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Physical-philosophical essay.

Do not make laugh Lord God ... and Einstein.

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ABSTRACT

At the foundation of Creation are the Three Great Principles: Causality, Temporality and Reasonableness.

The unity of the evolutionary movement of the World at all levels of its organization ensures the principle of causality; the direction of movement (from out the past to the future) - the passage of time - the principle of temporality; orderliness - the principle of "pre-established harmony" (Leibniz), otherwise, the principle of reasonableness.

The world is tied together by movement.

Unified route of evolution: from cause to effect; from fluctuation to relaxation.

The potency for movement (energy) on all levels of the Universe is generated as a result of the emergence of disequilibrium of the initial substance, uniformity and symmetry breaking. Evolution has a single path: the cause - the fluctuation that generates disequilibrium (tension, potency, energy ...) and consequence - the relaxation into the equilibrium state generating the forces and the arrow of time ... Everything in this world, all processes, including the course of time itself, work according to this scheme.

At the same time, at all levels of the organization of the Universe, the principle of the (most!) least action acts - through rotation: from the rotation of elementary particles to spiral galaxies and "black holes". Rotation is the main strategic "cunning" (wisdom) in the mechanism of nature.

The source of the driving force (energy) of the entire world process is the vortex motion of the Universe as a whole and all its parts. The universe is a whirlwind-tornado. Accelerations of various kinds, generated by rotation, induce in the elements of the Universe (from elementary particles to galaxies) the property of inertia or mass (of different sign), weight, gravity, provide the connectedness of the world and its evolutionary advancement. Rotation slows down. Spinning stops - the world will fall apart.

In all cases, when it comes to the mass of bodies in the Universe (inertial or gravitational, or another ...), we are dealing with the phenomenon of one nature, namely, with a certain form of translation and conservation of energy.

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Proceeding from this, “fabrications” of the type of “equivalence principle” underlying the general theory of relativity should be considered redundant. The physical essence (relevance) of the so-called "space-time continuum" is enclosed in the properties of the field of inertia.

The state of material bodies in space, the trajectory of their motion in time dictates a one single inertia field. By gaining through acceleration and inertia, the original chaotic energy became matter, the spiritual world (Divine plan, Logos, Word, Thought ...) became material.

Everything: we and the world around us are the effect of time.

All processes and objects of the material world have inertia in respect to the course of time, exist and evolve due to inertia.

The movement of the world in time, marked by the arrow of time, presupposes the presence of an initial imbalance of a special, “chronic” energy - the potential for movement in time and, consequently, the action of the law of conservation of energy of time.

Time is in mass, in organized energy. The destruction of the natural order is associated with the return of time into the nature.

The Noether theorem, which asserts the close connection between energy and time, should work in the opposite direction. And this means that any artificially organized (and therefore unnatural) "release" of energy (whether burning a single match or an atomic bomb explosion) must be accompanied by a return of time into nature.

The world time is the absolute inertial frame of reference of our entire Universe. And namely the time is the that very quantum observer who continuously carries out the reduction of wave functions in the quantum mechanics and which the “quantum mechanics” so unsuccessfully are searching for.

Life and evolution - the effect of acceleration in the ISO, associated with the course of world time. The phenomenon of "life" - the every hourly struggle for time! In order to live, we must continuously borrow energy from the Universe: we change energy in exchange for time, and we live while we waste energy.

The sacred meaning of the act of the Creation of the World is to be seen not in destruction, but in creation-in the embodiment (materialization) of the Logos (of the Law, Plan, Word ...) of the Creator.

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Foreword.

Russian Academician **Lev Borisovich Okun** in a very interesting and useful study which has been presented in UFN (178, 5, May 2008.) under titled: «**Einstein's formula: $E_0 = mc^2$. Not the Lord laughing?**» [1] by comparing some of Einstein's views in historical perspective tried to clarify and point out errors inherent as to Einstein so and to his followers - of some internationally recognized experts, physicists, - in part understanding the nature and interpretation of mass as one of the most important physical quantities.

Academician **LB Okun** outlined the purpose of their work as follows: "Only few physicists - experts in the field of elementary particle physics - know that the true formula of Einstein is $E_0 = mc^2$, where E_0 - energy contained in the body at rest, and that **the body mass does not depend on the speed with which it moves** and, therefore, is not dependent on its kinetic energy (italicized - E.F)". And what in the STR "the energy and momentum of a freely moving body connected by ratio $E^2 - \mathbf{p}^2c^2 = m^2c^4$ where m - mass of the body." And the fact that this formula is not compatible with $E = mc^2$, but is compatible with $E_0 = mc^2$, as E_0 - the value of E at $\mathbf{p} = 0$).

In the writings and utterances of the recognized genius he discloses what do not defies to logic explanation. And it is not the simple negligence which could to afford himself a recognized scholar. It is much more serious. Comes to mind a sad recognition of Einstein himself which he expressed in the sunset of his life about which does not mention the author of the essay: "**You imagine that I regard my life's work with calm satisfaction. But a close look yields a completely different picture. I am not convinced of the certainty of a simple concept, and I am uncertain as to whether I was even on the right track.**" / Einstein. Letter to Solovine, 28.3.49 [2].

Dear scientist did a good and need job, albeit with some delay. But as they say, better late than never. However, unfortunately, the scientist did not answer one very important question which, I think, wandered in the head of everyone who read this work, namely, how can to explain such frivolous behavior of such venerable scholar in such serious matters? We did not hear this from the author of this review. Mr. Academician has expended many efforts of to soften unpleasant impression from it all. And author, in general, has did it successfully, but as I already said, the questions and dissatisfaction have remained...

The answer is simple: Einstein simply was not sure and doubted in those things which were discussed. I cannot judge how are true amendments in understanding the nature and the properties of the mass, about which the author himself says (rank is not allow!), but I shall express their views on the designated topic. Judge for yourself.

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Introduction

***"Nature is very simple that this contradicts-must be rejected."
/ MV Lomonosov /***

***"Einstein's views are a philosophical conviction that cannot be proved or disproved by physical arguments. The only thing that can be done in terms of objecting to this view is to formulate another concept of reality" [3].
/ Max Born/.***

***"A new theory is a child of time, not of authority."
/Francis Bacon/.***

Ingenious **Newton**, "by standing on the shoulders of great predecessors," saw in nature two fundamental properties: inertia and gravity, and formalized his observations in the form of laws. How many years have passed, and these laws remain, in general, unshakable. But what is puzzling is that in two physically different laws the scientist had introduced the same concept of mass (designated by one symbol m), making it responsible for completely different properties (qualities) of matter: in one case, inertia, in the other, gravitation. It is known that until the end of his life Newton was not satisfied with this, and sought an answer to the question, what is mass, and what is the difference of its properties in these two hypostases.

"This law has been called" the greatest generalization achieved by the human mind. " His formulation is simple: two bodies act on each other with a force that is inversely proportional to the square of the distance between them and is directly proportional to the product of their masses, or, in mathematical terms, $F = G (mm'/r^2)$, where G is the gravitational constant. From this simple formula follows a lot of very nontrivial conclusions. But there is no answer to the fundamental question: WHY and WHERE the force of gravity acts. "

/I. V. Leskov/.

"It is inconceivable that inanimate crude matter could without the mediation of anything intangible, act and influence other matter without mutual contact, as it should have been if gravitation in the sense of Epicurus was essential and innate in matter. To assume that gravity is an essential, inseparable and innate property of matter, so that the body can act on the other body at any distance in empty space, without mediating anything transmitting action and force, this, in my opinion, is such absurdity that is inconceivable either for who knows enough to understand philosophical subjects. Gravitation should be caused by an agent that is constantly acting according to certain laws. Is this agent is tangible or intangible, I granted this to decide to my readers "].

/From a letter from Newton to Dr. Bentley, the author of lectures on the theme "The refutation of atheism" on February 25, 1693. [4]./

This ambiguity with the mass did not suit Einstein either, but he did not dare to

break it, but only confined himself to a half-measure - he started talking about the principle of equivalence, moreover, for the sake of importance, in two of its varieties - weak and strong, and developed around it a whole theory.

Quantum mechanics, as is known, provides an explanation for every taste, only here the number and variety of beautiful metaphors while are growing, but the line of truth of our knowledge, like the horizon line, does not approach.

But the answer is very simple. He seen by the genius **M.V. Lomonosov**: "**Gravitation is a derivative motion and, consequently, depends on another moving body.**" That's all. How could be to pass by this? Unclear. And **Lomonosov** gave several useful tips on this matter:

- "**The cause of heat is the internal rotational motion of the bound matter.**"
- "**... The body, which excites to the movement another body by the impetus, loses as much its movement as it gives away this movement to another body**"

Do you want a more recent judgment? Please.

A. Linde: The energy of matter in the universe is compensated by the energy of the gravitational interaction, and their total sum is zero. (The volume of the expanding universe is increasing, the pressure is positive, so the energy is reduced.) $E = - p dV$).

In the development of the indicated directions, for better understanding of them, we will make a small, however, purposeful excursion into classical mechanics. And then, from the position of today, we will try to look for an answer to a question that did not give rest to Newton until the last days of his life: what is the source of gravitation and inertia?

For us, earthlings, gravity is by the most intimate and inseparable (after mother-in-law, of course) "relative". Scientific understanding of this phenomenon, as is commonly believed, started since **Galileo** in the early 17th century when he took in hands the meter, the chronometer and a telescope and has discovered a fundamental principle of nature - the principle of relativity. The state of Uniform and rectilinear motion is indistinguishable from state of rest. Constant movement of the body in a straight direction is the result of absence of force. In the absence of force the body velocity is constant. The force applied to the body forces a body to move faster. And this already meant: **strength is associated with acceleration (!)**, and not with speed (as **Aristotle** previously believed).

Descarte in the "*Principles of Philosophy*" explained that objects are resisting to the change of their state of motion.: an object at rest will remain stationary until someone or something does not force him to move; an object moving at a constant speed along straight line, will always move thus until someone or something does not force him to change the speed or wind down with a straight line.

But what really mean very concepts "immobility" or "motion at a constant speed in a straight line?" From whose point of view? If the speed is not constant, is then with respect to what, or from whose point of view it is not constant? These questions remained unanswered.

Newton gave the answer: the object is to truly motionless if it is stationary with respect to the absolute space. Object really moving, if it moves with respect to absolute space. And he concluded: the object really accelerated when it is accelerated with respect to the absolute space.

In the formulation of **Newton**: *"Absolute space, in its own nature, without regard to anything whatsoever external, remains always similar and immovable."*

Absoluteness in the theory of Newton is peculiar to the property of the time also. "the time is itself and in its own nature, without relation to anything external, flows uniformly."

