

The Nature of Time ©

The Essence of Time is Quantum Continuity

Abstract

Time is a Universe signature command control as it is the certainty for the continuous unfolding of now. It is a primary control switch of Universe and a deep mystery. It defines and ensures continuity at the quantum scale. It provides stability as it rules over, and out, any possibility of chaos at the quantum level. The complex plane is the quantum stamp indicating the likely mechanism or link to that which naturally locks continuity to Universe Time. Time is Universe insuring quantum continuity.

Newton's position is that Universe provides both an absolute Space and Time Reference Framework. There is a now and simultaneity. It insures and defines the continuity that is perceived and observed as time by man, but man's perception of time is not the Time command control factor of Universe. Einstein established the Minkowski manufactured geometric four-dimensional Space-Time where there is no longer any time called now, or simultaneity.

The Spacetime of Relativity is disconnected from Universe Time. Time is not relative to Universe. Quantum physics is in line with Newton's position of Absolute Time and Space. A look at the Schrödinger equation and how time is experienced tends to provide the perspective we need to determine which is a better approach to this mystery. This paper examines the independent reality of a unique Special Time locked in the quantum world and its disconnection and independence from Space.

Energy, Time, and Space

Matter is mostly Space, a form of energy. Within matter, Space Energy occupies 99.9999999996% of the volume.¹ The balance is mass, another form of Energy. The Energy fields in Space can pass through matter without any interference allowing matter to move through Space without any collision. The energy fields of Space do not always have to interact with matter.

Physics currently mostly holds that Time and Space are possible illusions. Newton's choice was that Time and Space are Absolute. Time and Space, together with Energy, under Nature's hidden Laws, utilize the mystery force of Gravity, to control Matter. Time and Space are the manifestation of energy.

Energy under Universe's Time control leads to Space having any appearance, presence, an in-world existence. Energy flow directed by Universe's Time in existing Space then generates unique energies defined as particles. It is Space that manifests from energy under the direction and control of Universe's quantum Time. It all manifests from that unknown foundation, Energy.

Einstein had an incomplete view for that period in history. His equations work to describe the result of the process, but do not uncover the cause. In his later work he wanted to establish that Particles come from Space-Time.²

Time in Einstein's Relativity is not the Time in Universe's quantum world. It also is not man's perceived time. He created a pseudo time dilation, a denial of any real time, creation of coordinate time, and what is termed Proper Time. Time tied to Space in Relativity is not the hidden ensured continuous stable Time under control of Universe's Energy at the quantum level before there is Space.

Perhaps he should have started with just Energy under Universe Time control to arrive at Space first, since physics tells us Energy exists even at zero space point, and that Energy can create Space, and everything flows from that. Even what we think of as solid objects is Energy; there is only the energy we perceive as objects and Space. Energy is the power of the creator. Space is the canvas created by Energy and Time. Universe's Time is the Artist's brush. If Space does not exist, Energy cannot do or create anything. Without these essential parts, Energy and Time giving Space, there is only the singularity that nothing evolves. Existence is then frozen.

Gravity

Newton understood the necessity of absolute Time and Space to make any world. They are the required foundation, the yin and yang of the essence of Universe, which is Energy. Energy needs Time and Space to have a presence. No Time, No Space, means no actionable energy which leaves only a frozen dead world. It is from these two control laws within Energy that all else emerges. The Big Bang need only be considered as when Nature started her internal clock.

That is not the clock of time in the mind of man. Time, in the mind of man gives recognition to the inherent reality of the unique Time factor of Universe's energy, but it is not captured and expressed in Relativity.

Newton's work as shown by Lagrange incorporates kinetic and potential energies. Einstein brought momentum into the picture to give more accuracy in the path's direction, but neither one gives the explanation of Gravity.

