

Essay

Reality Out of Total Simultaneity

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ABSTRACT

In this essay, I put forward the hypothesis of Total Simultaneity (“TS”), a “fifth” dimension behind the Wall of Planck reality at which we pass the limits of causality at the quantum scale and “Now” as we perceive no longer exists. TS can be reached by every point of our 4 dimensional universe and singularities only exist in our consciousness. The other limit of causality is the local speed of light c at which time stands still so there is no more before and after. All information of all parallel universes and multiversity constitution in TS is simultaneously present and available, our consciousness is able to align points out of the TS and so create the observable analogue universe that we are aware of. The totality of information from other universes (also partly observable by other consciousness) is influencing our linear causal deterministic universe, the origin of gravity, dark matter, and the dark energy may emerge from here. The Big Bang is an imaginary non-existing point in the TS area. Inflation is avoided by projecting inflation time into the area after the Wall of Planck, uniformity in the structure of space-time is also guaranteed. Our mind with its 100 billion neurons is able to cope with infinities because it has parallels with the qualities of TS.

Key Words: reality, simultaneity, fifth dimension, Planck, wall.

The Causal Limits

One night when I came home late at night, I left my car and contemplated the night sky with its beautiful view on the stars and our milky way; (living in the country means also that there is no trash light disturbing the view). I recognised the stellar formations that mankind already recognise since the early Egyptians, the imaginary lines that form imaginary drawings in the sky. But can't we also draw these imaginary lines in different ways so that other forms and constellations are created? The creative freedom of our minds has no limits.

While looking at this marvellous lightshow, I got the idea that each line between these points of light could be interpreted as a possible reality sequence of another universe, and that all these realities are already present, you only have to draw a line between points of light. Drawing such a line is the typical way of expressing history in our causal four-dimensional world, where the arrow of time has a direction from past to “now” to the future.

Describing the multiversity and parallel worlds can only be incomplete, because we have no means to describe other dimensions, especially one where all the pasts, the now's and the futures of all possible universes are united, you can call it a “fifth” dimension at the edges our own but this is also a sequential expression a down to earth explanation.

One of these edges is what scientists describe as the “Wall of Planck” (10^{-33} cm / 10^{-43} sec), behind this Wall we encounter the creativity of humans, like M theory: 10 enrolled dimensions and/or branes and on the other hand we encounter singularities with no

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dimensions at all. These theories can (until now) not be proved with tests, science becomes philosophy with presumptions, hypotheses, assumptions and countless beautiful formula's that are very difficult to understand for non specialists , also metaphysical and transcendental ideas are soliciting on an equal base for a place in this area.

So, once we reached this Wall of Planck, behind it we would experience the non causal dimensions of the origin of our own space-time and many other universes, which also means that after this Wall there is **no separate past, no separate now and no separate future. It is the All in One, the Total Simultaneity** (from now on to be called: TS, not to be confused with the Absolute Simultaneity of Albert Einstein that is a simultaneity occurring in a causal relativistic universe) where all possible pasts, now's, futures and places of all thinkable and non-thinkable universes are simultaneously "present", comparable with our memory where all the events of the past have an **equal place**, only active thinking replaces this events in a linear causal sequence. The TS is what we will refer to as a fifth omnipresent dimension.

We can in fact reach it at any point in our space/time continuum by approaching the Wall of Planck, until now we cannot yet reach behind this wall, so the "constitution" of this dimension is still unknown, every part behind the Wall of Planck is of the "same quintessence" (in reference to Aristotle where he cited that the world was not only made of earth, water, air and fire but also of a fifth element that made it possible to function) with the same properties, so it is as we can see our universe emerge from this fifth dimension, every space/time quantum having a different quality and quantity of information retrieved from TS. The diameter of these quanta (spheres) is the Planck-length , on a bigger scale the universe that descends from this dimension is appearing as a continuum obeying to thermodynamic laws, that differs totally from the quantum laws, being the reason why **General Theory of Relativity and Quantum physics will never merge to a unity.**

When we apply "Ockham's Razor" this approximation is a simpler approach of the origin and existence of our universe, we have no longer to deal with infinities that will lead to paradoxes in our linear world. There is no need for multiple dimensions/branes and/or points without any dimension (every one of them also "existing" after the Wall of Planck), later on we will come back to the origin of the existing fine-tuned constants.