Leibniz's space it's just a language to express the mutual arrangement of different objects. And without these things, ie without content, as the alphabet without the letters, the space has no independent existence. Leibniz said: *"I admit that there is a difference between the true absolute motion of the body and by simple relative change its position relative to the other body."*

So the lack of the opportunities and ways to determine the position of the bodies in the absolute sense induces us to describe the position of one body with respect to other material bodies to introduce conditional, relative frame of reference.

Max tried to introduce certainty... The force which you feel being in the car in the moment accelerating or decelerating of the train, or in the elevator when it accelerates its movement, as follows from his argument, is the result of the collective impact of the all matter of the universe. **You feel the motion only when accelerating relative to the average distribution of matter present in space. Unlike of the abstract Newtonian system of reference (absolute space), the system of reference which has offered Mach, may see every - this is the substance which is distributed in the space. But question is remained: to what to bind the movement?**

Variiegated picture of the mutual influence of terrestrial and celestial bodies, which manifests itself in the attraction and the acceleration and depends on the spatial and temporal coordinates, led Lorentz, Poincare, and then Minkowski and Einstein's to the thought about the geometric (per se "conventional" - Poincare) association of space and time.

Space and time together in **Einstein's** special relativity are providing an almost Newtonian "scene" of the universe, but only as an indivisible "continuum" of space-time, where the absolute time and absolute space by themselves do not exist. But how be with filling of space, about which was talking **Leibniz**, or with the universal mass "which has distributed throughout the cosmos" about which was talking **Max**? Ten years it took for **Einstein** to logically tie it all together.

In **Einstein's** general theory of relativity the gravity and the acceleration are as two sides of the same coin. The force of gravity and the force which you are feeling under action of the acceleration, are not equal - decided scientist - but equivalent. You feel force of gravity only when you are resisting it. Conversely, when you are do not resisting to gravity, you do not feel it. If during your free fall on you does not act outside forces (eg air resistance), you feel himself as if you are in the float freely in space, only here in the relation of free-floating man nobody does not say that he accelerating.

So first in the special theory of relativity has appeared the absolute space-time, and then in the general theory of relativity - the gravitational field. Einstein, in the words of John Wheeler, saw the world where *"mass manages by the space, speaking it how to distort, and the space manages by the mass, telling her how to move."*...

But here's the curious thing, by setting the standard for the state of rest, and in particular, establishing a frame of reference for determining the acceleration, none of the above scientists did not attempt to explain why and how the physical bodies are resisting to acceleration. And more precisely, none of them tried to establish the

nature of the mechanism by which the bodies has acquired the property resist acceleration.

It was only in the second half of the 20th century British scientist **Peter Higgs** tried to answer this question. His idea is simple. There are quarks, electrons, have bodies made up of them, and there is "ocean" Higgs with a really magical properties, into which all these particles and bodies are shipped. Thus, Higgs idea is that the universe is permeated by an invisible field, passing through which the elementary particles such as quarks and electrons are acquiring subatomic "bosons", and thereby mass, and others - no. Mystical Higgs boson is responsible for mass in the universe.

In the past, we had no a problem with it. We have ascribed the property of gravity and inertia to mass itself and were speaking that the mass is an intrinsic property of the body itself, which determines the body's ability to resist to the change in position, speed and direction of movement, and did not think about its origin. Higgs theory argues that elementary particles acquire mass (weight, inertia) as a result of their interaction with the ubiquitous ocean of Higgs. And that's the point!? On the search for and identification of the "God particle" are directed efforts of the experimentators and large funds. Doubtful success in this affair hurried up fasten by the Nobel Prize. To this question we shall return later.

For completeness of the picture, it should mention one original theory. Today, the Dutch scientist **Erik Verlinde** explains the emergence of gravity the action of the "entropic force" and the changing of information related to the movement of material bodies and their ordering. Entropic nature of gravity, according to the author, indicates that mass is a form of preservation of the ordered energy or keeping information. ***"We have suppose for a long time that the gravity does not exist, - said Dr. Verlinde. - It's time to shout about it. "***

The reduction of the wave function (R-procedure) of quantum mechanics may be connected with the effect of gravity - this thought timidly has expressed **R. Penrose**.

And such judgments are many and different.

1. "Pedigree" of the mass.

Nature has a wonderful property, ie by the ability of physical bodies under certain conditions maintain, as they say, "a state of rest or the uniform rectilinear motion," that since the time of Galileo-Newton called inertia. Physical bodies possess this property in the different degrees. The scientists given it the name of mass, have designated by the letter m in the formulas and this essence, hidden from our eyes, have attributed the property of inertia. But is and the other mass, which, as considered, is related namely to the gravitation of bodies to each other, but not with the movement, its have named "heavy" though it also was denoted by the same letter m . And on the reason that this property (inertia) as if not, when we only are looking at the body, but do not take action, but when you try to accelerate the body, something prevents and reacts ..., the force of inertia has called "seeming". Force of gravity also invisibly present when it has an equivalent counteraction (support) and occurs really when this support has removed and the gravitating body is in motion with acceleration g .

Who, however, thought about why inertia manifests itself only when we try to budge the body or to lift it, i.e. in the presence of any acceleration of its movement (translational or rotational), and affects on the effort, which we must to apply to the body in order to change its position or condition in space and time. The proportionality factor between the force applied to the body and between the acceleration of the body is designated as a mass m in the expression: $F = ma$. The

same characteristics of the body is present in the analytical expression for the centripetal and centrifugal force: $F_{c.p.} = -F_{c.f.} = mv^2/R$, and for the potential energy: $U = mgh$, and for kinetic energy: $T = mv^2/2$ energy, and also in the equations for ideal and real gases, etc.

The notion of mass in science is ambiguous. In addition to the heavy and inertial mass is used the concept of mass of rest and the relativistic mass.. And if you take into account not only the magnitude of the forces acting on the body, but also its relative direction, it is proposed to consider also conception of longitudinal and transverse mass, and, quite recently, also of negative and imaginary!?

One thing is clear, the parameter (property, measure) of mass which denoted in formulas by the letter m , characterizes an invisible universal physical characteristic of our material world, which manifests itself at different levels of its organization. And, as I believe just in the ability to feel a connection with the rest of the world itself and consists the deep essence of properties of mass. And this connection is shown and responds to any change the status quo. Satisfactorily whether the formulas invented by people, characterize this connectedness - is another matter. Objectively, by the indicator of this connectedness actually is the resistance to an accelerated motion (and in the sense of inertia, and in the sense of gravity). So this connectedness displays itself at all levels of organization of matter, we just call it in different ways.

Inertia in our world is revealed in everything. For example:

In mechanics:

- *Upon closer examination, Newton's three laws about the inertia:*

Newton's first law says that if on the body does not act an external force, the body maintain a state of rest or uniform, rectilinear motion (inertia).

Second law says that the force (inertia) in the body appears whenever we try to change (speed up) its state (position).

$F = ma$ - the external force which acts on the body, reports the body the acceleration. Acceleration is the result of action of the external force.

$P = mg$ - the gravitational force of attraction (gravity) reports the body the acceleration;

Third law says that on every action there is an equal and opposite counteraction (force of inertia).

- *Centrifugal force, Coriolis force - is also inertia. Overload on the centrifuge, the artificial weightlessness on simulators is achieved by the only way - by acceleration.*
- *Unknown hitherto the natural mechanism of the limitation of the speed for all material bodies in our world (the threshold of "C"), I believe, should include a mechanism for inertia ..*
- *And finally, where you saw the state of rest in our dynamic world?*
- *By virtue of integrity (holism) of our world the accelerated recession of galaxies (whatever the reason) should influence all ecumenical events, ranging from the motion of the nuclei (of the spins), of molecules, tornadoes and up to the star systems and galaxies ...*

- *In electromagnetism:*

- *EMF of self-induction and mutual induction ..*

- *The phenomenon of magnetism is a manifestation of inertia of the motion of charges in the medium and nothing more...*

- *«Bremsstrahlung». As is known, the source of e. m. waves is rapid moving electrically charged particles or time-varying electric currents. It seems that there is an exception and this is the radiation of Cherenkov - the phenomenon where*

electromagnetic waves are generated by the charged particles moving in the material uniformly with velocity V , however, exceeding the speed of light C / n in this substance, where n - refractive index in this material. But and here we see how the braking of charged particles in the substance displays the inertia of the particles, as a result the inertia of the particles give births of a wave - the so-called bremsstrahlung! And in this issue should be an analogy with gravity charges and waves!?

All types of radiation (including gravitational waves, if they exist in nature?), can be safely attributed to the category of "Bremsstrahlung", because they are all associated with acceleration, because if there is radiation, should be and the reaction of the emitter, ie the response induced by the acceleration carries into self the property of the inertial mass. Simply put, the source of such radiation is the same inertia which present in the body, and then " is splashed out from the body ".

In optics:

Dispersion, diffraction, Doppler effect, the redshift ...

In nuclear physics:

- The speed limit of particles, the antimatter!?* ...
- And, perhaps most interesting: the letter m is the main figure in the most popular in the pseudo-scientific circles in the formula $E = mc^2$, and this, presumably, indicates on the inertia of all energy, ie inertia, which accompanies the process of materialization, structuring and ordering Peace. In this sense, the value of C^2 in the expression $C^2 = E / m$ is a generalized measure of inertness and the most important characteristic of our world as a whole, because it sets on the certain level the ratio of energy and mass. And, curiously, if we assume that in the process of the evolution the magnitude of "C" is changing, it could mean that is changed and the ratio of the chaotic free unbound unlimited energy ... and the orderly structured reasonable energy (i.e. of mass). When $C^2 = 1$ energy equals mass!?*
- And, finally, we can talk about certain inertia in the spiritual realm - mental and social manifestations...*

2. Mass is the effect of acceleration, there is no acceleration, no effect.

Under any look on the act of creation, whether it is the Will of the Creator (Higher Mind, Nature), or the will of case ... (as you wish!), we should recognize that the world is inevitably evolving thus that the one thing must follow another, one follows from the other. The world is having character of the unity, integrity, connectedness, interdependence (holism), ie state where nothing can be limited, modified, without disturbing the rest. Well, and if you look closely, you will see and "track" along which the evolution is moved, - I mean the three Great Divine Principles: **causality, temporality, and rationality**. The Universe holds itself on these .Everywhere we find evidence of this. In this context, and should consider all that we have: not as a given, but as a consequence having the reason, no as statics (or kinetics), but as dynamics, not as a whole, but as the part of the whole, and so everywhere in the variety and diversity at all times. The above is directly related to such fundamental and universal concepts like mass, inertia, gravity, time ... and ... life.

