same time it refers to the hidden nucleus of chaos – to the intentionality of becoming the being. Therefore there would be complicated, many-fold relation (and even divergence) between the sense of the order and the actual cosmological order and the latter (and hence the currency of natural events) could be changed and destroyed according to this hidden, cosmological sense, if it reveals the intentionality of God.

That is our phenomenological explanation of miracles of God.

Now we would like to examine more closely the hidden self – reflection of chaos leading to the cosmological order. As we mentioned elsewhere the miracle of

arising life crowns itself with emergence of human consciousness and presents the final accord with the realization of the inborn, celestial intentionality.

The cosmos arranged itself so that it can be reflected through the consciousness. The latter plays a role of a vital agent participating in the sense-forming process, which establishes first of all the forms of space and time for the celestial phenomena. As far as the consciousness is the fruit of primordial intentionality, which arranges chaos and unfolds the cosmos, we cannot consider it in the Kantian sense, as a transcendental-ideal basis of the human world; rather it would be presented in the spirit of phenomenology of life as an issue of self-interpretation of matter which shares with Logos of life thanks to the creative activity of subjective forces.

It is impossible to enter the river of Heraclitus twice but Logos of life makes possible to enter it at once. That means that although uniqueness of life is a non-periodical stream, life avoids the accidental state of chaos thanks to intentionality of Logos. Logos attaches to the life-river some periodical sense of similarity. Thanks to this sense, the unique particles of life are integrated in the one and the same stream of wave, which makes the indivisible period of time, we call it the “present time”. I can enter the river of life at once, because Logos, through the sense of similarity organizes the duration which exists and awaits me as the present time. Here, we think is acceptable our model of conjugate pairs we have worked out through the phenomenological approach; the continuity of wave and the discreteness of particles both organize the mutually exclusive, conjugate pair; they provide each other with existential sense.

Indeed, stream of life, like the river of Heraclitus exists as an interplay of waves but the continuity of wave (making the indivisible period of present time) gets the sense of being through the discontinuity of unique particles of life and vice versa – if Logos would not attach the periodical sense of similarity to the uniqueness of life, inserting the order and law in chaos, life could not exist as the unique phenomenon.

Thus, instead of network of Kantian categories, concepts and ideas, which arranges the close system of world, restricted by the metaphysical “thing in itself”, we refer to the phenomenology of life and consider genesis of the world according to the vital intentionality of the universe, which as Logos of life provides chaos with sense-forming process and connects the cosmic order with human vital consciousness and opens the creative perspective of the development of the world toward the positive uncertainty of metaphysical sphere.

Part Two

The problems arising here are worth considering in the light of “The Brief History of Time” – a brilliant cosmological inquiry by Stephen Hawking (Hawking 1999). The author deems the beginning of the universe in accord with the theory of “Big Bang”. He argues that starting point of the universe is the explosion of the super-dense mass resulting the infinite extension of the galaxies. It would be the way of

increasing the entropy – the way leading from the incipient order to disorder. Stephen Hawking asserts that the arrow of time has emerged after the explosion thanks to increasing the entropy from the order to disorder. He distinguishes three directions of this intentionality – the cosmological explosion accompanied by the extension of the galaxies (the universe is expanding rather than contracting), than the thermodynamic arrow of time – the direction of time in which disorder of entropy increases, and the psychological arrow of time – the direction in which we feel time passes and hence, we remember the past but not the future.

The author argues that life presents the act of increasing the entropy – we digest some food and turn it into an energy of life; this thermodynamic energy arises thanks to destruction of the previous order we have accepted as a food. Therefore, the emergence of life (and hence, the appearance of human consciousness) as an act of increasing the entropy, is compatible with the cosmological process of the extension of the galaxies which commenced from the explosion of the super-dense mass according to the theory of “Big Bang”. The process of contracting the universe would be accompanied by the opposite arrow of time, when the effect anticipated the cause and we could remember the future but not the past. Life and consciousness would be non-compatible with such absurd state of things. (The particular case of contracting the entropy – the crystallization of stars and planets under the forces of gravitation he considers as a divergence from the total cosmic extension which cannot change the general arrow of time).