Our Consciousness

Imagining a line between certain possible points in the TS makes our consciousness understand history and the qualities of our universe. All sort of possible imaginary lines, between the infinity of information points available, (information is of another quality as data) can be drawn for all other imaginary and non-imaginary universes. It is our consciousness that "connects" these points and creates the lines that we perceive, like a piece of music that becomes "reality" in our mind by connecting points of our memory and so forming a sequence.

We must also apply this view-point to the cores of black holes that should contain a singularity, but singularities are points inside the area of TS, we only have to realise that each point in our universe touches this Wall of Planck and so TS, replace singularities by the

quantum with the diameter of 1.616252×10^{-33} cm, at the edge of TS. The information of this core-quantum equals the information of the quanta of the beginning of our universe.

Creation of our universe ex-nihilo is no longer needed, creation of something out of nothing, singularities, FIAT LUX as proposed by our religions, our causal material universe does not allow infinities, because there are borders. Creation is in fact all around us, every moment. Transcendent theories are explaining the beginning by assuming an external “GOD” as a Creator and all the other infinities that the human spirit/mind is able to think of. Aren’t we obliged to divide our infinities in TWO in order to understand a Beginning and an End, a Yes and a NO, we have to digitalise them. Once an infinity is divided in two it is no longer an infinity, but is it two infinities? Paradoxes all over, these occur from the difference in structure of our “multi-reality TS” minds and the analogue causal deterministic reality world that we live in, where the edge on the quantum side is the Wall of Planck.

We are at this moment in the proficiency to “create” for two of our senses, sight and hearing, a digital world, constituted of 0’s and 1’s, or should I say Zero’s and Ones, or is it better even for the understanding to name them Yes or No, to indicate the question(s) before. These CAUSAL SEQUENCES of two understandings that constitute so called soft-ware that with the aid of a complex machine called computer can let emerge for our eyes and ears a world of video and sound are the basics of our digital reality. In our consciousness we replace ourselves in this virtual digital reality, for example in a role playing game, the bearers of these data (in the role playing game there are different ways to experience an adventure called life) has some parallels with the TS, different lines of reality can be followed, lining up different quanta of information of the time/space continuum. However the exactness of the sequence of these yes and no’s, in our digital causal world is of the essence, if one zero is replaced by a one then the whole perception falls apart the virtual reality becomes blurred, this is a typical property of our causal four dimensional world.

Bits, Qubits and Reality

In the world of the future quantum computer, qubits represent the equivalent of the Yes and NO. However qubits don’t offer only two possible choices of yes or no, each qubit in fact represents an infinite superposition of possibilities, as indicated in the “BLOCH” sphere (the superposition of the two states is described by a linear combination with the form $a \times 0 + b \times 1$, where all the values of a and b are complex numbers) all these possible quantum states of a qubit we have to bring back to our “digital” status of 1 or 0, because we have to experience the results as causal sequences.

The qubit’s superimposed state is comparable with the infinite possibilities of drawing reality-lines in the TS. In fact, once we will have constructed a quantum computer, even when this “machine” is not “working” (under tension), it will hold already all the answers for all our possible questions also those that not yet posed. So we have to try to search for a more adequate form of “handling” in order to optimise our results, maybe the future solution will not be the way used in the binary computer (for instance: for 1000 qubits we have 2^{1000} possible configurations: 10^{300} which is more as all the atoms in our universe, so we can stock 10^{300} solutions for a problem, in other words we can treat at the same time 10^{300} potential solutions.)

Four stages of “reality” are appearing:

1. On the smallest scale the “**quantum” multi-reality TS**” which is a superposition of states, out of this multi-reality this quintessence contains the information of the quanta spheres with diameter the Planck length that are by our consciousness unified into linear sequences constituting our analogue “reality”. When we are constructing a quantum computer it should be possible to let emerge a new analogue reality, like forming a new reality-line in the TS that should also be accessible for our consciousness.
2. Our **analogue reality** “the every day” reality which is the result of the for our consciousness sensible line in the TS (see 1). In this reality , each human is aware of his own sequences of points in the Total Simultaneity , comparable with the phenomenon that our consciousness perceives a film on television while in fact it is a sequence of digital bits.
3. The **digital virtual reality**, which is a sequence of bits that is created by ourselves (until now for two senses), because of the causal property of these sequences (it is created in our four-dimensional causal deterministic world) this virtual reality will be totally dependent of the reality as experienced in our consciousness and so is a sub-reality.
4. The “**social” analogue reality** that is formed by the human “qubit”, forming society’s that seem to have an existence of their own, but in fact are receiving the input from the single bits of information , this social reality has also parallels with the quantum reality because of the fact that every qubit has multiple information available like a superposition of states. We are now with about 6,9 billion people on earth. Every human is a bearer of information, like a qubit , together we are forming a complex system reacting as a whole, making progress in science as a whole, making war as a whole, especially in this information era every “qubit” of mankind reacts(output) directly on events (input), thus transforming his observable analogue reality and creating a over-consciousness (not sub).