The magnet and coil question that was Einstein's focus in his 1905 paper is a complete system and cannot be divided up as is done with individual IRFs where it is easy to force on an IRF the view about the other's relative speed and observation. This is not pertinent to how magnets work because now this is about energy fields in Space between objects, a vastly different reference frame.

Physics currently believes that Space 'married' to a geometric Time dimension somehow defines Gravity. Newton's equations, like Einstein's, also describe the path that energy objects take through Space. Newton could have claimed that the path following his equations is the result of invisible bending of Space over Time. The path's object is the result of Universe's Energy flow direction through Time, but that does not explain Gravity.

Gravity is the hidden tool within the Time and Space directives of the Energy of Universe itself, but it does not reveal to us how this is accomplished through secret unseen actions within what Newton called Gravity acting almost instantaneously across vast distances. The bending of Space and Time into the final manifestation may only be an appealing illusory description of the outcome of what is not, or perhaps cannot be known.

Time is Everywhere

With the embrace of Space-Time there is a whole newly created language and reality for Time and Space, and a failure to understand that imaginary four-dimensional geometric structure. This is not the Time embraced by Universe. That Time is hidden deep in the quantum theory and seen manifested in the presence of the complex rotating plane in Schrödinger's equation.

Quantum field theory is the fundamental language that holds Universe's foundation of Time. Its most fundamental feature is continuity, which is the hand of Universe's Time. Time is the stable unchanging universal key of quantum mechanics, of the energy of Universe. It is a never-ending display of Energy exercising Force through Time in Space. It is not the same time in the mind of humanity.

Unlike the clock that is only correct twice a day because it is not moving, Universe Time does not need to move, but it is always correct, as Energy can still move, and does. Perhaps this 'clock' is the Entanglement Quantum Field itself since everything is connected to everything at that level, and although change can happen, disconnection does not take place and stability is maintained.

[Another perspective to mention here on this deep mystery of Time is the world of radioactive decay. This complex field with distinct branches is also a window to this mystery of Time that confirms that it is connected to, directed by, and controlled by this hidden Natural or Universe Time Key to provide stability when Nature's Artist Brush produces elements in the periodic table of Matter. ⁶]

Schrödinger's equation:

"What is the i really doing in Schrödinger's equation?" ³

The detailed impressive visual analysis clearly explained and presented in this video linked work of Welch Labs shows the intricate connection between the complex action of rotating complex planes on the control and direction of the unfolding of Schrödinger's equation.

It is a reasonable view and claim here in this paper that one is possibly observing a connection to the fundamental true nature of Universe's Time control, although that is not a claim in the Welch Labs video.

"The mathematics of quantum mechanics represents the physics of time as a physical process with classical physics representing processes over a period of time as in Newton's equations." ⁴

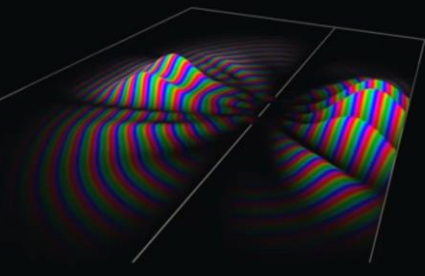
“The Schrödinger equation gives us a detailed account of the form of the wave functions or probability waves that control the motion of smaller particles. The equation also describes how these waves are influenced by external factors.” ⁴

Physics claims the problem with the conflict between Relativity and Schrödinger compatibility is due to quantum theory not accounting for Relativity. Perhaps the problem is that Relativity is not compatible with Schrödinger’s equation which gives Space a second order over a linear first Time. It would be an essential requirement for Universe to hold Quantum Time in a certainty of stable flow. That appears to be done with use of the complex number, i . The complex number here is a real part of the real world, a real part of Universe and essential to its functioning and our understanding. ⁵

Universe and Time

The physics of Time under Universe is as outlined above a physical process incorporating reality, not an imaginary world, of complex number rotating planes to ensure a stable continuity involving Energy, Time, and Space at the quantum level. Comments by Dirac and Dyson recognize this.

