

The Physics of NOW

EXPERIENTIAL CONSCIOUSNESS RESEARCH

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Prologue

...there is something essential about the NOW which is just outside the realm of science. People like us, who believe in physics, know that the distinction between the past, present and future is only a stubbornly persistent illusion. The most beautiful thing we can experience is the mysterious. It is the source of all true art and science.

Albert Einstein

The Physics of NOW: A. S. Šorli
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FOREWORD:

The most important goal of contemporary Physics is certainly the unification of Einstein's Theory of Relativity and Quantum Mechanics. This is also the hardest one substantially because the two theories are based on incompatible concepts of space and time apart from the different application scales. This happens since General Relativity is based on general covariance principle, while Quantum Mechanics on superposition principle that are theoretically incompatible. The main difficulties arise because in the Theory of Relativity space and time are interpreted as physical coordinates of the fabric of reality, namely the space-time, inextricably related and relative to the observer's motion, while in Quantum Mechanics time is an absolute mathematical parameter external to the physical system described by a wave function that "lives" in a mathematical abstract space, the Hilbert's space, having no direct reference with the physical space we experience. For this reason the unification of the two theories in a feasible "theory of everything" has to deal with this crucial aspect: it is not clear if whether it is more appropriate to abandon the point of view of GR or that of QM, but certainly a solution could be found only by a deep reinterpretation of the meaning of space and time. During the last years several approaches to this problem have been proposed, some of which based on the denial of the existence of space or time as fundamental physical entities. The theory of entropic time or that of thermodynamic time derived from loop quantum gravity are only two of the most known examples for what concerns the time. More recently the possibility that also space is emergent from a more fundamental reality have been theorized as, for example, in approach of entropic origin of space and gravity from holographic screens or in the interpretation of General Relativity as the hydrodynamic long-wavelength limit of an underlying microscopic structure. In any cases, all these theories assume the existence of a minimal space-time structure whose features

however still remain obscure. For this reason the “ultimate” theory that, unifying GR and QM, will give us a deep and complete picture of Reality will be that able to characterize this most elementary structure or, in other words, the entity called quantum vacuum. But also without demanding the unification of the Theory of Relativity and Quantum Mechanics, each of these two theories, individually taken, is characterized by the presence of several aspects still not entirely understood. In special relativity, for example, the interpretation of proper time, as well as the effects of time contraction and length dilatation for two observers in relative motion may lead to contradictions; another open question concerns the ontological foundation of the postulate about the invariance of the speed of light and the origin of the equivalence between mass and energy. Even more serious problems arise from the quantum realm as, for example, the interpretation of quantum entanglement, as shown in the famous EPR paradox, the “duality” wave-particle and the ontological role of the conscious observer in the measurement process. At a very deep level, all the current interpretations of these phenomena are potentially characterized by possible misunderstandings due to the absence of a coherent and complete theory of quantum vacuum or the elementary structure of reality. In this excellent essay Amrit Sorli exposes an innovative approach to this problem as simple as interesting, according to which universal space is composed by elementary Planck volumes, constituting the fabric of physical reality, in which time plays the role of a mathematical quantity giving the numerical order of change and no longer represents the fourth space-time coordinate. In this picture only the granular tri-dimensional space, made of fundamental units of space, the “Planck volumes”, and its energy density exist as fundamental physical reality and determine the “Physical Universe”, while time would belong to the so-called “Mathematical Universe”: the reality is then made by NOWS that exist in a timeless universe. In this framework gravity and inertia naturally arise as variations of vacuum energy density whose gradients should determine the relative velocity

of material changes in the Universe. All this lead to a very interesting picture of a Universe in a dynamic equilibrium in which the energy of universal space in a given volume is constant. From this simple statement it is possible to derive, in principle, the dynamics of the observed physical phenomena as, for example, the curvature of light near the planetary masses, the property of black holes, as well as the “strange” effects provided by special relativity about times and lengths as viewed by observers in relative motion. But one of the most interesting features of this model consists in its applicability to quantum phenomena, making it possible to explain, in a very simple fashion, phenomena such as the action at a distance, quantum entanglement or the double-slit experiment showing the particle - wave nature of light. The subdivision of reality into a Physical and a Mathematical Universe allows Sorli furthermore to define the conscious observer as the only universal reference system at rest and consciousness as acting through the mathematical universe and DNA into the level of the physical world, a very fascinating hypothesis with respect to the elaboration of a theory of mind, as already proposed by Penrose some years ago, according to which it could be not possible to reduce the mind to the activity of physical brains, since thinking cannot be a pure algorithmic process, but a potentially not – local phenomenon. In conclusion we can define this essay as a very exciting intellectual challenge containing a powerful theoretical starting point towards an ultimate “theory of everything” that, if adequately improved and refined mainly through the elaboration of complete dynamical theory of this new quantum vacuum, could be able to give answer to the most important questions of Physics and contribute to the emergence of a new humanism in which mind and matter (and energy) finally could be viewed as different aspects of the same fundamental reality.

Rende, August 2, 2013
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1. Time we measure with clocks has only a mathematical existence

Every view of the world, as well as any physical theory, offers only a limited perceptual view. This is because our view only extends to the edge of those perceptual horizons. With growing knowledge and the expansion of our own internal horizons, we can see and experience deeply than before. This is similar to how in physics every new theory extends and expands the horizons of our understanding and our experience of the universe and life in general.

Often in everyday life, we will refute old views and we replace them with newer views that better suit us; newer views that can afford us further development. In physics this is rare. Old theories are not generally refuted and simply cast off. In physics the old theories are enfolded into the new theories which are more universal in nature. This is one of the many beauties of physics.

An illustration of that point, what we think of as "Einstein's physics," explains the precession of the planets which the "Newtonian physics" failed to explain. However, "Einstein's physics" does not need to *negate* "Newtonian physics" but rather it puts "Newtonian Physics" in a larger context and simply extends and expands its horizons. Thankfully, physics has the mechanism of permanent and recurrent "self-checking". That is, every thesis is confirmed by experiments in which the phenomenon in question is measured with appropriate instruments. Physicists then check to see if the results obtained via measurement correspond to the theoretical postulation.

One defining feature you find in physical theories is that the verification of the validity of the theory will include an option that the whole thing could be wrong. In physics, there simply are no "absolute truths". It is understood that all valid theories describing phenomenon can be improved upon. A particular, given theory is only considered valid as long as some new experiment proves that it is not valid to describe a newly discovered phenomenon. Physicists will then go on to refine the new horizon-extending theory in order to include the newly discovered phenomena and back it up with advanced mathematical models.

We can find a good example of this pattern of development of theories in the history of the understanding of the speed of light. Around the end of the 19th century, physicists discovered that light has a constant speed. The speed of light was found to be unchanged regardless if you moved towards or away from the light source. Newtonian physics was not able to describe this extraordinary property of light. Physicists began to think about a new mathematical model to describe the constancy of the speed of light. German mathematician Hermann Minkowski went on to develop a four-dimensional geometry, where the fourth dimension X_4 is a product of time and the speed of light. Einstein then took the baton and applied this model to describe the speed of light as a constant for the stationary and moving observers. In these theories, physics had won another victory. However, a byproduct of this same victory was that an inherent misunderstanding arose. Unfortunately, physicists began to see time as a fourth dimension of space. Even though a mathematical model of Minkowski's confirms that the fourth-dimension known as X_4 is the product of time, and imaginary number i , and the speed of light: $X_4 = ict$. This formalism however, clearly reveals that time "t" is not the 4th dimension of space known as " X_4 ". Physics in the early 20th century felt that the space-time fabric was the fundamental "arena" in which the universe existed. Yet, the idea of time as a fourth-dimension of space has never been truly verified experimentally. I don't think most physicists are ready to face this fact.

A century after Einstein, I have created a new mathematical model of time, where time is essentially and simply a numerical order, i.e. the sequence of changes in the universe. For the basic "arena" of the universe I have chosen the three-dimensional universal space, which was designed a century ago by the German physicist Max Planck. Planck believed that universal space consists of three dimensional and fundamental units of space l_p^3 :

$$l_p^3 = \sqrt{\frac{(\hbar G)^3}{c^9}},$$

In the equation above \hbar is the reduced Planck constant, G is the gravitational constant and c is the light speed. You can imagine universal space being composed out of very small bubbles, which are connected.