Although “The Brief History of time” by Stephen Hawking seems to be a very significant inquiry of the world’s genesis, from the position of phenomenological philosophy it deserves some critical remarks: this work brings to light the cosmic development according to the viewpoint of physics. The author does not take into account that emergence of the sense of being anticipates and differs from the process of realization of being which manifests and unfolds itself as a cosmos. Yes, indeed, the arrow of time is the result of increasing the entropy (from the order to disorder) but we suggest, that the sense of time which anticipates the real stream of time arises thanks to Logos of life which attaches the sense of similarity to the unique, vital particles of the river of life, making indivisible, instant period of present time. This sense-forming act of the present always provides the real stream of time with intentionality from the past to the future [Logos of life makes the sense of actual time connecting the previous (past) vital particle with the next (future) one but not vice versa].

Therefore the sense of time which basis the intentionality of real time is a free phenomenon and it is independent from the general state of the universe. If the universe changed its orientation and instead of unfolding began to contract, time would keep its intentionality from the past to the future thanks to independence and resistance of the sense of time, deriving from Logos of life. Hence the existence of intentionality of time is not the argument for benefit of theory of “Big Bang” since the sense of time has been compatible to both – the unfolding and contracting states of the universe and the absurdity of the contracting state (when time passes from the future to the past) can be abolished.

The second argument for the theory of “Big Bang” is based on emergence of life. Life presents the act of increasing the entropy from the order to disorder (we digest some food and turn it into the thermodynamic energy of life). But if the physical life is compatible with unfolding state of the universe, (where the entropy also increases) the sense of life needs the contracting cosmological process. Truly, if we used our phenomenological model of the mutually exclusive, conjugate pairs, we would come to the point that life as an act of increasing the entropy would get its sense of being through the opposite, contracting state of the universe where the entropy decreased. Only in this contracting cosmological state the deterministic factors of life are devaluated, life appears to be a free phenomenon and thanks to this freedom life gets its existential sense. Emergence of physical life which derives from the Logos of life shows that both – the unfolding and contracting states of the universe are possible and thus, the theory of “Big Bang” does not correspond with genesis of the world.

The explosion of the super-dense mass resulting in extension of the galaxies is the explanation of the very beginning of the universe through the concepts of causality and necessity. However, if time presented the result of explosion, causality, basing on the arrow of time also would emanate after the Big bang and it could not embrace the beginning of this process. Hence we cannot regard the starting point of the explosion as a primary cause of the world. On the other hand, the chain of the cause and effect is limitless and it needs to be spread endlessly. Therefore, the question arises concerning the cause of the incipient explosion, which needs as for it the previous cause and so on...

Phenomenological model of decreasing the entropy from chaos to the cosmos, refers to the freedom and contingency as a conditions of arising the sense of the world. The vital word dwelt in chaos as the intentionality of self-reflection. There were neither time nor causality in Brownian movement of primordial chaos (so we could not set a question concerning the previous causal state of chaos.) But infinite chaos was not the senseless. It was Brownian movement of the celestial particles with intentionality of self –reflection. Therefore there was a probability that some part of chaos accidentally would arrange itself and could establish the cosmos. The existence of the sense of chaos made the possibility of accidental arising of cosmos. Thus the sense and the hidden intentionality of chaos both were the one and the same phenomena.

Openness of the cosmos toward the metaphysical sphere of chaos means that both- the unfolding and contracting states of the galaxies are possible but the intentionality of time, from the past to the future must be kept in both cases according to primordial Logos of life. The destruction of the arrow of time and changing its orientation from the future to the past means that our observation goes beyond the cosmos and deals with illusive celestial order that is really disorder of chaos.

Theory of relativity seems to avoid such an illusive celestial order. Because of definite velocity of light the observation of any cosmic event needs some periodical interval. During this time we can see the celestial event which has already passed and does not exist now. Hence we can only perceive the past event and the present time is always elusive for our observation. Einstein avoids this destruction of the

present time asserting that absolute simultaneity does not exist and thus we cannot match the time of observation with the time of a cosmic event (It is the result of relativity of time). All the mathematical equations and principles of the theory of relativity keep the intentionality of time from the past to the future thanks to the absolute constant of the velocity of light.

Indeed, the velocity of light could not be exceeded. Otherwise, according to the formulas of the theory, time would pass from the future to the past, the effect would anticipate the cause and we could fall in a senseless state of the not- being.

However, recently, in new experiment of elementary particles (Nationali Laboratori del Gran Sasso 2011) the velocity of light has been exceeded; the speed of neutrino surpassed the spreading of light yet the time and the causal link have kept their normal intentionality from the past to the future. What does it mean? It means that physical quantity (namely the velocity of light) cannot serve as an absolute basic constant for the theory. We think that the new limit of maximal speed also would be surpassed.