What is the i really doing in Schrödinger's equation?



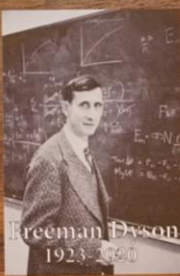
“So if one asks what is the main feature of quantum mechanics, I feel inclined now to say that it is...the existence of probability amplitudes which underlie all atomic processes. Now a probability amplitude is related to experiment but only partially. The square of its modulus is something that we can observe. That is the probability which the experimental people get. But besides that there is a phase, a number of modulus unity which [we] can modify without affecting the square of the modulus. And this phase is all important because it is the source of all interference phenomena but its physical significance is obscure. So the real genius of Heisenberg and Schrödinger, you might say, was to discover the existence of probability amplitudes containing this phase quantity which is very well hidden in nature and it is because it was so well hidden that people hadn't thought of quantum mechanics much earlier.”

-Paul Dirac

22:20 / 25:05

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What is the i really doing in Schrödinger's equation?



“One of the most profound jokes of nature is the square root of minus one that the physicist Erwin Schrödinger put into his wave equation when he invented wave mechanics in 1926...It turns out that the Schrödinger equation describes correctly everything we know about the behavior of atoms. It is the basis of all of chemistry and most of physics. And that square root of minus one means that nature works with complex numbers and not with real numbers. This discovery came as a complete surprise, to Schrödinger as well as to everybody else.”

-Freeman Dyson

23:00 / 25:05

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Like Gravity, Time is always with us, perhaps more so as we do not have to be aware of Gravity all the time and we survive without any problem. Time, however, at times, seems more physical than gravity. Going through the day without references to time would be not likely or even possible.

Is Time and Space an Illusion?

There are more and more publications claiming that Space and Time are illusions as it seems to be the arrived at conclusion due to the failure of trying to find what Space and Time really are, how they come into being, what it means to even say they exist, and how are they experienced and measured. It all seems very vague.

This paper is based on the notion that for the Universe, with or without human observation, to continue from moment to moment, advancing into the future which has been going on for billions of years, it must have some very deep underlying foundation to keep it extremely stable without any possibility of chaos at the smallest scale, the quantum. The information found and presented above on Schrödinger indicates Universe is inherently tied to a truly deep level of complexity well beyond our understanding, but complex numbers give a glimpse of its existence. Complexity is not a convenient substitute for imaginary, but a critical factor of reality. It is clear confirmation that to reach into the depth of how the Universe functions, it is necessary to include complex mathematics.

“Are imaginary numbers an optional simplification, or does trying to work without them rob quantum theory of its ability to describe reality?... Studies show imaginary numbers are a necessary part of the mathematics of our universe.”⁷

The lack of that complex number in Einstein’s work suggested that he is missing a key factor, and perhaps the concept of Space-Time is the real illusion. This paper has offered that Universe has a concept of Time as a fundamental factor for its continued existence, that current physics is not aware of what it is.

Complex numbers are a usable tool that permits access to a part of Universe that otherwise would be out of reach. It does not mean that Universe is necessarily built on complex mathematics. It is built in such a way that complex mathematics opens a window for physicists to see in. And it might mean that it points to or leads to an even yet deeper level.

The time measured by clocks and the time embraced by the physics of Relativity is **NOT** the Time of Universe as directed and controlled at the quantum level.

Universe has no need for Time dilation, and it would be a problem without an unchanging real-world hidden system that provides a stable continuity of NOW, from moment to moment. We get a sign of its presence from a number, like the square root of negative one.

Matter, including clocks, whether atomic or mechanical, are subject to changes in their rest mass and energy from changes in Kinetic and Potential energies from gravity and acceleration.

Physics says lived time and the human sense of time is outside of physics. Yes, but that human sense is closer to the real-world Time of Universe because man is also connected to Nature, not SpaceTime.

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