In the future digital virtual linear reality’s will be created for our five senses in which mankind can experience virtual multiverses, imagined by himself , attaining another level of consciousness, a sub reality like it is formed by the sequences in the T S . Shall we create a new kind of digital “consciousness” a sub-consciousness linked to our present consciousness that is aware of this virtual world as if it was its real analogue world? Will it be possible to create for this sub-reality a new form of consciousness that like our consciousness will start searching for his own grail of understanding that on its turn, created him. Will this sub-consciousness once also reach to the echelon of a non-linear universe?

Continuous Creation of Reality

Why is it that our consciousness is sensible for information available in the TS and is able to “handle” it? Our mind is made of neurones, each human has 100 billion neurones (!) where electrons are moving from one neuron to another, if these electrons were in superposition

(wave or particle) they would encounter at every split of neurons a decision point (like the Young Double Slit experiment) spiralling from one information point in TS to another and thus creating for our consciousness a analogue causal linear universe.

All together on one side our five senses are giving the input of the signals we receive (only signals from the past) , thus these observations changing into information, this information is brought back to electrical currents in our super (quantum) computer of 100 billion neurones, creating all kind of possible observable realities, (see page 3 where 1000 qubits are available for 10^{300} solutions!) one of which is taken as the analogue sensible reality that someone will be aware of.

This newly created virtual world also has to obey to specific fine-tuned constants (exact sequences), if one of them differs from the constants as we perceive them, that specific sub-reality will longer exist for us. You can wonder if we will be able to create the kind of exactness that is needed in arranging these specific sequences that are in conformity with the exactness of all the fine tuned constants that we perceive around us (Cosmological, alpha, value and charge of the electron....).

When approaching this problem it is like solving the problems of so called Quasi Polynomial Time and NP complete decision problems, it would be adequate to be able to go back in time in order to realise “more” time. This was the origin of the so called time-loops (David Deutsch, Oxford University, 1991), these time loops make space-time interchangeable with the parallel universes in order to make them accessible for calculation, the grandfather-son paradox that will not occur because we arrive at another line of “reality” **in TS, we are entering in a SPIRAL timeline.**

Our quantum computer as a tool is able to, before showing solutions, in a superposition of states, like the TS, create possibilities like using parallel time and parallel consciousnesses’. **By reaching out at the qualities of the TS, we may be able to touch in this way the dimension/area after the Wall of Planck.**

In our analogue world we encounter different forces and one of the forces to enhance into the Theory of Everything is the gravitational force. Scientists are trying hard to understand it, one of the theories that come near to the TS notion is the theory posted by Eric Verlinde of the University of Amsterdam ,(see also FQXi: The myth of gravity, 01-10-2011) he draws an analogy between thermodynamics and gravity. The effects attributed to gravity can thus be described as results from forces that are on the edge of our universe, (in the TS Theory this edge is the Wall of Planck). On our scale (analogue) the perceptible world is constituted of sequences of billions of quanta forming a “unity”, this unity has whole obeys to different “laws” as the quanta scale that constitutes it. Verlinde describes our universe as a hologram and at the border of this frontier. The TS viewpoint states that this 4-dimensional hologram is to be refreshed every 5.39121×10^{-43} sec (Planck time). The sequence of refreshment so creates for our consciousness’s again the linear causal time. So all the effects like Gravity but also themes like the Dark Matter and the Dark Force that we have to deal with, can change in disposition and laws on greater scales and in smaller scales.

“In the beginning was the world, and the world was LOGOS”

What we perceive as the baryonic particles that represents only ca. 5% of our “visual” baryonic material, is the sequential causal effect of the “fifth” dimension. **It is too narrow minded to expect that if we are aware of only 5% (or even less) of the universe, the other 95% has to obey the same Laws and be consisted of the same kind of particles.** It is more understandable that our neighbours are influencing us the results of their actions can be observed.