In a three dimensional space time t is measured with clocks. Time is only the numerical order of change, which is only a mathematical quantity. I do not deny the existence of time, I simply ascribe to "time" a new meaning: time is not the fourth dimension of space in which the changes occur, time is just a mathematical sequence of changes that are taking place within the three-dimensional space of the universe. Here below we see the fundamental unit of time which is known as Planck time t_p :

$$t_p = \sqrt{\frac{\hbar G}{c^5}} .$$

To elucidate this notion even further, a photon is moving through space only, not through space-time. The smallest distance photon can travel is the Planck distance l_p :

$$l_p = \sqrt{\frac{\hbar G}{c^3}} .$$

Each Planck distance l_p that photon is passing at light speed c corresponds to exactly one Planck time t_p :

$$c = \frac{l_{px}}{t_{px}} .$$

Measured time t is the sum of all Planck times t_p :

$$t = t_{p_1} + t_{p_2} \dots + t_{p_n} = \sum_{X=1}^n t_{px} .$$

This new conception of time widens the perceptual horizon of Relativity. It successfully describes the type of phenomena that the out-dated space-time model failed to include within its framework. Taken within this new contextual view, time becomes a mathematical quantity that exists in the universe independently of physicists and their measurements. Some physicists like American physicist Max Tegmark, postulate that mathematics exists in the universe independently of the human mind.

Ultimately, such thinking really broadens the horizons of physics, since it assumes the existence of a "mathematical universe" which is not based on matter or energy. Today, physics recognizes that matter and energy are the *only* possible forms in the universe. I developed a model in which time is not matter, nor energy, but it still very much exists as a quantity within the mathematical universe. For physicists, and also for people who are not physicists, this is a novel idea, because we were all taught Einstein's famous formula $E = mc^2$, as well as its implications, that everything that exists is a form of energy. And that furthermore, all matter can be converted to energy and vice versa. Of course, in this context when we talk about "energy", we are referring to both the entire spectrum of electromagnetic radiation and the energy that manifests the totality of universal space. Today's physics is based upon a bivalent logic: a phenomenon can be A (matter) or B (energy).

Trivalent logic, which was developed in the last century by Polish mathematician Jan Lukasiewicz, permits that a thing can be A, B or even C. A mathematical universe is a phenomenon that is part of the phenomena referred to as "C" in trivalent logic.

The outdated model of space-time where time functions as the 4th dimension of space and the fundamental arena of the universe is based on a misinterpretation of the mathematical model of space-time of Minkowski. Instead, I propose that the "basic arena" of the universe is a granular three dimensional universal space composed of fundamental units of space called "Planck volume". This model is based on the fundamental physical constants of Planck mass, Planck length, Planck volume and Planck constant; all of which are derived from experimental data and therefore reflect the basic properties of the universe. Fundamental physical constants are the cornerstones on which we can build a new horizon within physics.

2. A critical survey on Higgs boson and graviton

To really understand how the universe functions you really need to have a clear understanding about what is mass. We know that in everyday life the mass of an object is measured with scales. In physics however, mass is a bit different. Understanding mass in physics is a bit harder to grapple with and more complex than understanding mass in everyday life. The standard model attempts to describe the four elemental forces in the universe with a variety of elementary particles. For example the graviton is a hypothetical particle which we now suppose to be the carrier of gravitational force yet is still as of now, undiscovered. The Higgs-Boson particle is another particle that we are still learning a great deal about. It is theorized that the Higgs-Boson particle is responsible for the mass of individual particles, however, as they say, the jury is still out on that and opinions vary within physics regarding this presumption. The great weak point regarding Higgs-Boson theory is “who” or should we say “what”, creates the mass of the Higgs-Boson particle itself. This question has not been fully answered yet. It is also not clear how Higgs-Boson particles interact with photons.

In physics, there are really just two concepts of mass. The first concept is “inertia mass”. This is the idea that a particular particle or material body has a quality of stability that keeps locked in at a specified location. If you want to move a mass you need to push it and to use some force. On the other hand, this same “inertia mass” will mean that when the body is moving, it has the tendency to keep moving forward. If you want to stop it, you will of course need a commensurate resistance suitable for that particular volume of mass. The second concept of mass in physics is “the gravitational mass”. This is the mass, which generates around a particular body, the gravitational force which will then attract surrounding bodies. Experiments have shown that the inertia and gravitational mass of particles or material bodies are exactly the same; however, their origins still remain unknown.

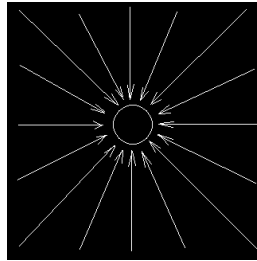
Here, in my own postulations I have gone a step further; I have developed a model where both mass and gravity are sourced within the energy density of the universal space. Far away from the celestial bodies energy density of universal space ρ is at the maximum:

$$\rho = \frac{m_p \cdot c^2}{l_p^3},$$

where mass m_p is Planck mass, l_p^3 is Planck volume and c is light speed. In the center of the celestial body, the energy density is reduced by the value, which corresponds to the size, that is to say the mass of celestial body:

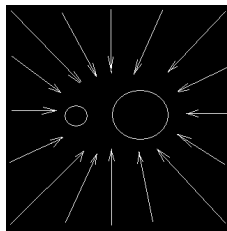
$$\rho_m = \rho - \frac{m \cdot c^2}{V},$$

where m is the mass and V is the volume of a stellar object. The surrounding denser space puts pressure on the diluted space in which lies the massive body and thus creates its “inertia.”



Inertial mass

When two or more bodies come together this creates an area of lower density space. The outer space which is of higher density then puts pressure against the space occupied by the celestial bodies. This pressure coming from outer denser space towards lower denser space is then indirectly transmitted onto the celestial bodies. They are pushed together. This creates the force we call “gravity”.



Gravitational mass

So really, the two bodies are not attracted to one another directly. Gravity is actually created indirectly by the bodies’ own masses reducing the density of space and thus drawing this pressure towards them from outer more highly dense space. The environmental space of one body is inextricably linked with the environmental space of another body. The bodies are interacting with each other indirectly via the space medium in which they coexist.

According to my opinion antigravity spaceships are not only science fiction. Antigravity technologies increase or decrease energy density of space. With increasing energy density of space happens that spaceship is not pushed any more towards the stellar object from the side of outer space. On the contrary it is pulled up in the outer space. The “bubble” of higher energy density of space around the spaceship has tendency to move towards the area of outer space with the equal energy density. By decreasing energy density of space spaceship will move in the direction towards lower energy density of space, means towards the chosen stellar object.

2.1. A permanent dynamic equilibrium of the Universe

Universal space is structured from Planck volumes, which are the smallest unit of volume of space. Interestingly, space density is at the absolute maximum out in the empty space between galaxies. This is due to the high pressure energy of space structures in the “cosmic rays”; as they are called by the American physicist Michael W. Friedlander. Cosmic rays are then formed into elementary particles and atoms. In the center of black holes the density of universal space is minimal as matter is transforming back into the energy of space. In the universal energy circulation the space to matter ratio is constant. The universe is a system in a continuous dynamic balance.

The universe is really a self-renewing being in its own right. It does not have a beginning nor does it have an end. The universe was not created by God, the universe itself *is* God. The big bang theory, which assumes that the universe started from an infinitely small point, has some incomplete logic. The only acceptable model of the big bang theory of the universe is that it is actually a cyclic shaped universe which is expanding. The theory is that at some point it will stop expanding. It is theorized that at some point it will start to shrink into a huge black hole and then ultimately it will explode into a new big bang.

Truly, the big bang theory that models the universe as having a final diameter simply does not have a solid foundation. When you say the universe has a finite diameter, you are de facto saying that the universe itself is finite. Really, we do not know what is on or beyond the finite or known edges of the universe. Cosmologists claim that the infinite space of Euclidean geometry and the spherical

space of Riemann geometry are equivalent. Yet, our own logic and intuition tell us that universal space is infinite. In mathematics, the concept of “infinite” is not a metric concept. In geometry an infinite distance plus 100 kilometers is still an infinite distance. The model of the universe as infinite aligns more with natural human reasoning, because it clearly points to the fact that the size of the universe as can be comprehended by human faculties is for all purposes unfathomable. When we are saying “the universe is infinite”, this means that the dimensions of the universe are beyond the power of our imagination and conceptualization.

In order to understand the overall dynamic of the universe we can observe the part that is accessible to us and from those observations we can conclude that even the rest of the universe operates according to the same laws. This view is more honest than the view that assumes that the universal space is finite. As a wise East Indian friend of mine named Amin once explained: “The universe is not a melon.” (He got the picture.)