So what is the nature of gravity, inertia and mass? Based on the analysis of the known facts, I came to the following startling conclusion: **1) The mass, inertia and gravity have one and the same cause; 2) Property of the inertia, gravity and mass of bodies in all corners of the universe is not as a given, but as a phenomenon**

induced by the accelerated motion.. If there is acceleration of the movement then is and mass (gravity, inertia), if no of accelerated motion is no and mass (gravity, inertia).

It is difficult to accept. But here's the curious thing, and to prove, in general, do not need anything, the answer is there. A lot of theoretical and experimental effort has been spent to prove the so-called equivalence principle, the essence of which, as you know, consists in that the action of the heavy mass (weight of body) cannot be distinguished from the effect of inertia (under acceleration).

*With the help of precise experiments **Eotvos** and others have shown that the gravitational mass of a body is exactly equal to its inertial mass. And, in my opinion, this is not surprising, because in these experiments have been made measuring not the inertial or the gravitational masses. Experimental efforts have focused on the measurement of the gravitational acceleration of various bodies and only. And we must admit, they managed to do this with very high accuracy.*

But what in here in this delicate matter causes rejection and directs at the thoughts is the fact that for the only consequence there are two reasons, and, mind you, in the most fundamental issues of world order. Could whether the Nature with its rationality in all relations afford this luxury ?

Einstein wrote about it in 1946: "**Mass is defined as the resistance of the body acceleration (inertial mass). She also measured as body weight (heavy mass). The fact that two such different definitions lead to the same value for the mass of the body is astounding**".

Add to this the following: how to explain the origin of the "an intrinsic property" of physical bodies - the gravity. The scientists cannot agree about this so far. If we assume that the bodies have the immanent property of mass then is a need to attract the concept of mass. If we speak of the motion and reaction to it, enough the concept of energy. (Here lie the origins of talk about the equivalence of energy and mass). The fact is that today the source of the gravitational force is not set but the acceleration effect is marked everywhere.

But what does this mean in reality?

In a universe where everything is the accelerated motion (the fact of the accelerated recession of galaxies is marked by the Nobel Prize in 2011), logically, is always and into the all material bodies will attend forces induced by the motion, which by virtue of the principle of equivalence we should summarize (plus or minus) to others which, as commonly believed, there are in the bodies, so to speak, "immanent". And it means that we really have to deal with the sum of two causes giving birth to one and same consequence.

Nature is simple and rational, and this cannot be ignored. She could not admit the existence of two reasons for one and same phenomenon, albeit the most that neither is "equivalent". Please note, the question about the cause of the gravity does not have of place in the first case and still remains unanswered in the second case. And this can only mean that our "weight" always and everywhere is connected with the movement (are you remember how is created a simulated weightlessness on the plane or on spacecraft orbiting the Earth?), and its size you can adjust by movement as on centrifuge . (And, maybe, you know other ways to control the force of gravity?) And so it would be correct to assert gravity on Earth and throughout the universe owes its manifestation exclusively to a global movement. Note, not just motion, but it is accelerated motion (!)

And this also means that **the accelerated dispersal of galaxies observed by astronomers is not a consequence of the phenomenon of mass (gravity) in our world, but, on the contrary, its cause.**

And if gravity is a manifestation of the accelerated motion of bodies, presumably, when the acceleration will disappear, then and gravity will disappear; and if the accelerated recession of galaxies will be stopped, the world will be without gravity (inertia) and what will happen with it we can only guess: it break up into elementary particles and photons or will begin to move in the opposite direction after reversing the sign of gravity on the opposite, or something else? But this already is from the area of assumptions.

It is precisely the accelerated movement of material formations in different forms of motion (from the spins of elementary particles, atoms ... to stellar and galactic vortices ...), and finally, the vortex movement of the entire universe as a whole / is the source of the universal connectivity of our world, gravity and other inertia ... Property mass, inertia and gravity of physical bodies should be regarded solely as a property induced by acceleration, as a reaction of physical bodies to the action of external forces.

And, on the contrary, the manifestation of the properties of inertia and gravitation in bodies indicates their participation in the accelerated movement.

3. No need for the fabrications of the equivalence principles.

Consider, for example, two usual for us but seeming different types of mechanical movements: a movement under the action of force applied to the body, and also the movement under the action of gravity. Action force, according to Newton's second law, causes an acceleration of the body, the effect of gravity causes the accelerated movement (drop) of the body.

So, we have two reasons for the acceleration:

1. The train accelerates. Passenger feels acceleration since the acceleration presses it against the seat back.
2. The man is falling from a height on the earth also with acceleration, but acceleration does not feel, so as he is in free movement, i.e. in a state of weightlessness.

What's the difference?

In our bodies there is no the special feeling of heaviness ie sensation which is associated with the acceleration of the movement in a train, in an elevator, in a centrifuge. We are feeling the power, or rather, the reaction to the force that causes the acceleration of the body.

In the first case a passenger have the contact with the external force, and there is the body's reaction to the action of this force, in the second - no such contact, there is no reaction. In the first case, an external force is acting and as a consequence of the passenger's body acquires an acceleration and kinetic energy; in the second case, the body uses its "internal" potential energy and as a result acquires kinetic energy and acceleration. In this and in the other case body acquires acceleration and kinetic energy. Only in the first case, the energy is consumed from the locomotive, while in the second case is consumed the potential energy of the body conditioned by the position of the body relative to the center of the Earth. Any mechanical motion is accompanied by the transformation of energy.

In the first case, the acceleration mechanism in general is clear. The external force overcomes the inertia of the body, a measure of which is mass, and imparts to the body a certain quantity of kinetic energy $T = mv^2/2$. With the acquired extra energy the body can continue to uniform and rectilinear motion indefinitely in the absence of friction forces and any resistance to the movement.

In the second case, there is no apparent external force. The source of strength, as is commonly believed, is the gravitational field of the Earth. Within the range of this field there is a difference in how the body moves: on a tangent to the Earth, or on the radius from the center. Accelerated fall of bodies is caused by radial force of gravitation. (In deep space, there is no noticeable difference in it). Where does it come from? All bodies, located at the certain distance from the Earth, have potential energy.

In it, the whole reason. But, where did the energy come from? When the body rises on a height h above the Earth, the potential energy $U = mgh$ is induced in it, which subsequently tends to align the situation, to return the body to its initial equilibrium state. But this is a dynamic balance.

So-called "*weak equivalence principle*", formulated by Galileo, consists in: all bodies, regardless of mass, are falling on the Earth (with the same height) with the same acceleration. Galileo gave the explanation for this phenomenon: "If the body weight is strictly proportional to its mass $P/m=g$, then the acceleration of free fall should remain constant." I see and another explanation. Different bodies fall to the earth (with the same height) with the same acceleration of free fall by virtue of law of conservation of energy.

$$U_1 = m_1gh, \quad U_2 = m_2gh, \quad U_1/m_1 = U_2/m_2 = gh, \quad m_1/m_2 = U_1/U_2.$$

And it means that **the ratio of the potential energy of the body to the mass for the different bodies falling with the one of height is constant.** From this we can make the very intriguing conclusion that **all material bodies here do not differ by mass, but by their ability to stock up energy.**

"The strong equivalence principle" is the physical basis of the general theory of relativity. **"According to my understanding, my theory rests solely on this principle, - so Einstein said about it.- In what follows we assume the complete physical equivalence of a gravitational field and a corresponding acceleration of the reference system. "**

We consider this case on an example of a moving train. The different bodies in the moving carriage are in the same conditions in terms of speed and acceleration. Changing the speed of movement is associated with overcoming the inertia forces. Under action the external force (of locomotive) the train is accelerated. Force acting on the body, through the acceleration gives it extra kinetic energy, the coefficient of proportionality in this case is a measure of the inertia of bodies, ie the mass. The property of mass arises only during acceleration. Curiously, the ratio of forces acting on the bodies during acceleration, is equal to the ratio of their masses, and also is equal to the ratio of their kinetic energies acquired by the bodies in this process. Proportionality $F_1 / F_2 = m_1/m_2 = T_1/T_2$ is executed for all bodies moving with equal speed (acceleration).

$$\begin{aligned} T_1 = m_1v_1/2, \quad T_2 = m_2v_2/2, \quad m_1/m_2 = T_1/T_2, \quad \text{npu } V_1 = V_2, \\ F_1 = m_1 a_1, \quad F_2 = m_2 a_2, \quad m_1 / m_2 = F_1/F_2, \quad \text{npu } a_1 = a_2. \end{aligned}$$

Obviously that and the masses of different bodies and the forces acting on them, and their kinetic energies change synchronously with the change of their velocity, ie with the acceleration. No other (physical, chemical, biological ...) properties of bodies has no effect on these factors.

With the acquisition of a certain portion of the kinetic energy the body goes with the one speed uniform and rectilinear motion to a different speed of the uniform and rectilinear motion of the body. The "quantum mechanicians" would say that the body is moved from one energy level to another.

Einstein said: **"... For anyone who will try to explain to Newton the equality of inertial and gravitational mass, based on the equivalence principle, would have to answer on the following objection: Is it true that in the accelerated system of coordinates the bodies experience the same acceleration as near the surface of a gravitating heavenly body? But where in the first case are there masses which are producing the acceleration? Clear that the theory of relativity implies independence of the concept of field. "**

On this question, we can now answer so: **there is the acceleration, which holds in the tension the entire universe, and there is the consequence (effect) of it - property of the gravity induced in the bodies.**

Noteworthy is the situation with the rotational movement. (Einstein, as you will recall, in the STR bypassed this topic by attention.) First, the rotational motion, in contrast to the progressive, does not meet the requirement of inertiality which was formulated by Galileo and Newton. This has a direct bearing on this question. The centrifugal force gives birth to the inertia of the rotating circumferentially body. (The force has tending to direct a motion of the body at a tangent to the circle, and this is compensated by the centripetal force which directed toward the center of the circle (or the axis of rotation) and thus creates a normal (centripetal) acceleration). This is true both for uniform and for accelerated motion along the circumference.

If the body rotating at circumferentially (eg, a hammer in the hands of the athlete-thrower) it constantly is striving to go at a tangent (under the influence of centrifugal force $F_{c.f.}$), but under the influence of other force, so-called centripetal force $F_{c.p.}$, directed in the opposite direction to the center of rotation in consequence of the rigid connection of the body (hammer) with the center (axis) of rotation, constantly is forced to change its direction of movement and move circumferentially. They say that the body gets the normal (radial) acceleration, where $F_{c.f} = -F_{c.p} = Mv^2 / r = m\omega^2 r$.