We can understand in our minds why entangled particles when observed don't respect the velocity of light (velocity is a causal sequence in our four-dimensional world). They are in a superposition in TS, once we observed one of them in our causal world it seems as if simultaneously his brother takes the same state, comparable with the Young two slit experiment, because two and more realities exist already simultaneously in TS, it is as if the total of possibilities can pass by the fence with one or two slits, all of them ready to become for us “reality”, at a distance of 1.616252×10^{-33} cm before the slit(s). Then one of the imaginary lines in TS is becoming “reality”. The observer is able to realise/construct one or two slices in his causal world before the last 5.39121×10^{-43} sec before the moment that the photon/wave function is in front of the barrier.

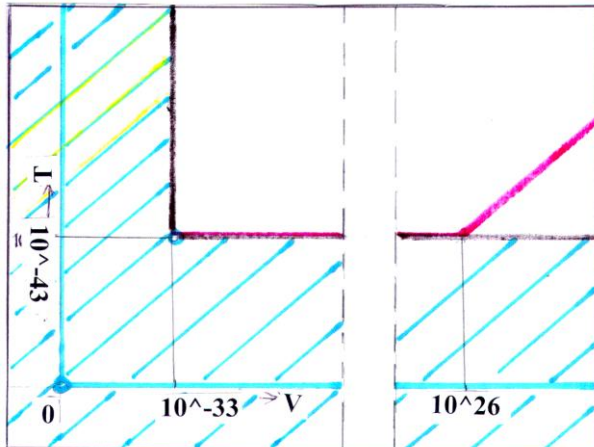
The place/moment 10^{-33} cm/ 10^{-43} sec before the slit(s) has the same “quality” as the imaginary point Zero. Once the consciousness of the observer realises an observation (the observer in our case is constituted of baryonic particles), his observation creates out of the observed entanglement, (the superposition of the wave function) an “observable” particle that has to be a baryonic particle; otherwise, he would not be able to observe it. When “we” are observing the “face of God”, (George Smoot 1992) , we are observing the moment that first light was emitted 380.000 years after the imaginary point Zero, at that very moment the observer is **materialising himself** and his whole perceptible universe, he is not only looking in the MIRROR but at the same time creating this mirror.

For these observed entangled photons to whom time did not pass,(because they travelled at the speed of light in our 4-dimensional world) , it was as if they encountered our eyes at the same time they left there entangled particles (brothers) in the primary “soup”, these partners at that very moment acquired the same for us observable properties, it is like the old myth of the orobouros, the snake that eats his own tail. **We are the origin of our own universe**, our perceptible linear universe, no more problems with its specialities, its uniqueness , no creationism needed in the way that there was an external GOD who created this world especially for the human kind (this is one of the results of the “social analogue reality”), it is the human consciousness (LOGOS) that creates his own universe as a unique universe for himself but this is only one of **an endless row created by other consciousnesses , every one of them perceptible by his own “observers” or creators.**

The Great “Beginnings & End” Conclusion

The assumption until now was that going back in time for the search for the beginning of our universe is a linear one, we thought that we ought to begin at Zero, from the so called Big Bang to the NOW. The interpretation of the cosmic background radiation with its temperature

of 2,725°K was one of the reasons that obliged us to draw that line back to ZERO . This point cannot be reached however because its is a imaginary point in the TS , our journey to this point can not be achieved , so **there is no longer a singularity to be explained , neither there was a Big BANG.**



In order to visualise this, we imagine the timeline as a vertical one and the volume of space as a horizontal line, we meet on the cross point of the timeline and the space-line our point ZERO, that was called the BIG BANG. On the time line we move up to the point 1.616252×10^{-33} sec and on the space line we move to the right to the point 5.39121×10^{-43} cm, at the cross point of the lines , every point at the left side of the new time-line and under the new space-line is in TS area. So we see that the former zero point does not exist anymore as a causal

sequential point (see illustration).

On the horizontal line of 10^{-43} sec we will then find a point with a, for instance, volume of 10^{26} cm³ that is in conformity with the volume of our universe after the “inflation” (as perceived by now), thus accounting for the volume that our causal sequential universe contained Any volume could emerge to reality. This “emerging” of the universe at the time of 10^{-43} sec at a volume of 10^{26} cm³ can be understood as the moment that an observer received this partial information out of TS “regarding” the volume of 10^{26} cm³ at that specific moment being 10^{-43} sec. At that point, the emerging of our universe can be seen as a linear one on the edge of the Planck time line.