3. Relative velocity of material changes has its origin in the space density

The period between the end of the 19th century and beginning of 20th century has been a landmark period for physics. In 1887 the American physicists Michelson and Morley conducted an experiment which showed that light is not a wave of ether. In the physics landscape of the 19th century it was well accepted that universal space is filled with ether, a media which does not have mass, is in full rest and is present throughout the universe. Visible light and the entire spectrum of electromagnetic radiation were supposed to be a ripple of that ether. As a result of the Michelson-Morley experiment the ether theory was entirely and perhaps unjustly discarded. Michelson and Morley were simply attempting to prove that light is not a wave of ether. It was not proved that the ether did not exist at all. It could be that the concept of ether was simply another name for cosmic bio-energy, which is also still outside the current accepted scientific model of the world.

After the publication of the Special Theory of Relativity, the scientific community came to believe that light travels through empty space. Physicists either forgot or ignored that even the space itself is an energy medium or fabric.

So light is traveling through a form of energy; space. Max Planck's idea that universal space consists of small discrete units did not come to the fore. With Italian physicist David Fisaletti, we have "resurrected" the ideas of Max Planck.



Amrit Srečko Šorli (left) and David Fisaletti in Tuscany back in 2009. Founders of Space Life Institute back in 2000. Main research subjects: time, gravity, cosmology, Theory of everything (TOE) and experiential consciousness research (ECR).

We chose three-dimensional universal space as the basic natural arena of the universe. This natural view resolves many problems within physics. Some I have already described in the previous sections, other issues I will expand on here, presently.

One of the other issues that our new simplified three dimensional view clarifies is Einstein's "problem of action at a distance" which he posed in 1917, one year after the publication of the General Theory of Relativity in which Einstein has "geometrized gravity" describing it with the spherical geometry of the German mathematician Riemann. His General Theory of Relativity was to put it mildly a great triumph of physics. A geometrical description of gravitation did not completely satisfy Einstein. Despite the fact that he was a pioneer in "mathematical theories", he had a great sense of coherence between mathematical models and the de facto truth of physical reality that a model describes.

I believe Einstein had an ongoing direct experience of consciousness, which inspired him in his research. Consciousness, however, intuitively knows that the geometry of the cosmic space cannot create a gravitational force; a source of gravity must be a concrete physical phenomenon. In order to meet "gravitational

functioning at a distance”, Einstein started thinking about the existence of the “graviton”, a particle that is similar to photon and responsible for the transfer of the gravity between material bodies. At this time, in the beginning of the 20th century, photons were already known to exist, and that matter both emits and absorbs them. It was understood that photons are bearers of light as well as the full spectrum of electromagnetic radiation. Today, the graviton rests as a hypothetical particle which no one has yet observed. Its existence is still a question mark for physics.

In the third chapter we showed that gravity can be described via the energy density of universal space, which does not provide for the existence of graviton, i.e. the gravitational waves. Physicists today think that gravitational waves spread across the universal space with light speed. For sixty years they have tried to detect them with very sensitive instruments to no avail. Italian physicist Angelo Loinger proved that the existence of gravitational waves would contradict with the original version of the General Theory of Relativity. That said, most physicists remain unconvinced of Loinger position and they avidly look forward to the discovery of the graviton particle. So far, the graviton has been proven to some degree, but only in indirect ways which as far as physics is concerned is not sufficiently in line with empirical scientific method. The existence of the graviton particle as a physical phenomenon can be considered existent only when it is finally directly observed.

In 1974, the American physicist J. H. Taylor, along with his research group, observed a binary neutron star called PSR 19.16 +16. They noticed that the rotational speed of binary stars around their axes diminishes over time. This is a fascinating observation and result yet their interpretation of the data was questionable. They attributed the decrease of rotational speed to a reduction of the binary stars’ masses. I believe this interpretation is flawed due the defect in the procedural method used in which the reduced masses were considered to be due to gravitational radiation. This was never experimentally confirmed. Fiscaletti and I have an altogether different idea: in general, the size of the binary stars is close to the size of black holes. It is possible that like in the center of black holes, in the center of a binary star, matter is being transformed into the energy of universal space. In this theory the conversion issue causes a reduction in mass of binary stars and thereby reducing their rotational speed.

The model of space-time as the basic arena of the universe certainly will never be able to describe all the discoveries in physics, because it is just a mathematical theory and not a physical theory. I think, if Einstein before his publication of the Special Theory of Relativity in 1905, could have chatted with Max Planck and discussed the relationships between the Special Theory of Relativity and Planck's own idea of the granular structure of space, they would probably have come to the conclusion that the relative speed of physical phenomena depends on the granular density of universal space.

In the universe we have three different types of energies: the energy of the space (E_s), the energy of matter (E_m) and electromagnetic energy (E_{el}). With Fiscaletti, I am building a cosmological model of the universe which is in **dynamic equilibrium** (cosmological model **UDE**) whereby dark energy is the energy of space. In physics the energy of each system must have a homogeneous distribution. This means that the total amount of energy in a given volume of universal space is constant. It is always in the following proportion $E_s + E_m + E_{el} = K$. Therefore, it follows that where matter is present, the energy density of space is lessened and vice versa. Within this picture of the universe, the speed of physical phenomena will depend on the energy density of universal space and it will be reduced due to the presence of massive celestial bodies. Correspondingly, the lower the energy density of the universal space is the slower the speed of physical phenomena.

Additionally, electromagnetic radiation can reduce the energy density of universal space. Even though a photon is a particle without mass it too reduces the energy density of universal space as well due to its kinetic energy. This issue is yet another area not yet incorporated into the current framework of the Higgs-Boson theory.

4. Mathematical universe is a medium of quantum entanglement

Universal space where time is just a mathematical sequence of movement, elegantly explains the famous “Einstein-Podolski-Rozen” experiment (familarly recognized as the “the EPR experiment”). The three scientists were working together at the beginning of the 20th century. They assumed that the quantum particles are interconnected in a way that allows them to access instant information. In the previous century, the EPR experiment was often tested and proven to be valid and it was determined that was indeed the case. For example, if you take two particles, which are first together and then send them traveling in different directions. The distance between particles will increase and then when you measure the spin of the first particle it will be to the “right” and the spin of the second particle will be to the “left”. According to the Special Theory of Relativity the speed of light is the maximum speed with which information can travel. Yet in the EPR experiment the transfer of information is instantaneous, so the traditional Special Theory of Relativity cannot explain it.

In the model of the universe I developed with Fiscaletti, the “mathematical universe” itself is the direct medium of the information between the particles. The mathematical universe simply “knows” about the spin of the first particle and so it instantly informs the other particle how to rotate. Additionally, the classic EPR experiment shows that the universe has a tendency toward developing symmetry and harmony as the opposite spin of the particles is determined by the laws of symmetry.

In the mathematical universe the transfer of information is instant. In the material universe, at the scale of photons, information spreads at the speed of light. Interestingly, once we get to the scale of atoms and molecules the speed of information will always be less than the speed of light. We need to keep in mind that consciousness is not information. Consciousness is manifesting and acting through the mathematical universe and DNA down into the level of the material world.

Within this context, the human thought process is not an “energy phenomenon” carried by the electromagnetic waves as many people imagine. Thought is rather a phenomenon that belongs in the realm of the “mathematical universe”. When a thought arises in the mind, it is immediately present

throughout the universe. Therefore, thinking has tremendous power. Any thought impregnates the entire universe. With thoughts and potent visualization you can eliminate certain physical problems in the body, you can “create” your life. When the mind is linked with consciousness harmonious thoughts are created. When the mind is subject of its own egoism, destructive thoughts are created. Emotions are an actual “energy/material” phenomenon, tied to the secretion of hormones on human physiology. Emotions have the power to be able to create certain thoughts, while on the other hand thoughts always generate certain feelings. For example, sadness comes from destructive thoughts and conversely, your happiness is borne of your more creative thoughts.

Telepathy takes place via a mathematical universe between two or more minds. Using the vehicle of intuition, one can travel through the mathematical universe medium and obtain information on the psycho-physical condition of another man or some situation out there in the material world. Trained people are able to see what is going on at the other end of the planet or even other planet. Some claim to even be able to perceive via telepathy what is going on in other solar systems.

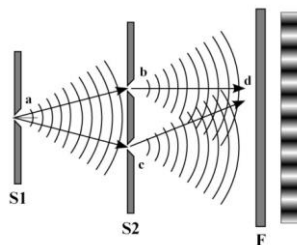
While the material universe is three dimensional, the mathematical universe is multi-dimensional. In math we can also have a space with an infinite number of dimensions. When mathematicians started to discover multidimensional spaces, some physicists thought it also applied equally to the material world. They did not understand that mathematics is neither energy nor matter. It is rather a phenomenon that exists beyond the material universe. Mathematics is not a product of the neural processes in the brain which are material and three dimensional. If this were so, the mathematicians could develop only three models of a three dimensional space.

