Time and its physical relationships

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Time cannot be absolutely defined, and there is
no inseparable relation between time and signal velocity. **Albert Einstein**[1].

Time does not exist by itself

The phenomenon of time emerges in relationships – as an expression of properties of physical bodies and changes that occur to them.

Time is a factor of energy. Time has to do with the *increase* and *decrease* of energy. For example, as energy is brought down to a "zero level", time is "eliminated", so in a sense, time cannot be "compressed" - only eliminated. In the zero-energy level, electrons occupying this level in unlimited numbers are available through state transitions for the building of matter and the vacuum[2]. So it is the extent and the nature of energy flow that determines the characteristics of time.

How do we know all this?

In his seminal foundations of physics work of the early 1900s, **Sir Edmund T. Whittaker** demonstrated by canonical quantization that there exist physical, time-like and longitudinal photons *in vacuo*[3] [4] [5]. The 2 scalar potential functions, F and G which completely characterize an electrodynamic field due to electrons in the ether are:

$$F\,(x, y, z, t) = \sum \frac{e}{4\pi} \sinh^{-1} \frac{\bar{z}'-z}{\left\{(\bar{x}'-x)^2 + (\bar{y}'-y)^2\right\}^{1/2}}$$

$$G\,(x, y, z, t) = \sum \frac{e}{4\pi} \tan^{-1} \frac{\bar{y}'-y}{\bar{x}'-x}$$

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[1] Einstein, Albert. *How I created the theory of relativity*. [Translation by Yoshimara A. Ono.] **Physics Today**. Volume 35 (8), August, 1982. p. 45-7. [Lecture given by Einstein in Japan, on learning of his Nobel Prize.]
[2] Phipps, Jr. Thomas E. **Heretical Verities**: **mathematical themes in physical description**. Classic Non-Fiction Library, Urbana, 1986. p. 397-405
[3] Whittaker, Edmund T. *On the partial differential equations of mathematical physics*. **Mathematische Annalen**. Volume 57, 1903. p. 333-355.
[4] Whittaker, Edmund T. *On an expression of the electromagnetic field due to electrons by means of two scalar potential functions*. **Proceedings of the London Mathematical Society**. Volume 1, 1904. p. 362-372.
[5] Whittaker, Edmund T. **A history of the theories of aether and electricity**. Volume 1 and 2. London: Thomas Nelson & Sons, 1953.

In these equations, for the fundamental case in which a field is due to any number of electrons moving in any way, we observe that time emerges only through the displacement of energy. Another way of putting it would be that time emerges through change in energy.

These photons have an independent physical existence. Whittaker himself observed, after computation that the "total disturbance at any point, due to this system of waves, is independent of the time, and is everywhere proportional to the gravitational potential due to the particle at the point"[6]. **A**. **D**. **Sakarov** admitted that the gravitational field is a "conglomerate of loose things and not a fundamental field of nature at all[7].

Everything electromagnetic, and probably gravitational, starts from these potentials, not fields, and under certain circumstances, there may exist photons without fields being present at all. In the *vacuo*, the longitudinal light photon travels in the direction of the beam, like an energy capsule, as a scalar four-potential-function energy standing-wave field, with many different frequencies, with an internal symmetry based on circular polarization [8] [9], an energy field or nexus that "has an end, but no beginning". The time-like and space-like parts of the four potential are photons with spin –1, 0 and +1 that are longitudinally directed, and which are observed in the ***Compton*** and the photoelectric effect[10].

Movement of light affects time

Philip S. Callahan designed an elegant experiment that shows how variations in the movement of light affect time[11]. Changes in exposure settings of photographs of same objects, including coherent light laser spots results in shift of position of images. The more coherent the light, the less apparent is a shift in time. He suggested that time is neither absolute nor independent of photon activity of space.

We can also state, as a corollary, that the *movement* of light generates time. After all, the electrodynamics are associated with photons. This is particularly significant in time engineering, as will be seen later.

Time and life

Now, it is well known that the ability of cells to sense the presence of light is a primary function of life itself. If a cell can sense light, it is alive; if it cannot, it is dead[12]. Callahan was able to observe that time increments were detected on light-detecting surfaces of living organisms such as the cuticles of leaves.

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[6] Whittaker, Edmund T. *On the partial differential equations of mathematical physics*. **Mathematische Annalen**. Volume 57, 1903. p. 354.

[7] Sakarov, A. D. *Vacuum fluctuations in curved space and the theory of gravitation*. **Soviet Physics Doklady**. Vol. 12, 1968. p. 1040-1. [English translation.] Original in: **Doklady Akad. Nauk. SSSR**, Vol. 177, 1967. p. 70-1.