The constant of the velocity of light supported the normal intentionality of time In the theory of relativity. But this constant has been exceeded. We interpret this fact as devaluation of absoluteness of all physical – measurable constants. Even if we assumed that there had been an error in OPERA experiment (Nationali Laboratori del Gran Sasso 2011) and the new datum of neutrino speed was not reliable, the very fact of arising this experiment would show that the absolute value of velocity of light could be doubtful, it was useful only in sphere of cosmic physical reality and we should find the new constant for phenomenological description of the universe.

Positive intentionality of time appears to play a role of this absolute constant.

Therefore, instead of a physical phenomenon now we should find some metaphysical basis for saving this arrow of time and for keeping the sense of simultaneity.

In the physical reality of space absolute simultaneity does not exist. It is not a technical problem of identification of the different moments of time; simultaneity is impossible objectively, because the cosmos presents the creation of intentionality of life which penetrates all the universe and inserts the uniqueness in the world; but on the other hand simultaneity as a sense of similarity is admissible thanks to Logos of life which makes the time step we call the present time. Therefore, we can match the previous state of a cosmic event with a moment of observation if both moments belong to the one and the same period of the present time-slice. The latter has some duration which can embrace the different points of the event -perception and we can enter the cosmic river at once. To save the arrow of time, we need not introduce some pseudo- absolute physical constants. Although time is relative (it depends on a reference system) intentionality of time is unchangeable and absolute since it has referred to the sense of present time arising thanks to Logos of life, through the connection of the past and the future (but not vice versa).

The doctrine of positive arrow of time is based on the creative action of Logos of life which always makes the quantum of the present through the sequence of the past and the future.

However this doctrine seemed to be broken in quantum physics, namely in spatio-temporal interpretation of quantum theory by Richard F. Feynman (Gardner 1969).

Feynman formulated mathematical description of quantum theory so that the anti-particle could be considered to follow the negative arrow of time from the future toward the past. He focused on the effect of arising the couple – electron (particle) and positron (anti-particle i.e. electron with positive charge). In this effect the positron was a short-life particle. It would immediately clash with other electron. Both mutually annihilated themselves resulting the emanation of Gamma-rays.

Instead of two particles (electron and positron) with normal intentionality of time, Feynman offered to consider only one particle – electron moving by turns in alternative streams of time. Positron could be at one with electron if the latter changed its intentionality from the future toward the past. Electron would keep its negative charge but thanks to opposite temporal direction eventually we would receive the positive energy of positron. Instead of trajectories of electron and positron Feynman considers one tangled trajectory of electron.

Thus in this model, time was reversible. Quantum events were described with the precedent of negative intentionality of time.

Phenomenology of quantum physics offers different interpretation of this paradoxical effect. Our model of conjugate couples considered above, shows that we cannot reduce the coexistence of two particles (electron and positron) to the existence of one particle (electron) which would move by turns in opposite streams of time. Electron cannot obtain the physical (existential) sense without conjugate relation to its anti-particle. If we removed the positron from the picture of micro-objects electron would lose its sense of being and description would turn into the formal model of imaginary phenomena.

The short life of the positron, because of the external collision reveals the presence of other electrons surrounding this individual effect. After the positron's collapse electron keeps its physical sense through the interaction with other electrons making the stream of discrete particles, which, according to the principle of uncertainty would behave itself as a continual wave.

Thus the short life period of anti-particle is truly the period of becoming the existential (physical) sense of the particle. This duration coincides with the duration of the present moment when micro-object enters the existential river of time and we can use it as a unit of time in the micro-world.

Quantum principle of uncertainty determines the relation between the elements of this conjugate (particle-antiparticle) couple: more the first element acquires the physical sense, more the second one loses it and vice versa. Positive arrow of time is essential condition of such an effect of arising the physical sense.

It is our conviction to draw an analogy between wave-particle duality of quantum effects and cosmic phenomena. Therefore, we can replace in Feynman's picture the pair of particle-antiparticle (electron-positron) by the couple of star and "Black hole". If star emitted the beams "Black hole" as a celestial body with superdense mass (Hawking 1999), would absorb the light and in this respect we could

consider them as a conjugate couple of particle-antiparticle. The appearance of “Black hole” with existence of star supports the positive arrow of time in cosmos. If “Black hole”, like a Feinman’s positron would be considered as a shining star, the positive temporal intentionality would change in negative time and star, turning into illusive phenomenon, would lose its physical sense.