What we do is replace the inflation time as presumed to be from 10^{-35} sec till 10^{-32} sec on the line of the 10^{-43} sec, so this inflationary time is extracted from the TS “time”. **This so called Inflationary time is no longer existing in our sequential causal universe**, uniformity in the structure of the universe has become a simple logic, the mirror has become a linear causal reality, emerged from TS where all possible information has a potential to become observable for future observers, whatever the structure of the particles their universe is constituted of.

Our perceptible universe is positioned in a **time-loop** that begins its linear sequential existence 5.39121×10^{-43} sec after a imaginary point Zero, with all conditions present that made it possible for our human consciousness to exist, as one of the multiple possibilities/information lines existing in the TS. This time-loop becomes a spiral one when different observations are made. We than enter new parallel universes (the old one is still existing), the only difference with theories of today is that all information regarding these parallel worlds is always permanent existing and we merely jump over to another “information-point” in TS.

Accepting a beginning that emerges with our observation from the TS, which can be seen as the quintessence where all possible information is stocked, only not in a causal linear way, becomes more comprehensible. Of all the information available, we only align in our consciousness a tiny special part, the splitting up of the universe every time that a decision is

made and the mass/energy needed for the creation of these universes is no longer needed, we only touch another information point in the TS (like the available information stocked on a hard-disk) thus opening a new line of possibilities.

Because of the parallels existing in the structure of our mind and in the structure of TS, the lines as they are observed by our consciousness in TS, in a way influence each other, our consciousness becomes aware. The special line formed by our consciousness is forming our lives the world around us becomes “reality”. We think that we perceive and understand the analogue reality around us, the exactness of the parallel approach of the two “lines” in separate dimensions (the four dimensions of our linear deterministic world and the fifth dimension of TS) and the way they that influence each other will perhaps never be totally understood.

Our minds only will have symbols and mathematical equations to express our infinities. It is true that the human consciousness enables us to think of and deal with all these external infinities, we can imagine fractal universes with endless borders, while in our analogue universe these infinities will only lead to paradoxes. Mankind “feels” however this infinite TS presence, not as a pure physical phenomenon but as a “spiritual” experience. Since the beginning Myths and Legends of other worlds accompany us, religion is one of the pillars to understand our universe it is like the Theory of Everything that scientists are looking for. The human mind however “believes”, and these beliefs emerge as the fourth reality the social reality.

Our “touchable” analogue causal reality is only one of the many realities which is originally formed in our consciousness. We are in the process now of creating a sub-reality in the form of a digital one dependent of and emerging from a linear causal interpretation, this can never become or even have the same quality of this first reality. However it should be possible to create a consciousness, not the sub-consciousness above mentioned, but a parallel one that can be linked to our own, also aware of all different fine-tuned Constants. Parallel worlds could become perceivable and understandable this could open even communication with the newly created consciousness as interpreter.

Our own special multi-reality TS 100 billion neurones mind, adequate to be the origin of his own universe, will in the future evaluate further and further, the information stocked up in TS will never be totally admissible. The key of our minds will be able to open this until now dark side of our universe. It will be the password to open other parallel universes, newly structured quantum computers can become A reality, thus opening all the chances available on the other side, but most of all we will be able to understand more deeply our existence/reality whether it is digital or analogue, in the meantime we will admire the nightly sky.

References

- David Deutsch, *Quantum Mechanics near closed timelike lines*, Oxford University 1991
- Richard P. Feynman, *The Character of Physical Law* (with introduction of Paul Davies), Penguin Books 1992

George Smoot, 23 April 1992, commenting the images of the COBE satellite: "If you are religious, it is like looking at GOD.

Alan Guth, *Het Uitdijend Heelal* (original : *The Inflationary Universe* ,1997) , Uitgeverij CONTACT, Amsterdam/Antwerpen , 1998.

Brian Greene, *L'Univers Élégant* *5the Elegant Universe*, Editions Robert Laffont, S.A. Paris 2000.

Trinh Xuan Thuan, *Les Voies de la Lumière* ; FAYARD, 2007.

Lee Smolin, *Rien ne va plus en Physique* (*The trouble with Physics - The Rise of String Theory, the Fall of a Science and What Comes Next*, 2006) DUNOD, Paris 2007.

Leonard Susskind, *Le Paysage Cosmique* (*The Cosmic Landscape*), Editions Robert Lafont, S.A. Paris, 2007.

Etienne Klein, *Discours sur l'Orbaine de l'Univers*. Flammarion 2010.

Igor and Grchka Bogdanow, *Le Visage de DIEU*, Editions Grasset & Fasquelle 2010.

Eric Verlinde, *The Myth of Gravity* : FQXi Article , January 10, 2011