[8] Evans, Myron W. **Physica *B***. Volume 182, 1992. p. 227

[9] Evans, Myron W., and S. Kielich (editors). Modern nonlinear optics. [Special topical issue of Ilya Prigogine and Stuart A. Rice: Advances in Chemical Physics. Wiley, New York 1992, 1993, 1997, and 2001] Volume 85 (2).

[10] Institute for Advanced Study (Budapest). *On Whittaker's F and G fluxes, Part III: the existence of physical longitudinal and time-like photons*. In: **Higher symmetry electrodynamics**: a collection of AIAS papers. [Special Issue. **Journal of New Energy**.] 2000. p. 7-1 – 7-5.

[11] Callahan, Philip S. and Kevin. *Sinewaves of spacetime.* **Newsletter of the Planetary Association for Clean Energy**. Volume 9(2&3), April 1997. p. 8-9.

[12] Jibu, et al. *Evanesecent (tunnelling) photon and cellular "vision".* **Biosystems**. Vol. 43, 1997. p. 65-73.

The Russian time researcher, **Nikolay A**. **Kozyrev** considered that living systems "consume" time for their life-energy[13]. **Velimir Abramovich** suggests that living organisms are naturally-driven "time machines". They each have an inbuilt time that serves as a "code" to structure their own physical totality and to regulate their own functioning. Thus their "local time" acts as a "time operator" / "time condition" / frequency[14]. The nature and level of electromagnetic fields in living systems could therefore be considered as indicators of their "energy level" and how it affects and adjusts the inherent rate of time-flow.

Time and consciousness

We append to these statements the notion that, yes, time is "consumed" by living organisms – but only if they are conscious. Essentially, time can be perceived by measurement, which always requires a conscious observer.

When we measure, we observe the differentials of energy flow. It is the measurement of these differentials - as we note from the Whittaker equations of scalar fluxes - that allows us to the measure the equivalence of time. When we measure differentials, we are effectively creating our notion of time.

It is difficult for humans to conceive that time does not exist when humans think about it. **Saint Augustine** speaks for all humans with his observation:

While I do not think about time, I know that time exists.
When I begin to think about it, I stop understanding what it is.

With such conditioning, humans cannot come to grips with the notion that the universe has no beginning and no end. It is like the paradigm of absolute nothingness – people cannot deal with the concept of no time because, effectively, consciousness, like life, consumes time. One could advance the notion that thought itself is time in motion. When we think, we are creating time. Life is movement – and the brain registers energy differentials and their associated fluxes of scalar potentials.

Time and causal mechanics

Since time is the result of movement of energy (and accordingly, light), then time is associated with the cause-effect processes linked to a first position of energy to the next. In other words, time is innate to causal mechanics.

Variations in energy flow, logically, lead to variations in the characteristics of time. They also permit variations in causality.

[13] Kozyrev, Nikolay. A. **Selected works**. University of St. Petersburg. 1991. [In Russian]. Also: **On the way to understanding the time phenomenon**: **Construction of time**. A. P. Levich, editor. World Scientific Press. 1995.
[14] Abramovich, Velimir. *Experimenting with Time.* **New Energy Technologies**. Volume 3, November-December, 2001. p. 13-5

Conversely, changes in time lead to changes in physical structure[15]. This phenomenon was proven by Kozyrev and has been labelled as the ***Kozyrev effect***[16]. He demonstrated that changes in the course of time affect the performance of electronic components. Figuratively speaking, a transistor is like a corral in which light behaves in a certain way. By changing the way that light behaves, a transistor becomes valueless.

To create an extra-temporal causality (with linkages to another level/dimension) one must change the light movement. Changing the light patterns means changing the behaviour of a wave, and its concordant photonic reality. By altering the photons, we make them go to another dimension.

Changes in time can effect change in living systems[17]. The engineering of "time-polarized" waves has the promise to target and amplify natural healing processi in living organisms. It is these natural activities that would restore diseased cells to their original and healthy condition[18]. Such time engineering may also include the reversal of the effects of AIDS, smallpox, anthrax, and most bio warfare agents, with treatment times of only a few minutes per week, with no more than 3 treatments required in all. Eventually it may also be possible to reverse the effects of genetic disorders, effect limb regeneration, and cure spinal cord injuries[19].

Engineering causality

Variation in the density of energy determines variation in the "the course of time". By the "speed of course of time" is meant the rate of causal transformation and the input of additional forces into systems (including mechanical tensions). According to Russian scientists[20] [21] [22], there are interesting possibilities in deploying engineering for causal mechanics.

In preventive time engineering, one could delay the approach of a known cause and to artificially close the consequence loop, and thereby annulling it from ever achieving an effect. In other words, one can make the effect "happen" before its normal time, disrupting space structure with its related "speed of the course of time". One can also make it "happen" after its expected deadline. This technology could have interesting implication in strategic situations (preventing a extra-planetary body from attaining a collision course).