The existence of Black holes provides stars with sense of being and keeps the normal intentionality of time throughout the cosmos.

Thus, we suggest that wave-particle duality goes beyond quantum physics and embraces all the universe. If we considered this duality according to our model of conjugate couples, we could make an argument against the theory of “Big Bang”.

Theory of “Big bang” is based on the experimental data of redshift in spectrum of cosmic rays, which points out the expansion of distance between the galaxies. Yet this permanent expansion of the galaxies is not the sufficient argument for the suggestion about the incipient explosion of super-dense mass.

Phenomenology of quantum physics is worth offering another explanation (Dolidze 2002). We mentioned elsewhere that quantum particle would gain the physical sense if it behaved itself as a continual wave. Hence we can explain the extension of galaxies without referring to the starting explosion.

Starry order, we call cosmos has been formed under the forces of gravitation as a discrete system of celestial particles. According to our model of conjugate couples, this system could not gain the physical sense if it did not behave itself as a quantum wave resulting the endless expansion and dispersion of the system. Therefore cosmic galaxies as a parts of this system are in state of permanent expansion striving to turn into the continual wave which would be spread endlessly. Otherwise the cosmos, the discrete system of celestial bodies would lose its sense of being.

In phenomenological conception of quantum physics (Dolidze 2002), wave-particle duality derives from the quantum-measurement situation, which was not exhausted with objective physical interactions. It was penetrated with subjectivity since it had presented the situation of genesis the physical sense of quantum system.

Accordingly, in space, wave-particle celestial duality derives from the state of the universe which is penetrated with subjective forces of appearance the existential sense of cosmos. We call it the inborn intentionality of life which always has referred to the positive arrow of time.

This expansion of quantum subjectivity throughout of cosmos, inspires us to continue our scientific inquiry in the spirit of phenomenology of life, taking into account the subjective origin and vital genesis of the world according to Bible.

On the background of wave-particle duality, our analogy between quantum physics and cosmos supports the doctrine of positive time and makes clear that temporal intentionality is irreversible for all the physical reality. Negative arrow of time involves us in a dreamy kingdom of imaginary things leading to chaos.

Hence it is possible to speak about the comprehensible distance and limits of the cosmic world. It would be the celestial sphere where time and causality tend to keep

their intentionality. If we observed a cosmic event which could not be identified with actual time of observation and leads us to the past of the event (accordingly, the causal link changes its orientation from the effect to the cause), that would mean that the intentionality of time is ruined, observation goes beyond the cosmos and the visual event might be involved in disorder of chaos.

The inseparable wholeness of the present time-slice roots in the subjective and metaphysical forces of Logos of life. Human consciousness, in the daily routine, through the awareness of self makes the integrity of present time-slice, in which it identifies the perception with its external object. That is the basis for cognition of the mundane world. To establish the present time-slice for the cosmic observation we also appeal to the subjective forces of life-logos resulting the psychological influence of the celestial events on the spiritual state of the self. Here we meet some uncertainty since the subjective influence of Logos, making the cosmic present time cannot be objectified and measured. Although it has some duration (which embraces the moments of the past and the future), this duration cannot be established objectively, since it has subjective sense of simultaneity under the sign of the present. For instance, the influence of constellation on our psychological self is considered to be instant and if we restricted the cosmic speed by the velocity of light (or by the other measurable constant) this sense of simultaneity would be devaluated and the integrity of the present would disintegrate and fall to pieces of the past and the future. That would ruin the temporal intentionality and hence we would lose the existence of time. Therefore Einstein rejected the idea of simultaneity, excluded the instant influence of subjective forces and believed in absolute cognoscibility of space. But this position eventually led him to the close and completely objective system of celestial interactions without positive uncertainty of the creative development.