On the freely suspended and gyrating body (the case of non-rigid suspension of body - a carousel) are acting simultaneously two forces seeking to change state of motion: force of the earth gravity $P = mg$, and the centrifugal force of inertia $F_{c.f.} = Mv^2/R$, which determine the trajectory of motion. The resultant force can be evaluated as a first approximation by the formula

$$F = m (v^2 + g^2 R^2)^{1/2} ,$$

and the induced mass

$$m = F / (v^2 + g^2 R^2)^{1/2} .$$

The resultant force, notice, is the sum of the "heavy" and "inert" masses and no problems, because the nature of these masses is the one - a measure of connectedness.

In the case of rigid centrifuge the force of gravity of the Earth is acting on the body, compensated by the force of reaction of support; the centrifugal inertia force acts on the body on the centrifuge as alone, in accordance with the formula $F_{c.f.} = Mv^2 / R$.

As you can see, there is no difference (of antagonism) in action between so-called inertia, and so-called heavy mass.

Secondly, unlike the case of translational movement of the body, the property of gravity (inertia, mass) of the rotating body can be caused (be generated, be induced) not only in consequence of the linear acceleration: d^2S/dt^2 , but also in consequence of the radial acceleration: $a_r = v^2/R$ even in the case of a constant linear velocity. Therefore, we say that in the case of any curvilinear motion the property of mass (inertia) occurs in response to any motion, or even accelerated.

We must bear in mind the following. The every local event around us and with our participation, which we register from our point of view or else in the reference frame associated with the observer, and our judgments about it, there will always be subjective. We can not to go away from the fact that we, together with the Earth is in constant motion around axis of the Earth with linear velocity (at the equator) 465 m/s, and at the same time around the Sun with a speed of 30 km/s. Besides together with Sun system we are in constant motion with speed of 200km/s around

the center of the Milky Way galaxy, and along with the Milky Way galaxy we are moving through space at the speed of 263 km / s. Your head does not begin to whirl? Now add to this the recession of galaxies with acceleration...

In space, all objects move across the Rounding trajectories (though not always close-mouthed). Is not known no one cosmic body, which was not subjected to the rotation. Rotation is the inherent property of any medium, where one particle affects on the movement of others. In our universe, practically, there is no of the rectilinear motion and there are not of the rectilinear trajectories.

The same can be said about the state of rest. Neither of which state of rest in this world cannot go speech. This word should throw out from the vocabulary of physics, leaving its only for the case of descriptions of a rest on a bed beside the fireplace.

Thus, any external force creates in the body an acceleration which with coefficient of proportionality (transformation), equal to m , depending on the "viscosity" (a connectedness) of environment (inertia and gravity), is converted (transformed) into kinetic energy, which is stored in the body during the subsequent uniform and rectilinear motion, or as potential energy in a state of "relative rest." (The "relative rest" if to permit such a definition in physics we may to consider only conditionally, only in the case of balance of power, and as everything in this world, only as local and relative.)

Thus, the mass parameter which used in the formulas of classical mechanics, is nothing like the proportionality factor that sets a definite correlation between the acceleration and power (energy) of the body in the course of their mutual conversion (transformation), taking into account the communications of the body in the system of bodies (a kind of connectedness - inertia, gravity, energy of communication ...)

Classical (relativistic) physics describes the state of the body as a 4-energy-momentum vector: $E^2 - \mathbf{p}^2 c^2 = m^2 c^4$. (This equation was obtained by solving the two original equations: $E = mc^2$ and $\mathbf{p} = mv$ in the relativistic version). I draw your attention to the kinematic nature of this expression. There do not speak about the reason connected with power and acceleration necessary to analyze the dynamics of the process.

Quantum mechanics, as known, has refused from such detailing and rational manner proceeded to consider only "quantum states." Any physical body in this world has a certain quantum state, which is characterized by the level of energy and by time of life of this level. The concept of "state" is not directly related with the usual classical system characteristics (mass, velocity, temperature, etc.). These values are secondary here, to represent the nonlocal quantum states they are simply inapplicable. In this respect, the energy is a universal value, and it can be used in all cases.

Any object in our world, as it follows from the theory of relativity, has energy, simply because it exists: $E = mc^2$. Initial principle structuring in the nature is the quantization throughout the levels of energy. Nature is reserving to select a discontinuous series of states, they are something that we call energy levels. Any changes in the state of the system, including our thoughts, feelings, desires, etc., from the point of view of quantum theory, are tied with the changes of its energy, and they are functions of state of the system.

Acceleration of the body, in this sense, is tied with the movement of energy, or in other words, with work on the transfer of the body with one energy level to another, ie to the larger (or smaller) order. Any ordered motion, including the uniform rectilinear motion of the body at a certain speed (as we say, coasting), was paid by the energy dissipated into the environment (as required by the 2nd law of thermodynamics). This means that order in this world, including and life itself, is paid by the energy dissipated into the environment.

We assume, as is customary in quantum mechanics, that **the energy of system which is in the state of the motion outside the state of the equilibrium, ie is limited, structured and organized into dynamic patterns in space and time ..., has a new, more higher quality.. On the contrary, the movement of the system towards a simplification, uniformity and homogeneity, which is indicated by an increase in entropy, reduces the quality of energy. The property of mass thus reflects the change in the power quality in due to change of the space-time ordering of system and its structure, proportional to degree of its deviation from complete homogeneity.**

So, the uniform rectilinear motion of a body which has been formed under the influence of external force meets to the certain level of energy in the system of bodies of the universe or other words to the certain degree of order (in the system of chaos), that in itself provides (in the absence of outside resistance) infinite movement in a predetermined direction without consumption of external energy. The fact is that order with respect to the chaos represents organized force, and it provides Mind! (Although, as was shown by **Prigogine**, in nature occurs and self-organization – “synergy”). In this sense the kinetic energy which is accumulated (stored) in the body during acceleration (or a momentum of the body) is identified with a measure of the order i.e. the with the value which is related (proportional) with entropy. This is probably meant **E. Verlinde**, formulating his "entropic" theory of gravitation.

The fact that the passenger in the car in the time of uniform and rectilinear motion do not feels energy, which was induced in it in the result of the train acceleration tells us possibly that the process affects more deep levels of organization of matter, and it possibly has the relation to the spin dynamics of atomic and molecular conglomerates (structures) of elements of the microcosm. There we should look for going out on a reason of the world connectedness and the dynamics and also on the accelerative divergence of Galaxies and holism of the world. Also perhaps this process can go by the "entropy" way through the order-disorder.

The curious statement to this effect remained of **Lao Tzu: "Unfathomable Dae - this is what fills the shape of things, but it originates from Tao. Tao is what drives things to move, its way is mysterious and unknowable.** "Continuing this thought, Chinese philosopher **Huai Nan Tzu** said: "**The one who follows to the natural order, is involved in the flow of the Tao.**"

Thus, the energy (kinetics) into the body is not "pumped in" during acceleration, and the uniform and rectilinear motion of the body is explained precisely by the order reasonably created earlier, which is determined by the difference in the entropy of the body and the system of surrounding bodies (environment).

4. The world is tied together by movement.

*" The movement is no, said bearded sage.
Another said nothing and stood before him walk.
He could not object stronger;
The all praised the convoluted answer.
But, gentlemen, this fun case
leads me to another example :
Though every day the sun goes before us,
But stubborn Galileo however is rights. "
/ AS Pushkin, 1825. /*

One movement generates another, one event (state) follows from the other. Everything is interconnected and precisely adjusted in a single whirlwind-flow (in a single impulse) of colossal energy. Power that does not destroy, but creates, unfolds not spontaneously, but in the mainstream of the three Great Creative Principles: **Causality, Temporality and Reasonableness**. Their unity in one form or another, in one or another degree is present (manifested) in all phenomena and events, at all levels of organization of the world order. In the place where for some reason one connections are lost from sight, connections of a higher (lower) level of connectivity are discovered, and so on without end ... These ties are so close that, as **Poincare** said, **"we establish only the connections between phenomena, and not their essence."**

"The relationship between objects is not the only interesting aspect of quantum theory, but the most important one," Ervin Schrödinger said at the time.

Uncertainty in the minds of thinkers occurs every time you try to fragment our holistic world, divide the indivisible, by defining and limiting, forgetting about that the every boundary in this world is only convention. To divide something in this world in the truest sense of the word is not possible in principle. It understood many prominent thinkers. However, with great zeal, scientists continue to issue "on the mountain" all new particles, fragments, giving them into property not only "mass", but also a host of other more poetic characteristics. Moreover, some of these virtual particles (fragments) have been appointed by as "responsible" for some physical interactions, including for the gravitation (bosons of Higgs). Although sometimes namely in connection (of energy of connection), i.e. in the ability to resist to division follows to see the qualities that attribute to the fragments. This is and mass and the charge, the coordinates... and impulses!?

Attempts to describe the real state of the individual macrosystem on the basis of Schrödinger equation were making earlier repeatedly, including and by **Schroedinger**. His idea looks as quite radical and is as follows. The wave function ψ itself is the reality and needs no interpretation Bourne. The atomistic structures, about which ψ -field should was something to speak so far, do not exist at all, at least as the localized objects. Conformably to our macrosystem, this means that a macroscopic body, as such, does not exist at all, in any case does not exist, at least approximately, such things as the position of its center of gravity at a given time [5].

The main point of the world process (and at the same time of the physics as a science that seeks to understand this essence) is the continuous movement of energy in the universe with the one level of the organization on the another, from one form - in another; at first out of some natural (uncombined) state to the more ordered in space and time state, and then back again, either spontaneously or under the influence of reasonable force.

Speed indicates on the kinetics of this event, the kinetics is answering on the question "how" and this cannot to influence on the property of mass. Acceleration refers to the dynamics and is associated with the cause, answers the question "why" since it is tied with the action of forces and the transformation of energy.

Acceleration is the "driving force" of evolution.

The world its unity, integrity, coherence owes exclusively to acceleration of its movement... The acceleration generates the effect of inertia (of gravitation, mass) to the subjects of universe, and thereby unites, connects, organizes, directs ... evolution. It is precisely the accelerated movement, and not the uniform and rectilinear one, that should be considered as the main troublemaker in our world, everywhere and in everything. The evolution in the world is promoted exclusively by acceleration

And the inertia (gravity, mass) of bodies should be considered as an induced property - the effect of their accelerated motion under the action of external forces. All these qualities on the scale of the universe are generated by the motion of cosmic matter, and in general, the vortex rotation of the universe.

It was the generation and manifestation of inertia that evolutionarily ensured and led to the creation of conditions for the formation of the connectivity of the matter of the world at different levels of its organization, interdependence, the movement of the world as a whole, and its evolution, made the world material and real (visible and tangible).