Futuristic writers have tried to postulate a reality of “parallel worlds” where worlds should and/or might be parallel to our own universe. They have imagined that there could be alongside our own universe another universe, in another dimension, that we cannot observe directly because of the dimensional schism. Such reflections are the result of a fundamental lack of understanding about the true nature of material universe; that it is three dimensional and does not tolerate the existence of parallel universes.

5. Unification of the “double nature” of light

Our model of the universe gives a new understanding of the dual nature of light. Light is a bit of a chameleon, it sometimes behaves like a particle and sometimes it behaves like a wave. This double nature of light was originally supposed to be the result of the mode of observation, that is, specifically, when you are looking at it like a wave, it behaves like a wave, when it is observed as a particle it behaves like a particle. In our vision, the photon is at the same time both a particle and a wave. A photon is transmitted by an electron in its transition from a lower to a higher energy state. For example, when iron is heated it starts to glow which is the manifestation of the release of photons. Photons spread out in all directions and travel in space. The movement of the photon creates waves in space much like a ship does when it is traveling through the sea. However, in the case of the photon, the “ship” cannot be considered separately from the “wave of the sea”. This is the missing law of quantum mechanics: “Elementary particles and the space into which they move are one physical reality”, they are one great fabric.

The nature of this simultaneous particle/wave nature of the photon is confirmed by the double slit experiment. In the image below you can see that the photons have their origination point (marked “a” in the illustration below). From the origin, if we send photons one by one, they will travel through the left and right slit alternately (marked with “b” and “c” in the illustration below,) this creates on the screen a significant interference pattern (marked with “F” in the illustration). When the traveling photons only make it through the left slit b, we get the same interference pattern, because the waves of space created by moving the photons went also through the right slit c. Physicists have not yet definitively explained this phenomenon. The experiment teaches us that waves of space are created by the single photon’s motion and that it will always travel through both of the slits.



Double slit experiment

The frequency of light is associated with the movement of the light source and of the observer, and with energy consumption which the photon uses for movement. When a light source moves away from the observer, light reduces in frequency. This is what is called “shift to red spectrum”. In the sixties of the twentieth century this “red shift” was considered the main evidence for the expansion of the universe. Today, it is accepted in astronomy that about sixty percent of the “red shift” is due to a strong gravitational field through which light moves. So, photons which come from distant galaxies have reduced energy, because energy is spent as it “pulls out” from the strong gravitational fields of other galaxies. This latter interpretation of “red shift” has contributed to the overall reducing popularity of ideas about the expansion of the universe, which has in recent years seen fewer and fewer defenders. Of greater prevalence these days is a model of a dynamic universe without a beginning and end, in which, there is no need for a “creator”, as it is an “uncreated” system which stands in dynamic equilibrium.

6. New horizons of Relativity Theory: A conscious observer is a reference system at absolute rest

In the realm of physics, the observer is an integral part of the experiment. Speaking out of personal experience and the personal experiences of many other people who practice meditation, I can add that consciousness has the function of observation. Truly, in essence the observer is consciousness itself. The same consciousness is watching the world through the vehicle of the senses of individual men. Most people are experiencing the world tied and bound-up within the limited field of their minds. Consciousness, on the other hand, works only as an observer that cannot see its own origin. When you awaken into true consciousness, you recognize that the “observer” is a pure function of consciousness. Unfortunately, we have no experiential evidence in terms of the classical methodology to back up this claim because observation and the experience of consciousness are both subjective phenomena. It is noteworthy however, that thousands of people have had the experience that the observer is consciousness itself. I feel that the subjective experience of so many individuals has its own inherent credibility.

Let's do a quick yet convincing experiment: take a look at your palm. You know that this is your palm, without having to even think about it. Consciousness is watching your palm and knows that it belongs to your body. Close your eyes and your mind can create an image in your imagination of your palm. Consciousness can also be aware of this created image in the mind's eye. Your mind can create certain types of content on your palm in this present moment, for example: "I have a beautifully shaped palm." Consciousness is equally aware of the impressions of physical reality as well as these kinds of imagined thought formations.

Our minds are changing. Our feelings are changing. Yet the consciousness that beholds them always remains immutably the same. Consciousness is not part of changing world. It is an especially beautiful moment when consciousness is finally able to observe and realize itself. The more you are aware of your body and mind, the more you become consciousness itself. With the beginning of the subjective exploration of consciousness, physics will start to use consciousness as a research tool for discerning the adequacy of scientific models within the world. Knowledge gained at universities will be enriched with auto-reflection which allows peaceful development of human society in accordance with cosmic laws.

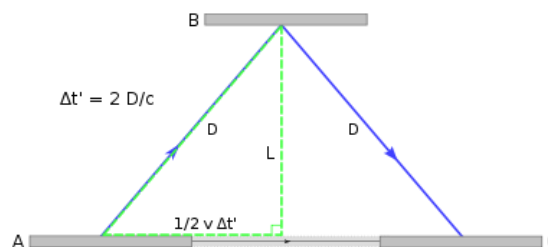
The personal experience that consciousness is the observer, watching the world through the vehicle of human senses and mind, is a spectacular realization. The conscious observer experiences the world directly outside the framework of psychological time of "before-now-then". For the conscious observer, changes happen in the "eternal now", or as Albert Einstein put it: NOW. A conscious observer is present in each point of space. When our body moves, the conscious observer remains the still point. A conscious observer is the only reference system in the universe that does not move and does not change, it is in absolute rest. This realization gives added dimension and elegance to the Theory of Relativity. The starting point of physics and its research is over time becoming one involving the observer/consciousness. He observes the universe, he supervises mind which builds models of the world; he examines the adequacy of models with physical world. The observer/consciousness is the same in each physicist and is giving physics another level of objectivity and a chance to be a truly "objective science", which exists independently of the human mind.

"Subjective experience" is tinged with personality, thoughts and emotions of the person's mind, whereas, "objective experience" is the experience of

consciousness itself, which is independent of the mind. Restated another way, “objective” is what we experience when we are grounded in the awareness of the conscious observer. Science in the 21st century is destined to develop an experiential spirituality cleared of all religious and historical convention, a spirituality which is based on direct experience of consciousness.

6.1. A conscious observer enables profound understanding of relativity

Even today, some parts of Special Theory of Relativity are not fully understood when looked at from the perspective of the conscious observer. A long-standing classic example of this in physics compares and contrasts how for an observer on the train station platform, time appears to run faster than it does on a moving clock on a passing train. The illustration below can be commonly found in physics textbooks, it illustrates how the observer at the station sees the vertically raised clock on the train.



Here we see the photons moving between two mirrors. For an observer on the station what is seen is photons are moving in a zig-zag fashion. This is true, and this particular issue is not in dispute. In all textbooks, physics shows that for the observer at the station, the rate of the clock in the train was slower than it was for the observer within the railroad car. It is taught that this is because the observer who remains on the station in actuality sees a longer path of photons than the observer standing next to the clock does. Yet, physics has largely ignored the fact that the longer path of photon is really just an optical illusion due to the movement of the photon clock and it cannot itself have any influence on the actual rate of the clock. In truth and reality, the rate of the photon clock is the same for both observers.

To expand on this notion further, let's consider the following. Suppose the observer on the station has a vertically positioned photon clock. The photon clock on the train will have slower rate for both observers but this is because of the diminished energy density of space caused by the kinetic energy of the train. This reduction in the energy density of the universal space due to the kinetic energy of the train, when compared with a reduction due to the mass of the planet Earth, is really so small that it is assumed within the Special Theory of Relativity that the speed of light is a constant in all moving systems and that the both of clocks have the same rate for both of observers.

In another example involving The Theory of Special Relativity, there is also a lack of clarity about rate of atomic clocks for the first observer. In this example there is observer (1) at the station and another observer (2) in the moving train. Observer (1) is at the station viewing a precise atomic clock and observer (2) is inside a train that has the same precise atomic clock. In this case, The Special Theory of Relativity says there are actually four times: two coordinate times (time as a fourth dimension of space), X_4 and X_4' , and two proper times t and t' , which determine the speed of the clocks. Coordinate times, X_4 and X_4' apply to both of observers, proper times t and t' are supposed to apply only to the individual observer. Time t is valid only for the observer 1 and time t' is valid only for the observer 2. This does not seem correct, however, the rates of both clocks are valid for both observers and this has been confirmed via GPS systems.