In the astrologer's consideration, the most important part of the sky is the sign of Zodiac which has emerged at the moment of the child's birth. That makes the individual horoscope of the man and establishes his psychological nature. Instead of Zodiac, astrophysics gets activity of sun to determine our psychological self. In both cases, at the moment of child's birth the influence of constellation (or influence of the sun) through the position of the earth (around the sun), is instantaneous although it has some duration. Indeed, to keep the actual relation between the cosmic state of stars and the moment of birth, this influence should have the sense of momentary interaction, but on the other hand it has some duration. This duration plays a role of an individual temporal interval for each person. Therefore, "momentary duration" of starry influence is uncontrollable, immeasurable; it cannot establish itself objectively. We think that it is the period of interaction of the cosmic subjective forces rooting in primordial Logos of life. It coincides with the cosmic present time-slice which is given from the heaven to the individual as a standard of his psychological time.

According to this standard the individual can enter the river of life at once and identify his perception with an external world. Thanks to this standard he keeps the intentionality of time with a normal causal link, not only in his daily routine but

throughout of cosmic interactions, where he participates as a life. It is an individual standard of the present time-slice which determines his subjective self, since the activity of sun or the position of earth toward the sign of Zodiac, both are unique at the moment and place of his birth. Therefore every individual quantizes time subjectively, on his own way keeping the idea of simultaneity through the integrity of present period and following in general the intentionality of time from the past toward the future.

It is very important to consider the cosmic order in accord with individualization of life and subjective activity of human consciousness. The idea of simultaneity supports our belief that the every physical speed can be exceeded in a new cosmic experiment. Therefore, it would not be senseless to speak about a “metaphysical duration” of the present moment. That is the unique gift of heaven which helps us to enter the river of life. In the sphere of subjective cosmic forces we can save the arrow of time and keep the causality thanks to the individual standard of time. If we examined closely the influence of constellation on our psychological self we would determine the standard of our time. Beyond the cosmic boundaries the wave of present time disintegrates, the self cannot enter the vital cosmic river and the sense of simultaneity (the accordance between the celestial event and the state of the self) would be lost and chaos absorbs everything.

Neither astrophysics nor astrology can establish the metaphysical sense of time. The thing is that a horoscope, determining an individual standard of present time derives from the natural position of stars. According to our model of conjugate pairs, a natural cosmological state needs some supernatural event which would create the freedom for the metaphysical sense of time to arise. Therefore we need some supernatural phenomenon through which Logos of life makes the sense of “metaphysical duration” of the present. This phenomenon would be individual and at the same time general.

The Christmas star arising as a mark of the birth of Messiah was the brilliant evidence of miraculous accordance between the celestial and terrestrial events. At the moment of incarnation of God the basic present time-slice was established, which had derived from the incipient intentionality of life. The subjective cosmic force provides the Christmas star and the birth of Messiah with a momentary connection. Individual standard of the present time is reducible to this basic present time and hence the grace of God as the positive energy of entering the cosmic river is accessible to our mundane world.

An individual self is determined by the standard of the present time. We receive it as a cosmic gift through the momentary contact with the state of constellation on our birth day. That is a very significant moment of becoming a being when we enter the river – life at once. But this cosmic influence determines our life under the sign of destiny and we need God’s assistance to turn our destiny into freedom. That would be possible, if we connected the individual standard of time with the basic present time arising at the moment of incarnation of God.

Astronomers have made several attempts to link the Christmas star to the unusual astronomical events such as the conjunction of Jupiter and Saturn or arising of the

supernova nearby Andromeda nebulous. Some astrophysics argue that at that moment Jupiter and Saturn were in a triple conjunction in the constellation Pisces. According to another modern version the birth of Christ was accompanied by the supernova occurring in the nearby Andromeda galaxy. We suggest that In both cases there were some supernatural astronomical phenomena deriving from the primeval intentionality of life.

It is significant to connect an individual standard of time with the basic present time-slice. The former appears to be the issue of natural cosmic influence restricting the man by the necessity, the latter has a supernatural origin and helps him out of the psychological destiny. Therefore, the physical birth must be supported by the birth from the spirit.

“Truly, truly I say to you, unless one is born of water and Spirit, he cannot enter into the Kingdom of God” (John).

We can interpret the words of Jesus Christ as the communion of individual standard time with the metaphysical integrity of the present which was realized through the incarnation of God. Here comes into effect our model of conjugate pairs: both, the natural individual time and the supernatural present time both provide each other with the sense of being. The latter creates the freedom within the natural necessity that is the condition for the existential sense to arise.

The Resurrection of Christ certainly presents a significant point in the history of the world. This miracle keeps always the sense of present. Christ tends to arise from death permanently and every year the miracle has been accompanied by an emergence of the divine fire on the wall of Christ’s grave. That means that the terrestrial miracle (divine fire) might be in interaction with some supernatural cosmic phenomenon and this interaction has the sense of a momentary influence.