In our world, there is no self-sufficient physical essence, such as the "mass" or special "Higgs bosons" immanently inherent in all material bodies and responsible for inertia and gravity, determining the measure of the potential and kinetic energy of bodies or of amount of motion (momentum, moment) , of the centrifugal and centripetal force, Coriolis force, etc. In all these cases, we are dealing exclusively with the property of inertia induced in bodies by the various kinds of accelerations.

The phenomenon of gravity in our World is nothing more than a manifestation in the World of Inertia of the acceleration effect created mainly by the vortex motion of matter in planetary, stellar, galactic, and other systems, and finally, the vortex motion of the Universe as a one whole, as the vortex- tornado (the consequence of this is the inexplicable dynamics of the motion of stars in galaxies within the framework of classical physics, and the effect of accelerated dispersal of the galaxies themselves.

It will be correct to speak that all material bodies distinguished not by mass, but by the ability (property) to store (limit, preserve, order ...) the energy of motion

Inertia has and another quality, no less important for evolution: **inertia gives bodies inertness, materiality ... and, thereby, gives us the opportunity to perceive the world and sense of reality.**

And this is because our perception of the world (of space and time, causality and temporality, past, present and future ...) is based solely on the property of the bodies inertia , the inertia of our sense organs and the biochemical processes in the bodies.

5. The driving forces of the world process.

Nature, by virtue of its integrity and indivisibility (holism), always and everywhere, with great force, seeks to maintain the status quo (balance and symmetry), and owing to the inertia resists any contrnatural attempt to violate it. It is this ability of her - resistance, the reaction of nature in different forms and scales of its manifestation - we call mass (or energy).

Energy in nature is formed (accumulated) as a result of **fluctuations**-violations of neutrality and equilibrium, and manifests itself (reveals) by the action of force there and then, where and when finds the way to **relaxation** or move (returning) to equilibrium.

The universe is a single vortex-tornado!

The vortex motion of the Universe as a whole, through the acceleration of various kinds generated by movement, induces in the bodies (fragments of the world) a

fundamental property - the gravity that keeps our world in unity, synchronizes the vortex motion of stellar systems, galaxies, and at the same time generates all the diversity and diversity things in our world, and promotes evolution.

The universal vortex-tornado entrains and "twists" the entire contents of the Universe informs to the particles and to the bodies, the acceleration in response to which the inertia force arises in them - a phenomenon connecting, fragmenting and differentiating the world at all levels its organization, which we regard as both a driving force, and as a force of gravity (gravity), and as a mass.

In this single vortex motion of the universe, in various forms its manifestations: action, conservation and transformation, all the energy of our world is concluded, there is no other source of energy in our world

The effect of accelerating the vortex motion of the Universe as a whole creates the visibility of the inseparable connectivity of space and time in the Universe, which **Poincaré** and then **Einstein** and **Minkowski** intuitively felt, tied it together, and denoted by the metaphor of the "continuum".

Only the energy has the physical essence in our world. Everything else in our world represent by itself different abstractions, conventions, metaphors, endowed with certain characteristics and qualities, and composed, logically, in certain quantitative and qualitative relationships with each other (this includes concepts such as gravity, inertia, mass, charge, etc.) but are devoid of any physical essence and represent a temporary and temporary energy events, consisting each other in certain relations: in the first case in the sense of having a finite duration; in the second - in sense depending on the direction of motion of time. (All fundamental physical theories have built on the differential equations, where time is by the finite "argument").

All events are a consequence of the movement of energy in time. **Time - the main factor of evolution of the World.**

From the standpoint of evolution, the freely (chaotic) motion of energy has no of creativity. The uniform and rectilinear motion also is conservative and also does not change anything and does not create but only keeps the level of achieved earlier order. (This is only one form of conservation of energy). And **only acceleration is the factor that changes, creates ... Time is standing behind this factor!**

The difference in the action, that hidden behind the operators of dS/dt and d^2S/dt^2 in our world is enormous. Who thought about it? It looks that our world totally is not against of that moves uniformly in a straight line, smoothly and consistently , supports and maintains this state. During this nature requires no work, no energy Another thing is the acceleration, deceleration. Any change of velocity or acceleration (whether linear or normal), encounters resistance (even in space) and requires expenses of the energy or performance of the work. And this means that **only the acceleration is driving the evolution in our world.**

The whole universe is in the accelerate mode of the movement. This fact suggests that there should be a reason for that - powerful acceleration force. Modern astronomy is nothing definitely cannot say about what is its nature, not otherwise as add into known equations the new λ -member or remove old (just kidding). The best thing that came up is that the recession of galaxies is due to the influence of a mysterious dark energy. Although, in my opinion, there are more "grounded" assumptions. Allow me to express them.

First. The universe is still in a state of relaxation, ie comes to equilibrium after some that took place earlier, universal fluctuations. From here it is possible to make such a conclusion: **biblical act of creation is not finished!?**

Second. Our universe is subjected to the action of some external force. Source of force causing accelerated motion (recession) galaxies of our universe is logical to look for in its interaction with the others adjacent universes, hitherto unknown to us, but having the opposite sign of properties or gradient of physical parameters, and relating to the multiverse, or even into other dimensions!?

Third. (This option is for the reader, perhaps the most unexpected). The logic of physics, based on the rigor of mathematics, suggests that only the time can have such force, power and authority in our **world**.

And so **management of the time is theoretically the most simple, fast, effective and creative way to run the world on the path from a "Word", which was "in the beginning" ... to the real world and further into the future, across evolution, gravity, inertia..., and at the same time rule the "space-time continuum", as it follows from the surprisingly simple, but downright divine relation: $a = d^2S / dt^2$.**

The very fact of the accelerated recession of galaxies, taking into account the ideas presented in this essay, tells us about it.

The universal acceleration affects the entire world process, part of which we are, closely related to the evolution of animate and inanimate matter and with the cosmos as a whole. And also that **together with the vortex of the universe, the accelerated movement of galaxies, all the elements that make up them inevitably receive the property of gravity, inertia and mass ... exactly the same as the passenger train (lift centrifuge ...) feels a rush of gravity in response to the acceleration of the train (lift, centrifuges, ...).**

Accelerated motion of galaxies implies not only the external force, but also presence of mechanism of connectedness of elements of the galaxy, and of the galaxies themselves, arising in response to acceleration. We are a "cosmic dust." Forces of the cosmos and the "the earth steps" are incommensurable quantities. All the power in the cosmos and from space. Gravity, inertia and mass, corresponding to them, are the embodiment (properties and facilities) of the energy of cosmic connection.

Quantum mechanics "canonically" has linked the energy and time using relation of uncertainty of Heisenberg: $\Delta E \cdot \Delta t \geq h/2\pi$.

*Main epistemological conclusion of Noether theory is that **the laws of conservation of energy, momentum and angular momentum are inextricably linked to fundamental properties of the surrounding space and time, that is, ultimately depend on the cosmology of our world.***

*Hence the converse is also true: **the accelerating or the decelerating the speed of rotation of the heavenly bodies, the violation of the energy balance of reactions, etc. is a consequence of violations of space-time symmetry.***

The effect of universal acceleration is able to gather in certain areas of the Cosmos the huge masses of space fragments, forming stars, planets, comets, galaxies ..., aligning thereby, balancing the inertial (gravitation) situation, thereby forming the source of the inertial (gravitational) properties of the space in the cosmic scales. We believe mistakenly that the force of gravity is inherent to the bodies (or to their

masses) because the bulk (in terms of quantity) of the substance in the foreseeable limits of the Cosmos just are gathered at these points.

Where cosmological theorists perceive the presence of a black hole can be quite ordinary space objects in motion. Accelerated motion of celestial bodies under the acting of the laws of cosmos form "swirl", which able to involve into this "swirl" everything that is near. (You can see, if desired, "next of kin" of black holes on the rapid rivulet in unlimited quantities). Need to proceed from the fact that gravity is not a given. Source of gravitation is not the substance itself or Newton's "gravitational field". A property of gravity (inertia) is induced in the bodies as a result of accelerated motion of a bodies providing connectedness and "holism" of the world. Gravity of this kind cannot create objects with density more than some limiting value, not to mention the black holes. In accordance with the tenets of relativism, acceleration of any object represents the growth of their energy and inertia.

The inertia of bodies is associated with acceleration. On this, studying the processes in the stars in 1936, **Chandrasekhar** pointed out. **"If the movement of electron is slow, then, as usual, increase of energy means a more faster movement, i.e. higher speed. If the electron is moved near to the light speed, its speed can not to have any significant increase (otherwise it will exceed the limit of speed of light!). Therefore, the additional energy takes a different form, unfamiliar in everyday life: the additional energy goes into the inertia, ie increases the resistance for the electron acceleration."** [6] (emphasis mine - EF). I think this is not quite true. The obstacle to accelerate is the universal connectedness of world at all level of organization of matter. And so is the case everywhere where speech goes about inertia.

There are theories which suggest that the source of the gravitational field can be waves that occur in five-dimensional space with respect to which our world is accelerating (or is slowing). In this sense the force of **gravity can be viewed as the acceleration vector in the force potential field which is external towards our world.**

Finally, another interesting idea. Conception of mass (gravity, inertia) as a measure of the connectedness of the world does not exclude (and quite admits) significant fluctuations of gravitational forces in the world in historical terms, directly related to changes in the dynamics of the Cosmos (acceleration, centrifugal forces ...) that can clarify (logically explain) the situation with the presence in the ancient world of dinosaurs and giant megalithic constructions.

Fantast who ponders about the artificial antigravity should bear in mind that the property of mass by its very nature there is the body's reaction to the acceleration, and hence to affect on the gravity we can only by the another acceleration. As they say, "like cures." Nothing another we are knows.

For more information, see [7-10].

But that is not all. There is something more interesting.

6. Time is the main factor in the evolution of the World.

The levels of organization of nature are very different in all parameters, and the natural mechanism of their action (and interaction) is the same, for all types of energy: electromagnetic, gravitational, nuclear... And this mechanism operates **according to one scheme: the nonequilibrium caused by the fluctuation, the symmetry breaking, and ... the relaxation to equilibrium, homogeneity and chaos!** It is this principle, as a single mechanism, that underlies the generally accepted "gauge theory",

which treats all types of known interactions, including Higgs theory, in one key: **fluctuation - relaxation**, and the solution of the problem consists in selecting of the gauge coefficients for them.

The fact that we everywhere and in everything observe an unbroken chain of causally-connected events, we have a sense of the movement (flow) of time from the past, through the present, into the future, seeing in this the arrow of time, indicates on that **in our understanding the mechanics of the world has been missed something very important: the initial state - temporal equilibrium (!) is broken.** And, at the same time, on the presence in the world of some kind of effective force (energy) that seeks to restore this balance, as evidenced by the presence of this very arrow of time. At the end of the last century Belarusian scientist **A. Veinik** pointed to such "chronal" energy.