Because of the distance from the Earth energy density of space is increasing and is calculated in the GPS satellite with the following formalism:

$$\rho_m = \rho - \frac{m \cdot c^2}{V + V_1}$$

where V is the volume of the stellar Earth, V_1 is the volume of the sphere with radius d which is the distance of the satellite from the centre of the earth. Clocks that run on GPS satellites function at a greater rate than clocks on the surface of the Earth due to the increased density of space. This shows up as a discrepancy of 45 microseconds per day between the GPS driven clocks and earth-bound clocks. Because of satellite motion regarding the surface of the earth the clocks on the satellite are running at a slower rate for 7 microseconds a day. The density of space on the satellite is lower because of its motion, according to the following formalism:

$$\rho_m = \rho - \frac{m_s c^2 + m_s \cdot v^2}{V}$$

where m_s is the mass of the satellite, v is the velocity of the satellite with regard to the surface of the Earth and V is the volume of the satellite. The final sum of the difference between rates of clocks is 38 microseconds per day. These facts apply to all observers in satellites, planes, trains and automobiles.

If we use consciousness as a research tool we realize that the train is moving in space and we know that time is only the numerical sequence of the clock “ticking” and that furthermore, this phenomenon applies equally to all observers. The moving observer grows older more slowly than the stationary observer. The rub is that neither of them are actually getting older in *time*, but rather, they are getting older in *space*. So again, the speed of ageing of the moving observer is less than the speed of ageing of the stationary observer. Such is our interpretation of The Special Theory of Relativity. Within which, the introduction of the density of universal space becomes a physical theory, and is cleaned of unnecessary mathematical formalism of the fourth dimension. This renewed Special Relativity can be described in a three dimensional Euclidian space. Lorentz’s understanding is thereby replaced with an old Galilean understanding. Time is measured with clocks and is only a mathematical quantity. To calculate the different rate of clocks it is best to use the formalism of the Italian physicist Franco Selleri:

$$t' = \sqrt{1 - \frac{v^2}{c^2}} * t$$

Newton believed that time passes at the same rate throughout the universe. In this thinking he was of course only considering the speed of physical phenomena. But remember, in Newton's physics, time is not considered a physical quantity in which changes occur and play out. It is in Einstein’s physics that time has become a physical quantity in which physical phenomena happen. This is, in my opinion, overall the greatest foundational flaw of today’s physics.

6.2. With Relativity Theory mathematics has overruled physics

The conscious observer is aware of the difference between the physical world and a scientific model of it. He is able to see the rate of compliance between the model and the real world. We will look at the use of consciousness as a scientific research tool in the case of Einstein's Special Theory of Relativity. Conscious observer sees that the Special theory of relativity is not a "physical theory" but rather a "mathematical theory". Isaac Newton's theory of gravity, for example, is a physical theory, because all the elements that appear in the formula for gravity are measured in physical world: the gravitational force F between two masses is equal to the product of the two masses m_1 and m_2 , and the gravitational constant G , divided by the square of the distance r between the centers of the two masses.

In the Special Theory of Relativity fourth dimension $X_4=ict$ is a product of the time t , the speed of light (c), and an imaginary number i , where i is the squared minus 1. No one knows exactly what a fourth dimension within the physical world is like. Most physicists simply believe in its physical existence; in physics, the "belief" is not enough. It is necessary for each claim to be confirmed experimentally. In the relationship between the Special theory of relativity and the physical world there is no "adequate connection" where each element of the theory corresponds to the exact element in physical world, as seen in Newton's theory of gravity.

The Special Theory of Relativity, which Einstein published in 1905, illustrated that the rate of clocks is slower in rapid flight, than it is on the surface of the Earth. In the sixties of the last century this was experimentally proven. At the time, most physicists thought that clocks ran slower because they believed that the fourth dimension of space in which planes fly, shrinks. No one has yet fully explained how the contraction of time as a fourth dimension of space affects the clock mechanisms themselves. I developed my own "physical theory" of Special Relativity, where "the relative speed of the clocks" depends on the energy density of the three dimensional universal space. If the plane is moving through the universal space, and not through the four dimensional space-time, the kinetic energy of the aircraft, which is a result of movement, reduces the energy density of the fabric of universal space, resulting in a reduction in the speed of the clocks

mechanisms, as well as a reduction in the speed of all other physical phenomena in an airplane.

The Special Theory of Relativity has other drawbacks for conscious observer. The first drawback is the predicted contraction of objects in the direction of movement, which leads to a contradiction. Let us suppose that we have in an aircraft two photon clocks. The first lies horizontally in the direction of flight, while the other is placed vertically. The photons travel between the two mirrors, one path of photons means one “tick” of the clock. Due to the shrinking into direction of flight, the horizontal clock would shrink and run faster than the vertical clock that would not be shrinking. The Special Theory of Relativity assumes that all clocks in an airplane run with the same rate. It is the contraction of the objects into direction of movement that leads to contradiction.

6.2.1. Diminishing of energy density of space diminishes velocity of light

In the “physical model” of Special Relativity there is no length contraction. The horizontally placed photon clock has the same speed as the vertically placed photon clock. Because kinetic energy of the aircraft further reduces the energy density of the universal space, both photon clocks will run a bit slower. The reduction however is negligible; the rule of constant speed of light is preserved. An experiment of the American Astrophysicist Irwin Shapiro has proven that when light travels through space with reduced energy density its speed reduces slightly. Back in 1964 Shapiro measured the reduction of light speed, when it travels between the planets Earth, Mercury and Venus. In between planets the energy density of space is smaller than it is in interstellar space. The reduced energy density of space due to the kinetic energy of the aircraft and the reduced energy density that is a result of gravity are bridging both Special Relativity and General Relativity and this further illuminates the relational equality between inertial mass and gravitational mass.

Every year the planet Mercury gains in its orbit around the Sun. Newton’s physics failed to describe why this happens. Each year it travels on the boundary a little farther than was predicted by Newton’s theory. We have measured this and reliably know it has been overtaking (known as “precession”) in its orbit for the last 100 years that we have been watching. This concept of precession is actually

valid for all planets, however the farther away from the Sun you move, the phenomenon of precession decreases. Why is this? Einstein was able to accurately describe the precession of all the planets with a set of Equations of General Relativity. I, with my colleague Fiscaletti, achieved identical results with equations that describe precession as a result of movement of the universal space around the Sun. Universal space around the Sun is like an extended body of the Sun and it rotates with the Sun. The rotation of the universal space thus “pushes” planets in the direction of their movement and this results in the planets overtaking.

6.2.2. Time travels are out of question

Back in the thirties of the 20th century Einstein moved from Europe to Princeton, New Jersey, in America. Kurt Gödel, the Austrian mathematician and best logician of the 20th century also went to Princeton. Gödel and Einstein became friends and of course they did a lot of thinking and talking about physics. Gödel had developed the equations of General Relativity and realized that in theory it could allow travel back into the past. In the Gödel universe there are “closed time-lines” through which it would be theoretically possible to make this time travel. And yet, if this is so, in theory, someone could travel into the past, kill their own grandmother and then they would not be able to be born in the future, which is of course an implausibility. Gödel is simply not yet understood by most physicists. However, physicists continue to use derivations of his equations as evidence that time is a physical quantity through which it is possible travel into past.

Gödel’s ultimate purpose was to draw attention to the contradictory nature of travel into the past. He wanted to develop the General Theory of Relativity from being solely a mathematical theory into being a physical theory. A physical theory can have no contradictions, because it is based on actual observations of the real world, whereby all the key elements that appear in the equations are obtained by actual measurements.

With Fiscaletti, I built a model of the universe, where we could travel only through space and time as a numeric sequence of our trip. Also, travel through time categorically falls off the conceptual map because it does not withstand the simple fact that material objects can exist and inhabit only one place and cannot be in two places at the same time. Suppose that we miss the 6.00 departure time

for the train from Paris to Berlin. Instead we take a taxi to the airport and we then we fly in a spaceship through the Gödel time line into the past for two hours. Then we fly back to the airport, go to Paris, and look at the clock. It now reads 5.30. Serendipity! Now we have time for a tea. However, even if we make this journey into the past, the original train remained on its way to Berlin, it still continued onward in the same direction. So at 6.00 a train would not have appeared at Paris station despite our efforts.