According to the Russian experience, when the spatial structure is disrupted by time-engineered causal mechanics, the affected region undergoes relative greater entropy (or, less order). The volume of space is forced out to somewhere else, generating torsion fields, much like a balloon

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[15] Frolov, Alexander V. *Practical application of time rate control (TRC) theory*. **New Energy Technologies**. Volume 3, November-December, 2001. p. 15-18.
[16] Kozyrev, Nikolay A. *The possibility of experimental study of the properties of time*. **National Technical Service**, US Department of Commerce, Springfield, Virginia. (JPRS 45238). [Undated.]
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[18] Bearden, Thomas E. *Vacuum engines and Prioré's methodology: the true science of energy-medicine. I and II,* **Explore! For the Professional**. Volumes 6 (1), and (2) 1995.
[19] Bearden, Thomas E. Private communication. February 2002.
[20] Frolov, Alexander V. *Practical application of time rate control (TRC) theory*. **New Energy Technologies**. Volume 3, November-December, 2001 p 15-8.
[21] Kozyrev, Nikolay. A. **Selected works**. University of St. Petersburg. 1991. [In Russian]. Also: **On the way to understanding the time phenomenon**: **construction of time**. A. P. Levich, editor. World Scientific Press. 1995.
[22] Kozyrev, Nikolay A. and V. V. Nasonov. **On some properties of time found by means of astronomical observations**. Collection: **Problems of research of the universe**. Volume IX, M-L, 1980.

will drift away from denser air. A similar phenomenon occurs when the velocity of a mass increases, the force emerges against it, called "inertia"[23]. Now, to increase velocity, the energy of the mass increases. In the case of time, as the movement of energy increases, interaction or reaction with another dimension ensues to compensate for that primary change.[24]

The boundary layer between the two states of space can then act as a mirror and the approaching agent may be reflected back to its source. For example, a light beam may be reflected back to its emitter, in full, or in part, depending on the engineering.

With space-time engineering, we could develop teleportation systems[25]. The course of time goes from the past to the future, in the direction of greater disorder. Going back to the past represents deceleration. The etheric continuum is perceived by Kozyrev is containing variations of "density" of structural elements. The "denser" the etheric region, the slower is the course of time. A zone of accelerated time course would be forced out into "rarefied" ether. A zone of slowed time would be forced into denser ether. Hence the basis for a teleportation technique.

In vivo experiments with a Time Machine

For over 15 years, a Russian association of scientists has conducted experiments with of acceleration and deceleration of time with 4 prototypes of time machines[26]. Light-heartedly, the units are called "muskrat traps" since the experiments conducted in remote forest were disguised as a high-tech electromagnetic technology for trapping muskrats. The time machine units are spheres ranging in diameters of 30cm, 1 meter and 2.1-meter. The shells are encased with coils designed to produce convergent waves. Team leader **Vadim A. Chernobrov** describes converging electromagnetic waves as moving from a periphery to a central point. They are observed when a hoop is thrown into the water and inside the hoop the waves converge. If a potential is applied to do work and to initiate the energy differential process, the other reverse direction scalar (the reverse-time energy flow) must react. Thus, compensation of time - in the form of the deceleration or acceleration of the rate of time - can take place[27].

The first trials involved mice, in which most (25 out of 31) died. Eventually, there were successful 2-hours runs of time travel. An experiment with a dog that was clearly frightened also showed no ill effects. This led to experiment with humans, the first being **Ivan Konov** who, on August 26, 2001 decelerated into the past by 3% of planetary time during a half-hour trial. Dozens of others have experienced the phenomenon and report such sensations as: quicker pulse, giddiness, itching skin, body twisting, numbness at extremities and a case of an out-of-body experience. Harmful effects on living systems do not appear to be linked to the change of the rate of time, but rather to the variations of the time rate value among regions of a living organism.

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[23] Puthoff, Harold E. *The energetic vacuum: implications for energy research*. **Speculation in science and technology**. Volume 13 (3). p. 247.
[24] Frolov, Alexander V. *Trilateral spacetime effect.* **Newsletter of the Planetary Association for Clean Energy**. Volume 9(2&3), April 1997. p. 10-13.
[25] Frolov, Alexander V. *Practical application of time rate control (TRC) theory*. **New Energy Technologies**. Volume 3, November-December, 2001 p 15-8.
[26] Chernobrov, Vadim. *Experiments with a man in the Time Machine.* **New Energy Technologies**. Volume 3, November-December, 2001 p. 6-8.
[27] Frolov, Alexander V. *Trilateral spacetime effect.* **Newsletter of the Planetary Association for Clean Energy**. Volume 9(2&3), April 1997. p. 10-13.