On the movement of the world to equilibrium - to the balance in of time - indicates the presence of this very arrow of time in all phenomena and processes, at all levels of the world order.

This is indicated by and another fact. The deeper we look into the microcosm, the more higher the speeds and energies we there are found. This, as I believe, is also a kind of "arrow of time", and points out on that, **firstly, our world exists as a single whole; second, it develops in one direction; and thirdly, it develops through acceleration (more precisely, inhibition) of all its processes.**

"Time is a nature way of keeping everything this that is happening "so that does not happen everything at once," - **Wheeler** thought so.

After all, if you stick to the Biblical view on the process of the creation of the world and to assume that the world is moving on the path from "The word"... (Thought of the Creator, unrestricted in time and space) which was " at the beginning of ", to the realities of the present and future, we come to the fact that the world process just needs a "brake", which slows down the movement. In the slowing vortex motion of the universe for this there are all necessary conditions.

Albert Einstein: "... My career have identified various forces over which I have no power, primarily those mysterious glands in which nature prepares the very essence of life. Henry Ford may call it as your inner voice, Socrates defined it as a daemon: each person in one's own way explains the fact that the human will is no free ... All determined ... by forces over which we have no control ..., equally for an insect and for a star . Human beings, vegetables or cosmic dust - all we are dancing under the mysterious time which is modulated somewhere by the invisible performer (emphasis mine - E.F.). "

Everything that said in his time this man of genius,deserves close attention. All subsequent events proved it. The saying quoted above this is something special, and it do not give me rest, suggestive.

If you noticed, everything about what we have spoken here: movement, speed, acceleration, and finally, about the life and evolution ... anyway are locked on time. More than the time a secret for a man, perhaps, is not. The time is always and is in all simultaneously. But we cannot neither see it nor feel, and we cannot to measure it. We cannot to affect on it, although about it they say a lot. And is absolutely not clear in respect to the what (?) we should to measure the time and all that has been subjected to the time?

Einstein found a solution: took as a reference (something like an anchor) the limit of the speed of light "C" and has built theory of relativity. Construction of this "castle in the air" has demanded from Einstein and his followers a lot of effort, such as the fitting of all the classical theories under this lath and also of the great sacrifice: it was necessary to make a space and time as "rubber ". Nowadays the apologists of these

"paradoxes", desiring to preserve innocence of his creation, are trying to explain irrefutable facts which operate against the theory, for example, the superluminal events (tachyons, pulsars ...), go even further: they are ready to admit into the theory the imaginary (and negative) mass and the negative energy ...

On the active role of time in nature indicates a lot of things. **"If we want to build a unified, consistent physical theory,** - says in his recent monograph the known contemporary Canadian physicist **Lee Smolin,** - **we must first solve the problem of time"** [11].

So what is the time? This is the "something" or a "nothing"; entity or relation, the excess or lack of of fantasies? Do not judge strictly. This dispute stretches, as are known, from ancient Greece, somewhere from **Parmenides** and **Heraclides**, and as you can see, is no end it..

When it comes to the mystery of time, i am recalling a situation that happens to us whenever we travel by train. As mystical (mysterious) for me here is that passengers in cars with curtained windows do not feel any movement at all: they sit on the bench as a matter-of-factly, are drinking tea, are flirting, or are walking along the car and the any side sensations at them do not arise. But it is worth the train to slow down its movement, or to deviate from the straight path, all the train passengers shall immediately are feel it. Is not it a miracle?

On the question, relative to what this car moves uniformly and rectilinearly, and relative to what it is accelerating, Newton, as you will recall, has answered: with respect to the absolute space. It's simple. But to understand the depth of the problem, I'll tell you what **Newton** thought: all his achievements in physics are basis for support of this truly important discovery , absolute space. He wrote: **"The recognition of the true motions of individual bodies and their exact delineation from seeming is very difficult, because the parts of the fixed space, about which has spoken earlier, and into which are performed the true motions of bodies, are not perceived by our feelings."** In the end, if the absolute space does exist, it must to give a reference point for the recognition of any movement, but not the only for speeded movement.

Unlike abstract Newtonian reference system (absolute space), **Mach** has offered the system of reference which can see everybody - this the substance which has distributed into the space.

Einstein, as you remember, not was satisfied neither by one nor by the other. At first, in the special theory of relativity have appeared even more abstract absolute space-time, and then in the general theory of relativity - the gravitational field.

It is quite obvious that Einstein's general relativity is in contradiction with the conclusions of Emmy Noether's theorem. The theory is a model of the asymmetric world in which no conservation laws, the space is isotropic and homogeneous, time is patchy. How it is to be understood? Or to recognize that Einstein's general relativity theory cannot be "by general theory" in the truest sense of the word, but only by "local", or we should to doubt the validity of the conservation laws? (But about these nuances to speak somehow not accepted).

*When **John Wheeler** humorously said that in general relativity, " mass manages the space, telling him how to bend itself, and the space manages of the mass telling him how to move", he could not does not understand that the theory is incomplete, and should to define else the external force that controls the world.*

M.V. Lomonosov was convinced: **"Everything in this world is arranged very simply. What contradicts to this , should be discarded. "**

Time is a special degree of freedom, uniquely determining the rigid, indestructible border of the evolutionary possibilities of the World and man.

The sensation of the arrow of time, indicated cosmologically, psychologically, biologically, and others manifestations in our world indicates the movement of the world process and all its components in a given direction. Time moves and directs the universe process and everything its components and links: thermodynamic, electrical, nuclear ..., and all the others ...

The property of temporality is embedded in all the laws of dynamics. And it turns out that the time manifests its properties in "below", at the level of reality, and its cause should be sought "Upstairs"! Meta-zakon !? Two - faced Janus!

From this we have the right to draw a logical conclusion that the driving principle (cause) of this all-encompassing action can be the energy of a special kind-the "**chronal**" **energy** that relaxes from the state of " the temporary non-equilibrium". Its active and comprehensive role in the universe and, as a consequence, continuous movement (evolution) just point to the presence in the universe of such a global disequilibrium. **Relaxation from the initial disequilibrium to the equilibrium in time generates the movement of the World in time.** And the slowdown of movement of universe is the evolving and creative force of our world.

Thanks to inertia, in our consciousness the direction of the process from the past, through the present, into the future is fixed; from the cause, whose place is always in the past, to the effect that comes from the future. All this is reflected in our consciousness, thanks to the fact that our consciousness has the ability to remember, distinguish and choose. Thus, the sense of the past, present and future in our life can be explained solely by the inertia of the World System (the Universe), relative to the inertial system associated with time. Where there is no inertia, there is no interaction, no movement, no reaction, there should be no sense of reality in the usual sense for us, there will be only a "dead" Eternity!

And in this case we cannot escape the answer: **what does universal dynamic physical connection and acceleration provide to the world?** What is the mechanism of this?

My answer is this: **the vortex movement of the universe as a whole!**

7. Absolute inertial reference system - world time.

"Temporality" is one of the three Great principles of world order that are responsible for the evolution of. The whole universe is subordinate to them. A pace of the progress of the world time is of decisive importance for the future of our world.

The carriage which moves uniformly and rectilinearly, for passengers seems as ideal inertial reference system (ISR). Exactly also the whole world has inertia in relation to the progress of the time.

World time is a unified absolute inertial reference system for our Universe with all the ensuing consequences. All of us are moving in the " car (railway carriage) - time," ("somehow uniformly and rectilinearly") and therefore as in the car with the curtained windows nobody the time does not see and does not notice it, no devices cannot measure the course of time and we cannot influence it.

The astonishing feature of this "car-time" is that its passengers, as seems to us, do not have any communication with the "outside world", i.e. there is nothing that would be can indicate a change in speed or direction (acceleration) movement of the "car" itself. Inertia of phenomenon of time is absolute. Ocean of time embraces the whole

world and dissolves it in yourself. Time is the highest order. And only the living mind can disengage to form the temporal dynamic ordering, extract the time from this ocean, but need formerly to pay for it by a special kind energy.

And as in a conventional inertial car to make a step, you need to push off away the floor of the car, that requires contact with the floor, also in the "car-time" to get an acceleration (or slow down) with respect to time, you need to interact with the time. And it can be done in only one way, to expend work (energy) and in that way increase the order in the world (and i.e. a reasonable way). The easiest way is acceleration of the body in relation to the flow of natural processes. The other way is to raise the body temperature to accelerate the internal processes within it. Still better to keep the temperature of body at a higher level, as it makes living organisms. But for this you always have to do work, to constantly spend energy that is nothing else than "a contribution" of nature.

"Car-time" have the relation to the evolution since supports the movement to the order (the uniformly and rectilinearly mechanical motion that does not require energy costs is a good example). As any acceleration in the mechanical system the process of an acceleration (deceleration) of in the "car-time" is associated with the performance of a work on the creation of the additional order and is associated with the structural (or other) mutation of the body that demands compensation energy into the environment.

Acceleration relatively to the world time require of expense of energy, work. Our life including! Living matter learned to do it automatically - continuously maintains the temperature of the thermostat by exchanging of energy of the special quality for the time of life, and so is living for some time in harmony with time, i.e. inertially.

Cannot be in this world in the full sense of "clean" inertial local mechanical systems. **The only absolute universal system of reference for our Universe, truly inertial, is the system which tied to the absolute world time.**

8. «The idea of the Higgs».



*Nobel Prize in Physics for 2013 was awarded to the physicists **Peter Higgs** and **Francois Englert** for the "theoretical discovery of mechanism that will provide insight into the origin of the masses of elementary particles."*

"Higgs Ocean" is intended to explain the origin of the mass. If accept this theory it means that property (quality) of mass since birth and forever is transmitted to the particles, bodies and organisms... And then, everything goes according to rut. The mass are declaring as cause of the such phenomena as inertia and gravity, and simultaneously with it is detected their equivalence. However actually it turns out wrong somehow: mass, inertia and gravity as if exist but no the reasons for their being.

But and the explanation that given by the Higgs theory seem to me unsatisfactory. Particles (and, consequently, the molecules, bodies, etc.) are taking on self the mass as dirt out the mythical "puddle" Higgs. Yes, and it is unclear for what there is this mass? What is the purpose of this action? From her only harm? In essence, the "legend" about of the Higgs particles adds us some beautiful metaphors, higher-level abstractions, but not a whit us closer to the truth. In short, it is "idea of the Higgs"! Try to understand. Higgs ocean looks like a conventional viscous medium. However, it is not. And for this there are a number of reasons.