Similarly, you can have a past-life regression and consciously relive an experience in a former life yet you cannot change the events that happened themselves. Our past and future lives are happening simultaneously in a context of a timeless universal space, here and now in eternity, where time is only a numerical sequence of changes.

The American physicist Sean Carroll has written a book “From Eternity to Here” in which, inter alia, he proffers that it is not possible to travel into the future, however it is possible to travel back into the past, but even still we can’t do anything to effect change in the past. For a “simple thinking man” his conceptualizations can come across as fairly absurd. Carroll was obviously laden with Gödel-like “closed time-lines”. This idea that it is possible to travel into the past, yet we can’t do anything to effect any change all becomes even more complicated and even more contradictory. I ended up writing him a letter explaining my viewpoints and joked that his book may have the title of “Eternity is Here”, but that the flesh of his book did not prove the point. Predictably, he did not seem to care to comment. Like most human beings, physicists often think that their views on the world are the most correct. Pure consciousness, however knows that permanent doubt in a theory is the biggest test of its validity.

Mathematical theories of the 20th century managed to describe most of the physical phenomena we know, while at the same time they have diminished the physicists’ sense of realistic thinking which should be tied at some point to the real world. Physicists today think about the physical world through mathematical formulas and models. It is as if in front of their eyes they no longer perceive concrete phenomena, but rather, only conceptual models of same. The use of consciousness as a research tool requires a more “physical mode” of thinking, where we are conscious of both the physical phenomena and of the model of phenomenon which it describes.

A classic example of this “mathematical thinking” in physics is, how the English physicist Stephen Hawking explains the theory about the big bang. In his book “Brief History of Time” he explains that the energy of matter in the universe is positive, therefore the gravitational energy is negative (in the context of this book gravitational energy is energy of space). The sum of both energies of the universe is always zero, which can be written as: $E_m + E_g = 0$. If both of these energies are present in the first moments of the big bang and you multiply them the product remains zero. Similar as $1 + (-1) = 0$, $2 + (-2) = 0$ and so on. If it is true in math, it is true in the phenomenon of life. If the sum of two adjacent integers (one positive, one equally negative) is zero...then I say to you...the universe simply cannot be created out of nothing. It cannot arise out of zero.

The next “text book case” of mathematical physics, which has lost contact with a physical reality, is the new so called “String Theory”, which in the last 30 years of development has not produced even one reliable result, which can be confirmed by experimental physics.

6.2.3. Quantum theory of consciousness makes no sense

Structure of the universe is following:

STRUCTURE OF THE UNIVERSE	
<ul style="list-style-type: none"> - consciousness which functions as the conscious observer - mathematical universe which is ruling material universe 	<p>nonmaterial universe</p>
<ul style="list-style-type: none"> - energy of the space (energy of quantum vacuum) - electromagnetic energy - matter - life energy (Qi, Prana) which existence in not confirmed yet) 	<p>material universe</p>

Quantum theory of consciousness makes no sense because consciousness belongs to the nonmaterial universe and is not “quanta” in a known sense of this word. Fundamental time as a numerical order of change belongs to the nonmaterial universe, emergent time as a duration of change is the result of the process of measurement done by the conscious observer.

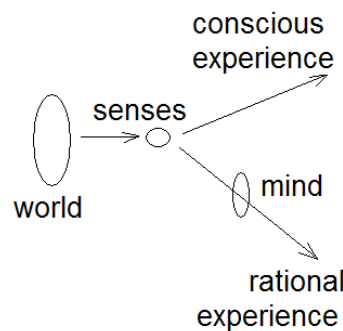
7. Experiential Consciousness Research (ECR): Exploration of consciousness calls for a new research methodology

I believe that time, like consciousness, has no material existence and thus I am inclined to model the universe in such a way that consciousness itself determines, via the mathematical universe, the manifestation of the material universe. In this view the structure of the universe is composed out of three elements: consciousness, the mathematical universe, and the material universe. These elements should not be viewed in a hierarchical manner or in a vertical sense, but rather as one fabric, coexisting in an indivisible and intermingling manifestation.

Science has been mainly researching consciousness in such a way as pertains to the exploration of elementary particles, atoms and the celestial bodies. First, we create a particular model with our minds which we then try to check for accuracy and validity. However, classical research methods are inadequate for thorough investigations on consciousness itself since consciousness is not a discrete objective phenomenon like an electron, atom or the planet. Consciousness is primarily a subjective phenomenon. Exploring consciousness with classic scientific tools is like eating your soup with a fork; you will stay hungry. All the existing theories of consciousness cannot outweigh one hour of clear and sentient observation of the mind that created them. Observation of the mind is a function of consciousness. With a regular observation of the mind, which we also call meditation, we “wake up” consciousness, observer in us evolves in conscious observer.

Sincere scientific research on consciousness requires a new perspective. It is necessary to create a new methodology to research consciousness, a method which will allow us to experience it directly. When we explore objective phenomena we experience observations of phenomenon via the intellect, which

experiences the world only within the context of linear psychological time “past-present-future”. A phenomenon is first detected by the senses. Then the information is transferred from senses to the brain, where it is processed by the rational mind within the context of psychological time. Finally follows the experience of the phenomena. When you begin to use consciousness as a research tool in and of itself, you become aware of the field that is a priori to the framework of psychological time. We experience information about particular phenomena purely just as it arrives within the medium of our senses.



Conscious experience and rational experience

Intellectual experiences are analytical, bound within time and quantitative by nature. Conscious experience on the other hand is timeless, qualitative and mystical; it reveals the true essence of the universe which is manifested in everything. Until recently, physics at large has pigeon-holed conscious experience as being “nonscientific”. Physicists have not fully grasped yet that conscious experience really is complementary to the rational experience; both of these methods can symbiotically enrich each other. Rational experience develops science and technology, while conscious experience develops self-recognition, responsibility and accountability to one’s fellow man and to nature.

The embodied realization that one is not simply mind and body, but consciousness as well, dramatically and radically alters one’s viewpoints and reference points. Unfortunately, it is not enough to simply read books about ethics, justice and peace, etcetera. These in and of themselves do not lead to man achieving the embodied conscious realization and conscious experience of the world which I believe is the only foundation for the further development of humankind. A physicist can explore his universe directly and experientially using consciousness as a research tool. In every physicist the same consciousness

observes mathematical universe and material universe and is aware about the difference between them.

The universe is an organism where consciousness, the mathematical universe and the material universe are three indivisible entities. Roger Penrose, the English physicist, conceived of consciousness as being simply the result of gravity upon the neurons of the brain. This model that I propose here goes beyond that base intracranial conceptualization and assumes that consciousness is *not* confined to the brain alone, as is assumed by most mainstream scientists.

Consciousness has inherent within itself a stable quality. If you observe it long enough you realize that while thoughts, emotions, and life situations change, the faculty of conscious awareness of these phenomena, in and of itself, does not change. Consciousness in and of itself is immutable and is not subordinate to physical laws. Furthermore, consciousness operates under the same principles in all humans. From the above given notions, we can plausibly make the intellectual leap that consciousness is not actually a part of the human personality structure, but rather, it is a force “above and beyond” human personality that penetrates down into human personality structure and actively works *through* it. Conscious itself is the one who is aware. It is both the subject and the object of its own self-same awareness. Consciousness is not bound by physical laws and thus it is always the same and stable.

Personality on the other hand is established in the brain. Brain is actual living-changeable matter. Yet, consciousness is not a form of “matter” or “energy” as we typically think of them. When the body dies, the mind *will* die, yet consciousness will remain unchanged. To awaken consciousness is to step beyond death and into eternity, which believe it or not, is here omnipresent in this very moment in which you are reading these words and sentences.

A notion of consciousness such as this ends the old concept of eternity whereby eternity stretches endlessly back into the past and infinitely far off into the future. Eternity, rather, is directly experienced and understood inside the current moment. Time is newly understood to be a simple mathematical sequence of events dotted within eternity. We are born in eternity. We live in eternity. We die in this same eternity. Unfortunately, we are seldom aware of this aspect of reality. When we correct our understanding about time and realize that time is

just a sequence of changes within eternity, it becomes clear that the universe is not actually happening within time.

In the process of the evolution of man, mind is developed first, from this then flows the development of rational thinking and finally the ultimate discovery of the field of consciousness itself. I believe that for today's man the realization of consciousness is an evolutionary necessity, which can ensure man's further development. Reason ruled by limbic animalistic rivalry and human egoism will only continue to lead humanity into chaos. Borrowing from the language of physics, we can postulate the following: "The only lever to reduce social entropy is the systematic development of the consciousness of each individual."