The Resurrection of Christ establishes a coincidence and simultaneity between the celestial and terrestrial phenomena and the distance of this momentary interaction corresponds to the basic interval of the present period where the intentionality of time is maintained. Beyond this distance the supernatural event would not keep the sense of time, intentionality would be ruined and we would not be able to speak about the cosmic order. However, this distance is not a measurable object since it has a subjective origin. Eventually it derives from the interaction of the individual self with God who is the subject. But our phenomenological approach revealed that this subjective relation has an existential sense and thus we can speak about the distance between the supernatural and terrestrial phenomena . We can restrict the sphere of cosmos by this distance which corresponds to the step of the present time deriving from the Resurrection of Christ. This sphere of cosmos dwells under the protection of God and the starry order cannot be destroyed unless life and consciousness both are ruined on the earth. As far as the heavenly order is the creation of God (who keeps the intentionality of time in celestial interactions), destruction of human consciousness implies devaluation of faith throughout the world. Therefore the belief in God is significant not only to save the soul but to protect our planet from cosmic disasters.

Thus, to determine and comprehend the area of cosmos we can use the mystical experience of mankind.

Astrophysics consider the cosmos as an objective reality of celestial events and finds the non-comprehensible distance or radius of the cosmic sphere (Guth 1997).

Astrology interprets the upper-land subjectively through mythological signs and psychological destiny and it is unable to resolve this problem.

We think that transcendental phenomenology of life, basing on the vital integrity of subject and object and appealing to the creative light of God can speak about the existence of the comprehensible border of cosmos. If our scientific observation and calculation went beyond these boundaries, the intentionality of time would collapse, we could deal with an illusive order of the celestial events that means the disorder and darkness of infinite chaos.

Now, to conclude, we would like to observe the landscape of our phenomenological approach in general. The centuries-old philosophical question of the beginning of the world appears to have some definite solution from the position of phenomenology of life. Infinite chaos has the intentionality of self-reflection. That is the potential energy of making the sense of being. Therefore, chaos gives birth to the cosmos which has the heterogeneous, polyphonic structure. It presents the coexistence of the physical reality of celestial bodies with the transcendental sphere of ideas and sense-forming acts. Intentionality of life, as the vital word of God makes first of all the sense of being and then the physical reality of beings we call the cosmos. This divine force of creation is responsible for the order of space and for the emergence of life and for the development of human consciousness. Life and consciousness are both the cornerstones of unfolding the cosmos in the realization of the inborn idea of self-reflection. That is the reason that the cosmos has an intelligible structure. The analogy between quantum physics and phenomenological cosmology spreads the wave-particle duality in the sphere of cosmos and explains the expansion of galaxies without referring to the theory of "Big Bang". According to the positive intentionality of time, It shows the genesis of the existential sense in the conjugate relations of stars and the Black holes.

The universe is far to be exhausted with the physical interactions of celestial bodies and enchants us with a spiritual spell of subjective forces, speculative ideas and the sense – forming acts. It is not accidental that the metaphysical uncertainty of an upper – land serves as a field of hypothesis, conceptions, theories and on the other hand, it might be turned into the sphere of my imagination, fantasy and dreams. The cosmos is not incredibly big. It is great but not as matchlessly great as compared to human consciousness. Thanks to the Revelation of Christ, it is possible to speak about the comprehensible area and boundaries of space, although the cosmos is not a close system of matter. Openness of cosmos means that cosmic matter gets the sense of being beyond itself in the transcendental sphere of ideas. The incarnation of God revealed this creative aspect of Logos of life. Appearance of Christ with the arising Christmas star and the Resurrection of God present significant turning points from the natural necessity to the supernatural freedom of life, toward the creative perspective of unfolding the world. It is the world of my creativity and my faith. It

inspires my thought to go beyond the physical reality, into the very heart of the truth and life; into the hidden interplay of the subjective forces with the celestial matter. Such theological standpoint is compatible with scientific picture of the universe on the basis of analogy between phenomenology of quantum physics and modern cosmology. Considering the wave-particle duality as a condition of the genesis of existential sense, quantum-phenomenological approach takes into account the transcendental sphere of sense-forming acts as a background of metaphysical openness of space in which we live.

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