- Higgs theory suggests that this particular ocean fills the entire space, so there is no way to remove particles from its influence. In a situation with a viscous fluid we can always pull out your hand and to feel how become easier to move her, but the Higgs theory does not allow that. Particles of one type are acquiring the appropriate masses, no matter where they are located in the ocean.
- The usual viscous medium inhibits any movement, while the Higgs field resists only to the accelerated motion. Particle moving through space at a constant speed, in contrast to the hand movement in a viscous fluid will not experience "friction" in the ocean of the Higgs. Its motion will remain unchanged. Only when we try to accelerate or slow down the particle, the Higgs field will show its presence as the power which we should to apply.
- Ocean Higgs gives mass only for fundamental particles, such as electrons and quarks, but when particles are combined into the composites of these particles like protons, neutrons. atoms... then come into play others well-known sources of masses...

Protons and neutrons are composed of two types of quarks (a proton is consist from two u-quarks and one d-quark, a neutron - from two d-quarks and one u-quark). Through years of research are discovered four species of quarks, whose masses span a wide range from 0.0047 to 189 proton masses. Diversity of masses are explained by the fact that different types of particles interact with the Higgs ocean with the different force. If a particle interacts weakly with the ocean or does not react at all, then the resistance will have weak or be absent, and the particle will have a small mass, or will not have mass at all. Photon, for example, moves through the Higgs ocean without resistance and therefore does not have mass. Conversely, if the particle interacts strongly with the Higgs ocean, it will have a higher weight. The heaviest quark (called the t-quark) with a mass of about 350 000 electron masses interacts with the Higgs ocean 350 000 times stronger than the electron and this is the reason of its large mass.

To date, is no satisfactory explanation of how particles interact with the ocean, and why the known particles have precisely those masses which are detected experimentally. If the Higgs ocean is not, scientists believe, all fundamental particles should be similar to the photon and absolutely would not have mass. This case could to have a place unless only in moment of the early universe.

A legitimate question, is not whether the theory of the Higgs of the next attempt to revive the idea of the ether? They speak no, although certain similarities with the ether there is. The Higgs condensed field, like the ether, is the inherent quality of the empty space, it permeates all space, penetrates everywhere, present throughout. There are however significant differences, and the main thing is that the Higgs ocean has no relation to the motion of light and does not affect its speed. Since the Higgs ocean does not affect on the fact that moves with constant velocity, the ocean is not associated with systems of reference, whereas this property was attributed to the airwaves. Relatively to the ocean of Higgs all observers are moving with constant velocity, are in the equal position, and in this sense, the theory of the Higgs does not contradict the special theory of relativity.

My considerations.

Two "ocean" - compare!

i. Higgs ocean.

1. Ocean fills all space, permeates everything and everyone in the universe. Of this ocean impossible to go ashore "by dry", ie remain without properties of mass (inertia). In the any place of the ocean the particles of the same type have the same masses. It should speak about the high homogeneity and isotropy properties of space and time and of the themselves laws of physics ?
2. Ocean is one for all, however different particles have different masses; the ocean acts on quarks and electrons, but does not act on their conglomerates. What is this discrimination? They say that energy of communication is added (!?)
3. Ocean interacts (resists ...) only with particles which move with acceleration and does not interact with the particles which move uniformly and rectilinearly. What is the mechanism of interaction? The point seems to in dynamics?

On the above questions Higgs theory does not give answers.
Now imagine another hypothetical ocean with another properties.

i. Ocean (flow) of the "time".

Ocean (flow) of the "time" is the absolute inertial frame of our world - the source of "temporality", one of the three sacred qualities of Universe, which constitute, in my understanding, the unity of the creative principle of the World (two other: the causality and cognition (rationality, consciousness, mind)).

"Temporality" is responsible for the arrow of time from the past to the future, the movement to equilibrium, monotony, chaos, is reason of the permanent decline in the quality of energy and accelerated recession of galaxies ... We are the temporary inhabitants of the universe and we move in this flow (as the passengers in a train), uniformly, isomorphically (regardless of the spatial direction) with some absolute speed, and this absolute motion of "car-time" we do not notice, and to discover it "with our bell tower "(as out of the car with curtained windows) we cannot.

Properties of the ocean of time.

1. Passive movement in the flow of time (this, by the way, the main feature of inanimate matter) does not require the cost of energy. Energy as a contribution of nature requires only for an acceleration or deceleration of movement with respect to speed of the universal flow of time (say, only under the violation of God's "timetable"). Any interference in the natural course of events meets resistance of nature, and it is what we call inertia or mass. Mass arises as the effect of acceleration-deceleration relative to the flow of time, in all other cases it is absent. The time flow is the phenomenon exclusively homogeneous and isotropic. / This is the answer to the first question above/.
2. Property of mass (inertia) of the different particles is proportional to the energy expended, as is commonly believed, on the acceleration (deceleration), and in fact, to change their course of time in the stream. / This is the answer to question 2./
3. Ocean of time permeates everything, affects everything. When moving particles (bodies) in the flow of the time ("to march in step"), the essence of mass

(inertia) is not displayed (not induced), the energy costs for this movement is not required. Inertia appears in response to the acceleration and is proportional to the acceleration (Newton's second law). Acceleration of particles (bodies, organisms ...) is proportional to the energy expended, for example: the $E_c = m v^2/2$, $E_p = mgh$. / This is the answer to the third question. /

Inertia it is the same that the EMF of self-induction, ie the reaction of nature on the purposeful intervention into the world-wide order (spatial-temporal, or power) from the side of reasonable matter ...!? It is energy process. Note, that humanity strongly has moved forward in his evolution and began to progress only after as learned how to manage the random thermal motion of the gas molecules and transform it into the directional movement of the piston. From that time began a marked human impact on nature, unfortunately, with the completely unpredictable consequences. Because began to destroy the natural order of nature and got to atoms and nuclei..

9. The phenomenon of "life" is the continuous struggle for time!

All visible reality is only the fluctuations of energy flows in time with varying degrees of their organization, relatively of the single and indivisible stream which denoted in our mind as an arrow of time.

Life is not only an unusual phenomenon in all respects, but in a certain sense (in terms of the laws of thermodynamics) is unnatural phenomenon. But you can hardly guess that **in order to live, we should uninterruptedly to borrow time as loan in the Universe!! We are changing energy on time and we have living until spend the energy.**

Unlike inanimate matter, life requires the acceleration of all biochemical processes! Apparently this is a necessary condition on the way to the supreme organization of matter, whether plant or animal life. Increase in body temperature (for example, for the person it is those 36.6 C) is associated with this. For plants this threshold is one, for microorganisms - other, for multicellular organisms - the third, etc. Life requires a constant flow of energy, primarily from the sun. And in this sense, the efficiency for different organisms is different.

And it turns out that any reasonable entity (and only!) in order for to live is borrowed energy from nature, organizes, transforms it, and exchanges it on the time of life! And so on the all time of her life. For the every moment of life we are paying energy, energy quality. How much "green"-joules you spent, so much minutes of life snatched from nature and no one minute more. .. **In the role of the equivalent in such an exchange, between the energy (power) and the acceleration (2nd Newton's law), just and is in our imagination the measure of properties of mass, inertia or self-inductance. It is in connection with the time ought to look for the cause of mass. I would say more, but I'm afraid you are unlikely to agree with me: in the mass of the ordered matter is reflected the itself "frozen time" !? ...** (A simple analysis of well-known classical formulas indirectly indicates this).

From all this follows the conclusion: together with well-known and proven conservation laws, which act in the world, **must act and the law of conservation of World Time!?** If with the mass somehow is associated the time, then, for example, the events such as a nuclear explosion, resulting in the transformation of energy and mass, adds into the nature an additional amount of motion, and thereby **returns time for the nature, as the driving force.** (In this question we somehow came to ideas N. Kozyrev).

We have some experimental data, which, guided by the theory of relativity, can be explained reasonably only in the assumption that the local release of energy stored in a substance at a given level of its structural organization (for example, at the level of the chemical bonds, at the atomic, or nuclear level), there is a corresponding curvature of space-time around the area of the energy release. The mechanism of this phenomenon is not completely understood. They decided that the geometry of the curvature determined by the spatial distribution of the evolved energy... Is this true?

Here is one experimental fact. Under normal conditions the half-life of muon equals a one and a half millionths of a share of second. Back in the 70s of the last century on the accelerator the muons able to overclock up to speed equal to 99.94 percent of the speed of light, and again, guided by the theory of relativity to show that the life expectancy of muons has increased in 29-fold. This fact is unequivocally has been attributed to the merits of the theory of relativity. However, the question about what happened with the space or how succeeded to allocate the time from the space-time continuum, if in accord to the general theory of relativity space and time do not exist separately, with all this was not raised.

Not all just on this issue and in the quantum-mechanical theory. Time here canonically is conjugated with energy, and in this case it is necessary to solve the another problem: time to separate from the energy. Should take into account the energy factor: the faster a particle moves, the more energy must be expended to speed up its movement, because as is believed to its mass increases.

I have other explanation this. When we have spent energy, we have won ("borrowed") from nature for a particle the time of life (we have made the work, have slowed down the process of half-decay, have provided for the particle a kind of a "lethargy"). All of this is directly related with the payment for the time, this is the contribution of the nature, as for any work which is aimed at reducing the entropy!? And it seems to me that the space is not being. Space here plays, shall we say, his usual role - "forms of content" or role of "container" as you wish. You must pay for the increase in the order in nature, or for the decrease in entropy.

*The world is arranged so that the energy for his existence, man takes from nature, and makes it the extremely barbaric methods, destroying its natural order by means of incineration or splitting, etc. ..., not having any opportunity to repay the debt. And although the energy in a closed system as a whole, according to the science laws, must preserved, but its quality will steadily decrease. **So may be would be maintained constant the amount of time? Energy and time, as they say, there is not only canonically conjugate variables, but essentially they are equivalent!?***

Life and evolution are required to the acceleration in the inertial system of reference (ISR) associated with world time!? Organism must continuously perform the work for maintain the desired temperature, which goes on to overcoming the inertia in ISR is tied with the time by trying to speed up bioprocesses in the body, or more correctly, to borrow the time from nature in exchange for the energy of certain quality. And it seems to me all this so that we live with you, gentlemen, in this world only owing to that we should uninterruptedly to unfasten to the Nature the "green joules" for the every moment of its existence. And in this sense life is a struggle for time! But prove it is not easy. But namely to hither led of me my irrepressible imaginations. And ... in general, they and are not entirely mine. The idea of the world absolute time, as is well known, belongs to Newton. So, the situation with the "car-time" which has been examined higher tells us that we should return to the idea of absolute time of Newton at a new stage of knowledge about the world. Let's summarize our conversation.