No country has yet directly invested in the experiential consciousness research. Those who are in power tend to only see with the "eye of reason", the eye of consciousness" is not open yet to most people, especially not to people holding worldly power. It is important to keep in mind that the negative energies of this plane, on this planet, are simply due to limited levels of conscious awareness. People are not inherently "bad" they are simply limited in their awareness. Bad and painful things happen as a direct result and out-pouring of that self-same limited awareness. Everything bad that happens is only due to the non-awareness of who we really are; which is creatures through which consciousness wants to realize its truth and nature.

In this exploration of human consciousness it is important to remain mindful of the fact that consciousness already functions as our ability to be aware of our body's movements, emotions, mind formations and actions. Consciousness, awake and alive within us, takes responsibility for our thoughts, feelings and actions. Simply being aware of what you think is not enough. It is a good starting point; however it is necessary to assume full responsibility for our thoughts, feelings and actions. Only then can a real transformation happen where we can rise up from the mud of our "personalities" and bloom into the lotus of "consciousness".

That said, I caution you however to not create any mental concepts of consciousness with your imagination because it will be false and illusory. Reason does not have the capability to make a true model of consciousness. Start with a regular meditation practice: be aware of your movement, breathing, feeling and thinking.

Another suggestion, transform your diet so that it does not require the killing of animals. Become a vegetarian. Start to enjoy more of the nutrients from the seeds of industrial hemp, lentils, soy and other plants that contain protein. Learn full diaphragmatic breathing. In diaphragmatic breathing the first phase is a *complete* exhalation, followed by deep inspiration from the diaphragm, which continues to inflate in the middle and the upper part of the lungs. Doing this you receive plenty of oxygen and importantly an intake of prana/qi, or rather, “cosmic energy”. You should also practice every day a minimum of least 30 minutes of physical exercise. Find a physical exercise or sport that you enjoy, this is optimal.

A really fruitful practice is to sincerely ask yourself at least once a day: “Who am I?” This classic question functions like a koan, putting your personality on the line in the crux of light and truth. Only your conscious being-self can wordlessly “answer” this question. In fact coming to an “answer” at all is not ultimately important here. What is important is your conscious being-self remaining present and aware of the process as it unfolds. Never interpret the impressions you receive in this process with your rational mind. Allow it to lead you to discovery of pure awareness of consciousness. Eventually you will see through the fallacies of the small self and its illusion, and you will see how your personality is like a reflection of the Moon on the lake, which you believe is true. To extend this analogy, when a cloud comes your moon-reflection is gone. The real moon in the sky, however, remains. Can you allow that cloud that obscures the false reflection to point you to the authentic Moon that is you?

Western scientific mind explores the Universe and life only within the framework of linear psychological time. A sensation of duration is a consequence of our experiencing the changes within the framework of psychological time. In physics, the duration of a given change enters into existence when it is being measured. There is no duration without a measurement that is done by the observer. For the observer who is experiencing within the framework of psychological time this duration is “real”, it has an existence of its own. For the conscious observer which is free of psychological time duration, it is only a by-product of the act of measurement, it has no independent existence. Changes in the universe, nature, and our lives simply take place in the NOW which is eternity itself. Conscious observer distinguishes between fundamental time which is a numerical order of change, emergent time which is duration of change and psychological time which is a mind model. Physics enriched with conscious observer will use consciousness as a research tool, but will also encourage the

development of a consciousness science within which the surveys of both the material world and the spiritual world will be balanced.

In western culture death is still perceived as the enemy. You are no longer entitled to die naturally. Medicine obliges itself to keep you going and alive at all costs regardless of the bioethical implications. This unnatural and unhealthful attitude and approach toward death is due to our not having direct experience of consciousness. We cling to our bodies, our fleshy residences, without taking advantage of the opportunity in front of us to work on the spiritual realization of the part of us that exists outside of time. The body is given to man as an instrument for his development. It is through the vehicle of the body can we recognize consciousness.

The more you become aware of your thoughts, emotions and body, the more you become aware of yourself as a pure consciousness. Full self-recognition of consciousness happened to Christ, Buddha, Bodhidharma, Lao Tzu, Mohamed, Osho, Mooji and many other spiritual masters. They have become the world's teachers.

The Buddhists call this situation of perfect functioning of the consciousness through the body "liberation". In the state of complete self-awareness there is no longer the duality of "I-world". The perception of the "I-world" duality is the result of the functioning of the limited egoically bound mind. It is my hope that Physics will learn to use consciousness as a research tool and this will in turn encourage the development of experiential spirituality on a larger scale. Philosophies which talk about Truth but never achieve or attain it dwindle out over time. The use of consciousness as a research tool will integrate the understandings of the physical material world into a single model of unified psychological and spiritual contextual understanding of the world.

I would like to see the systematic development of experiential spirituality in schools and universities in all countries across the world. Experiential spirituality is based on the idea that consciousness has the ability to be aware of the mind as it is functioning. It is important to consider that what we think of as "national identity" is not consciousness but rather identification of an individual with a larger group of people. On this planet we will have to go beyond religious, national, cultural and all other mental boxes and mappings into the experience of pure consciousness. Here is where we will find the true source of creativity, beauty, love and intelligence.

The discovery of consciousness gives us the ability to have auto-reflexive feeling, thinking, and of course, action. In any situation you are placed in, you can experience the awareness of the position of a “third party” and experience the situation impartially as consciousness itself. Two conscious persons cannot, will not, engage in conflicted combat which is always the result of a disparity of mental frameworks. The Catholic and Muslim minds, for example, are too different in their orientations, to be able to find a “common denominator”. Cultural exchange and the overarching declarative “respect for diversity”, has not yet afforded fully desirable results. The foundation of real intercultural cooperation is in the common interest of research beyond mind, in the boundless depths of self-awareness.

7. 1. Cosmo-anthropology

One important question within the realms of physics and biology during the 20th century was “How is it possible that a living organism can maintain a smaller degree of entropy than that of the universe in which it develops?” We know that the entropy of the universe is constantly increasing. Yet, the case of living organisms is the antithesis of this pattern. Instead, every living organism has free energy, which allows for its growth and development. In fact, living organisms can transform inanimate substances into living material. Therefore, organisms are actually reducing entropy and thereby increasing order.

During the twentieth century, this miraculous property of life was illuminated by Ilya Prigogine, a Belgian chemist of Russian origin. He developed a model of “dissipative structures”. This was a mathematical description of the capacity of a living organism to maintain a lower level of entropy than that of its environment. However still, to this day, the mechanism which allows lower levels of entropy within an organism has not been discovered yet.

In China there is the centuries-old concept of bio-energy called “qi”, and in India there is the concept of bio-energy called “prana”. Entropy is not a characteristic within either of these cosmic bio-energy systems. “Prana” or “qi” is the medium, ground, and substance of life itself. I postulate that living organisms are able to maintain a lower level of entropy than their environment in much the same way as is understood in these Eastern cosmologies. I performed precise,

balanced experiments at Ljubljana University between the years of 1987-1990. The results of these experiments suggested that during the growth stage of an organism, an unknown energy is absorbed that can be observed by increasing mass. This same unknown energy leaves the body at the time of death. It is fascinating to consider that living mass has a bigger weight than the same mass when no longer alive. It seems like life energy which is spread throughout in the entire universal space, like the hypothetical ether we discussed earlier, is exceptionally concentrated in a living organism and this in some way causes an additional measurable living mass. Perhaps, within living organisms this life energy might be “the information bridge” between the mathematical universe and the material universe.

consciousness → mathematical universe → life energy → material universe

The evolution of life is a part of the cosmic dynamic; life is not an accident, but a strict legality. Throughout the universe matter has a tendency to develop into living organisms, which have the intellect and potential consciousness. Biology during the twentieth century misinterpreted evolution as a result of random mutations and the struggle for existence. My understanding is that the evolution of life is an integral part of the greater cyclical phases of the universe in which matter evolves towards consciousness. Life is a cosmic phenomenon and cannot be fully understood from the geocentric and anthropomorphic point of view. Astronomical observations confirm that the organic molecules, which are essential for the development of life, are distributed throughout the whole of universal space. On all planets similar to our life is developing towards intelligent and conscious organisms. Surely we are not alone in the universe, it is possible that foreign civilizations are visiting us and exploring our planet. According to their criteria we are in fact a civilization compromised by self-destruction.

Understanding the evolution of life as a cosmic process will allow us to accept potential alien civilizations who visit us as our “universal brothers and sisters.” All civilizations in the universe surely have a similar evolutionary cycle to our own: the development of emotions, thoughts and speech, the development of logical thinking and the understanding that we are not only the mind and body, but also consciousness and finally the experiential exploration of consciousness.