10. The physical meaning of the act of Creation.

The idea of the Big Bang has exhausted itself. The answer to the question: who and what blew up, turned out to be unbearable for her. And, most importantly, not in destruction, but in creation it is necessary to search for the meaning of Creation.

The physical meaning of the act of Creation consists in the realization of the Divine Plan (Logos) - the transformation of the world from the state of spirituality (inertia, timelessness and eternity) into the world of Reality, through the materialization of the original spiritual essence (the Thought, the "Word", the Plan ...) of the Creator (Demiurge), through slowing down instant speeds of the movement of the essences of the spiritual world to the real speeds of the processes of the material physical world, through curbing, the formation and conservation of their unlimited power in form of materia. The process of the Creation of the World goes exclusively along the path of deceleration (inhibition) of all processes. The beginning was served by Thought (Word, Logos ...) of the Creator.

Time manages the physical process of Creation!

Time management is the simplest, fastest, most effective and creative way to manage by the world on the way from the "Word" that was "in the beginning" ... to the real and future world, and also by the evolution, gravity, mass and inertia ... and by "spatially -temporal continuum", as it follows from a surprisingly simple, Divine relationship: $a = d^2S/dt^2$.

World time is an argument to all functions in our dynamic world. The time is an absolute inertial frame of reference for any motion in the universe.

The role of time in the world is fundamental and universal! The meaning of time consist in that time sets the mode of "inhibition" (of counteraction, deceleration ...), in the process of realizing (materializing) the Supreme Divine Idea (the Logos) in the movement of the world process from the Divine Thought ("The Word" was in the beginning"), from Eternity to Reality through induction of inertia!

Time affects everything, and we do not know how to affect time. **In nature, there must be a hidden mechanism of interaction between matter and time, perhaps the fifth type of interaction that is not known to science.**

If there were no universal, transcendental force in the world, generating inertia, manifested in the general restriction (slowing) of the speeds of all world processes and events, there would be no past, present, future, or world in this world itself ... **Namely, it is the universal inhibition of motion, the deceleration of all processes in the broadest spectrum of velocities, which starts from the biblical Divine Thought (Word!), through inertia, the orderliness of structure of the process to the reality of the greatest diversity of living and inanimate objects and to real velocities that we in a state to percept and comprehend by feeling and mind, - creates the World!**

Time is that primary transcendent force that establishes and directs the cause-and-effect connectivity of all world energy processes in direction to orderliness from the beginning of the Creation and to the end of the ages, and evolution. **Orderliness of matter in space and time ("negentropy") should be considered the main (Divine) form of conservation of energy of motion.** The time is the engine of the world process, which tracks and directs all its changes. Without the directive qualities inherent in time, the world order is not conceivable.

Time, it seems, is the same mysterious quantum-mechanical "observer", which in the most explicit way hourly (non-stop) realizes the reduction of myriads of wave functions: from state their superposition (from the future) time chooses reality (present), and leaves it in a frozen state forever (in the past) ...

The expression "The time has frozen in the stone" has the deep worldview sense. In a stone - this means in a state of right order !? And order in nature should be considered as a form of conservation of motion of "chronal" energy, tied with the "flow" of time.

But then we have the right to assume that under decompose, **degradation ordered matter (what is accompanied by a decrease in order and an increase in entropy), matter thereby returning the time into the universe (as an contribution !?)** Destroying the natural world order (burning one match, for example, or blasting an atomic bomb), we, by this, return the time ("chronal energy" into nature !?) If we do not question the conclusions of the theorem **Emmy Noether**, about the connection of energy with time then it should look like as that.

And further.

Our holistic Divine World (as scientists today thought up !?) has eleven degrees of freedom. Is this a lot or a little? I do not know. But scientists have missed one dimension all the same, and, perhaps, the most important dimensionality. **This may be the 12th dimension of our World, which crowns the mechanism of the Creation of the world, it is responsible for the logic (and mechanics) of the movement of information, or otherwise, for the Reasonableness of the World.** This is about what **Leibniz** in your time had called the "principle of pre-established harmony."

What is the purpose of Creation? The conclusion suggests such. If to consider the process of Creation in the direction from the "Word... which was In the beginning ...", to reality (which is most likely!), through the inhibition of the world process and the movement in the mainstream of the physical and spiritual laws and of three the Great Principles: of Causality-Temporality-Reasonability, through involution, the subsequent evolution of the material world, and then again to the Higher spirituality ... (as **Plato, Proclus, Plotinus, Hegel** was reasoned in his time...) **we should expect that over time, some collective, universal, intellectual and communication action, like our terrestrial Internet, which is rapidly gaining strength before our very eyes, and in due course, it should acquire an exceptional ability and opportunity for universal universal spiritual communication, a sense of the material shell at the conscious beings will gradually blurring, dissolve ... and, finally, will disappear, and we will be 100% spirits in the spiritual world, devoid of any inertia, with the teleportation of thought-images instead of the movement of bodies. If not now (!?), then at some final stage of evolution a world is possible in which there will be no movement in our usual understanding, but only a will continuous, teleportation guided by thought.**

The relevance of the arrow of time in our days indicates that the process of Creation the world is not complete.

But now - everything!

Let's sum up our research.

Conclusion or "Provisions to be defended":
Axioms of the Universe:

1. **Three great Principles, on which the Universe is built, are:
causality,
temporality,
Reasonableness.**
2. **One single route of evolution: fluctuation (nonequilibrium, tension, potency, energy ...) and relaxation (strength, time arrow ...).** Everything in this world, all processes, including the course of time, work according to this scheme.
3. **Uniform and rectilinear motion of processes has nothing to do with evolution, and only accelerated movement plays an evolving role**
4. **The fundamental (in our view) property of mass (gravitation) is not an immanent property of the physical bodies themselves.** Recognizing the universal coherence and integrity (holism) of the World, and proceeding from the fact that all known topical forces (including the arrow of time) on Earth and in the Cosmos are the response of nature to the imbalance, **this property should be regarded as induced by accelerated movement and persisting in bodies property - the potency to directional motion - inertia,** and, in fact, relaxation to the initial equilibrium state.
5. **In all cases, when it comes to the mass of bodies in the universe (inertial or gravitational, or other ...), we are dealing with a phenomenon of one nature, more precisely, with a certain form of translation and conservation of energy, which we call for convenience differently.**
6. **The nature of the gravitational and inert, and all other "masses" is one, it is conditioned by the universal connectivity of our world as a single process of Creation, and is a characteristic of the world dynamic coherence at different levels of the organization of matter.**
7. **Property of the inertia arises (is induced) in the bodies in response to the acceleration of motion, exists only in the presence of acceleration, and varies with the acceleration of motion.**

The converse affirmation is also true: the presence of properties of mass indicates that the body is in accelerated motion.

Invention ("fabrication") of the equivalence principle in the theory of relativity is superfluous. The physical essence of the space-time continuum lies in the properties of field of inertia.
8. **And not only property of mass, but also the usual sense of weight for us (that is, in the state of so-called rest) with which we entered a stationary elevator, or settled on a centrifuge, is also entirely the manifestation of inertia, that we acquired from birth , participating in complex accelerated motion, being in the womb of the mother, moving together with the planet Earth, together with the solar system, with the galaxy and, finally, with the Universe.**
9. **All the energy of the World concluded in the vortex motion of the Universe. Namely, to the vortex movement of the universe as a whole the world is obliged by its unity and integrity, movement and changes at all levels. The universe is a vortex-tornado**

10. **The presence of a universal centrifugal acceleration, the consequence of which is the accelerated dispersal of galaxies, creates the visibility of an inseparable connectivity of space and time in the Universe, which Poincaré, Einstein and Minkowski intuitively have felt and labeled it by a metaphor "continuum".**
11. **In turn, the phenomenon of gravity in the universe, which according to our hypothesis is a consequence of the acceleration of the motion of bodies in system of Universe, confirms, first, the fact of universal universal coherence, (holism) of the world, secondly, the fact of accelerated dispersal of galaxies.**
12. **We and the world around us are the effect of time. Time is one of the three Greatest Divine principles governing the world, which maintains the temporality of the world. Nothing else in importance, magnitude and power, with the exception of the power of the Higher Reason, can compare with it. Time have take out "us" (and the world around us) out the cold, immobile, dead Eternity to light and life, and leads to perfection. Time is not otherwise as the "God's finger"! - a special degree of freedom.**
13. **Time is in everything. All materia in this world has inertia with respect to the motion of time. We learn its properties in manifestations, thanks to the developed in living matter ability to remember, compare, distinguish, inherent in its ontogenetic consciousness.**
14. **Life and evolution are bound to acceleration in ISO, related to the world time. In order to live, we take time in the Universum: we spend energy - get time and life; and we are living, only when spending energy ...**
15. **The phenomenon of "life" - an hourly struggle for time!**
16. **All of us are in an inertial "carriage-time" moving (as say) "uniformly and rectilinearly", and therefore (like in a carriage with curtained windows) no one do not notices of this time, not any devices cannot measure it absolute move, and cannot influence it.**
17. **The absolute inertial frame of reference of our entire Universe is a system tied to the World Time.**
18. **The presence of the arrow of time (in its various manifestations) indicates the movement of the world toward a temporary equilibrium. By analogy with others analoging chances, we are entitled to speak about the reason for this - the presence in nature of special, "chronal energy", and, at the same time, the law of conservation of time.**
19. **The destruction of the natural order is associated with the return of time to nature.**
20. **The sacred meaning of the act of Creation from begining is creative, not destructive, it is conditioned by the Higher Causality, Temporality and Reasonableness.**

Approximately so I imagine to me the nature of mass, gravity, inertia ... and time, and everything that is connected with this in our world.

It seems that it was this problem that haunted the great thinker and scholar of the 20th century, **Albert Einstein: "I will send you a new edition of my book,"** - writes **Einstein to Solovine**. - **"the essence of the theory of relativity", in which the generalized theory of gravitation is presented in a new edition. Of course, this work is an attempt to create a unified field theory, but I would not like to publish a book under such a pretentious title, because I do not know if my theory contains physical truth. "**

P.S. The Higgs bosons, which are now in vogue, are just another, very beautiful, but excessive metaphor that clutters the explorers' path to truth, in short, the "Higgs idea!".

"Gravity doesn't exist."

/Erik Verlinde/

Greeting greetings to **Lev Borisovich!**

- You, of course, are right, dear **Lev Borisovich**, indeed, you cannot say that the mass of a body depends on the speed, or rather, the quality (property), that we associate with the concept of mass - the measure of inertia, gravitation - completely depends from acceleration, moreover, is generated (induced) by acceleration! [12]

"A kinematic, non-dynamic understanding of gravity is impossible" - these words also belong to **Einstein**.

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