By meditation man activates genes of compassion and peacefulness and can deepen in consciousness. Cosmic evolution forces us to grow from a “personal

dimension” in consciousness. Consciousness is always present, only we are largely encapsulated within our minds, and therefore we do not perceive it. With regular observation of the mind we awaken into true consciousness. The cosmic game requires our full responsibility for our personal development and for the development of our civilization. We think we do, however, we do not have free will, in a sense, to be able to freely decide based upon egoistic desires. We need to decide through our inner contact with consciousness. Western civilization conceives of freedom as an option of the ego, a vehicle to realize all of our ideas. We do not understand that “liberation” means sinking of the ego in consciousness. “Liberated man” becomes an instrument through which consciousness acts and expresses itself.

A cosmological model of universe in dynamic equilibrium (UDE) allows you to connect science and social science in a truly “holistic” science, where all events are described within a single model. I wrote a book titled “Cosmic Anthropology” with the Italian physicist, Fiscaletti. In this book we presented the possibility of an integrated approach to the study of humans and human society as components of the universe. The book was met with some acclaim, yet sociologists, psychologists and anthropologists prefer to stick to the old secure known and trodden path of the “geocentric approach”. I would argue that social science without a holistic connection to cosmology is like perceiving the Earth as a flatland surrounded by a nimbus of starry sky.

At this juncture in time, with the issues on our planet being of a critical nature, it behooves science to wake up and replace its fractured and partial approaches and viewpoints, with more holistic and globally scaled models and views on life. Partial science does not lead to development it is too easy to get lost in the labyrinths of its peculiarities. Solutions to the current problems of society today are going to be found in a new integrated view of man, life and the universe. Hunger, economic exploitation, war, and pollution can be resolved with the systematic awakening of consciousness in humans. Intellect without consciousness is like a boat without a proper rudder. The educational system throughout the world must offer an education in the awakening of consciousness, not just the development of the intellect.

A man with awakened consciousness has a changed attitude toward themselves as well as toward his fellow human beings and nature. Awakened man is beyond the concept simple self “survival”, which continues to be the core on-

going and fundamental problem of humanity because we as a whole still play a game of “subsistence”. There is enough abundance on this planet for all people’s needs to be met. It is only fair and right that we learn to share the good of the naturally occurring and created abundance. When we live in a “me-first, self-survival mode” a minority of people generate and accumulate wealth thinking that this acquisition of money equals security. They do not realize that we are ALL inhabitants of this same one planet Earth; we are all literally on the same boat. If and when financial systems and networks are dismembered, it will be their money that becomes nothing more than plain paper. The only solution to today’s ecological and economic crises is an enlightened man who does not act out of fear of death, but rather acts from a natural and abundant joy of life.

“Profit” is the most sophisticated and destructive concept in human society, because within universe and nature energy runs in closed circles. There is no inflation and no devaluation. In the universe the total value of energy, is always the same. Financial inflation is the result of unfair enrichment of stock market speculators, who create “fictional capital”, which was not truly obtained. To make their unfairly obtained money have increased value, they decrease the value of the money as a whole. This is inflation simply put.

Really, money is basically a medium of energy exchange. The energy flow of today’s money is sucked by many leeches who have depleted society for their own personal gain. The legal system mainly protects the big economic players doing their crimes. Politics, the judiciary and the economy are closely linked and work incestuously for their own interests, which often are not in the interest of people and nature. All this happens because of a weak connection between humans and consciousness.

Truly this is a great cosmic game not simply a pursuit of survival and subsistence. In the true cosmic game man can become dedicated to authentic fortune, one of consciousness. However, to be able to truly live and flourish, he must accept the cosmic game, namely to surrender the smaller egoic self and to become one with the greater cosmic consciousness. Consciousness is your center, the source of your real willpower, creativity and love!

7.2. How to diminish disorder of human society

Human society is a subsystem of nature and the universe. Evolutionary theory says life evolved in the sea. In cosmological model of the **UDE** (the **u**niverse in a **d**ynamic **e**quilibrium) the source of life and mankind is the universe itself. In this cosmic anthropology there is no room for the ideas of God as the creator of the universe and man. In 20th century we still lived in the world of belief and the longing, grasping and searching for help from God. In the 21st century the responsibility is entirely on us. The idea of "God" is dead. Consciousness is already operating in us: It is time that we allow consciousness express itself fully. What is the problem with today's society? From the perspective of the awakened observer/consciousness, there really is only one problem at work in the world today and that is that mankind is still working from the ego/personal level grounded in the mindset of the separate self, its fear of death and fights for survival, and in general a perceived dualistic reality. We still experience people with different beliefs, members of other nations and differing skin colors as our animal opponents, as people who are dangerous and to be feared, and thus they are people who must be destroyed to ensure our own survival.

True fraternity between nations and between people of various cultures cannot yet succeed simply because we believe we are too different and we believe that because of those differences we cannot authentically connect and live together in harmony. A classic example of this phenomenon is the last Balkan war in the 1990s, when there was fighting between Orthodox Serbs, Catholic Croats and Muslim factions. Before the war there were thousands of mixed marriages, people lived in relative peace and prosperity. Some politicians/psychopaths have managed to divide people, destroy the possibility of friendship, to stimulate the animalistic fight or flight fears in people and initiate a four-year-long war, the end result being the Balkans have been torn apart on many levels. If the people in the Balkans were more aligned with consciousness, they would imprison those few politicians/psychopaths in the proverbial madhouse and go on to live and abide in peace.

When a man discovers consciousness he can then become truly independent. He can ethically and adroitly command a company or country because the foundation of his functioning is consciousness itself. The awakening of consciousness in mankind will radically alter the state and social structures that we use. We will be less reliant upon laws and there will be reduced focus on the

enacting and enforcing of laws. There will be greater peace in general. Money will return to its more basic, primary and original function which is the simple exchange of resources. It is time that those who hold the reins of power to start to sincerely stand up and out from the sad geopolitical game in an effort to deliberately speed up the global awakening of consciousness in mankind. In doing so, they can live both effectually and honorably. If politicians simply sit by, and maintain the status quo, I predict that soon people will forcibly throw them out of office.

The question is not simply whether capitalism better than communism. The question is rather, how can we create an economy or a company that will operate in accordance with cosmic law? The individual is the basic unit or building block of society. With the awakening of consciousness of an individual, a conscious channel is created through which consciousness can work to transform society. Using the jargon of physics, we might say, that with deliberate awareness of the individual we can reduce overall social entropy. This will then be reflected in a diminishment of waste, traffic accidents, chronic disease and illicit crime. The reality that in the world's greatest developed countries today, we spend precious potable fresh water to swish our commodes clean is a simple and grave sign that humanity needs to wake up. I live on a farm, where we use a composting toilet. With our waste we enrich the soil; we do not have sewage systems.

Currently the disorder (entropy) of modern society is greater than the disorder of the ground of nature, the medium of existence, which supports that society. The modest goal of sustainable development is to reduce the social disorder to commensurate levels on par with the natural level of entropy found in nature. Unfortunately, the leaders of the sustainable development movement have not come to a consensus that the experiential consciousness research is the keystone to making this all happen.

Today, there is a lot of talk about the integration of various religions and cultures, but in the final analysis, individuals continue to remain rooted in their own beliefs and ideas. People fail to see that the common denominator of all religions and cultures is consciousness.

Many new beginning participants to a religion have deep experiences of consciousness; all the great scientific discoveries and artistic achievements are inspiration that comes from the depths of consciousness. The 21st century can be a time when we say goodbye to our dwarfish egoisms and dive head-first into

infinite consciousness, which is the basic thread in the fabric of the universe and which will also be the primary thread of conscious society.

*The more you tune with consciousness
smaller is traffic of thoughts and emotions
you melt in peace and true happiness.
Do not give much attention to the clouds
your real nature is beyond the sky.*



Magic view from the place where this book was written

Main publications:

Articles published in Physics Essays www.physicsessays.org by Amrit Srečko Šorli and his colleagues.

Physics Essays has been established as an international journal dedicated to theoretical and experimental aspects of fundamental problems in Physics and, generally, to the advancement of basic knowledge of Physics.

1. New insights into Gödel's universe without time (2013)
2. Special theory of relativity in a three-dimensional Euclidean space (2012)
3. New insights into the special theory of relativity (2011)
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TWITTER: <https://twitter.com/sreckosorli>

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