Some individuals reported visual experiences such as “starry sky”, “luminous vortices” and colour spots. Individuals observing outside of the time travel machine noted headaches. The most interesting phenomena occurred just before the start-up: significant presence of ozone for several hundreds of meters around the machine, which was located in a forest. Also noted were strange lighting effects in the sky above the apparatus, accompanied by sounds that inexplicably appeared to generated from inside.

Factors affecting the rate of time

The experiments yielded interesting observations: the phenomenon of the rate of change of time varies according to the hour of the day and according to the lunar phase. The rate can be influenced by a variety of external inputs, including mechanical vibration.

The transition into the future differs from than into the past. It is like movement from any point in a tree – where downwards represents past time. There are many paths possible towards the future – upwards, along the branches, but only one towards the past – downwards to the trunk. The return from the past time is possible only if the time traveler does not interfere with occurring events – or the possibility of returning to another branch of the tree. However, a return move from any variant of future time is possible regardless of the behaviour of the traveller.

The Russian time-travel experiments point to a relationship between inertia and time. In changes of rates of time, the region adjacent to the spheres develops a boundary layer effect, appearing as an aura of “white mist”. The greater the time differential, the denser is the mist.

A similar phenomenon has been observed, and captured on film, with some experiments conducted by **John Hutchison** involving remote-controlled lifting and disruption of objects[28] [29]. It may be that the ***Hutchison effect*** involves causal mechanics.

Time and frequency

Time may be viewed as a process – or “change-of-space” in any direction that does not exist in our dimension[30] [31] [32]. In physics, new properties are commonly acquired as the result of change in some property: charge, current, induced magnetic field, etc. Here, the new property becomes a new dimension. For the frequency of oscillations, the formula is $f = 3\lambda\ l$ [l/s], where λ is wavelength in [m]. Here, the velocity of light is equal to 3 (the 10^8 mathematical degree is omitted since it is a question of scale of measurement only).
Therefore, the analogy between our dimension and frequency gives us: $p = 3/r$ [l/m] and $f = 3/\lambda$ [l/s]. The 3-dimensional radius is represented by $R = \lambda/p = r/3$ [m] and time as a period of oscillation has the relationship: $T = \lambda/f = \lambda 3$ [s]. Time can be considered to be equivalent to R if the linear radius r and the wavelength λ are the same. This is a condition for the spatial

[28] Calante, Pelayo and Andrew Michrowski (compilers). **The Hutchison File**. The Planetary Association for Clean Energy, 1996. p. 16-7.
[29] Hathaway, George D. *The Hutchison effect – a lift and disruption system*. In: **New Energy Technology**. The Planetary Association for Clean Energy, 1990. p. 77-103.
[30] Frolov, Alexander V. *Trilateral spacetime effect.* **Newsletter of the Planetary Association for Clean Energy**. Volume 9(2&3), April 1997. p. 10-3.
[31] Ouspensky, Pavel D. **A new model of the universe**. New York, 1971.
[32] Frolov, Alexander V. *The application of potential energy for the creation of power*. **New Energy News**. Volume 2 (1), May, 1994.

resonance effect. Note that in this analysis, “m” and “s” are unlike when length is measured in meters in our dimension. However, for a new dimension it is possible to use equal units for “m” of 4th dimension and conventional “second”. Furthermore, light (photons) is possible in our dimension only as a process in such a spatial resonator.

Experiencing time dilation

Based on the above discussion, it is proposed that we experience changes in rate of time in our daily life. During sleep, as our energy level decreases, so it can be argued that time decreases and we “go” into another dimension. Aspects of what is observed during the dream-state do not obey the rules of our familiarity of physical existence, and conventional causality - because the rate of time is different. As we start our dreaming, and as we emerge from dreaming, the recalled experiences resemble more our regular experiences. Before and after sleep, our brain frequency tends to resemble the daytime’s.

In effect, understanding our dream state’s sense of time may be a reference key to comprehending the physics and causality mechanics of time engineering.

Time and planetary gravity

The Earth’s mass appears to be in continual growth. 250 to 350 million years ago, our globe may have been half size - with all of the continents as one landmass[33]. In ancient sediments, the natural angles of slope in sand beaches greatly exceeded those of today, indicating that gravity has on our planetary surface has increased 8-fold, several times, during the last 1.5 billion years. Yet the planet’s average density may not have changed – only the acceleration of free fall[34] [35].

There could also be another explanation possible for the change of slope of beaches. The pull of the moon may have been different in the past.

Also, the planetary magnetic fields could have increased over the millions of years, through interactions with the solar flux of hydrogen atoms. The sun is in constant explosion – production of energy differential. Earth and other planets could be responding with harmonics to compensate for the solar activity, leading to an overall increase in magnetic fields. Such a phenomenon may give the illusion that the physical body is growing larger. In other words, with time, the force of gravity would alter planetary mass and energy.

Assuming that the Earth’s density has not increased, it is possible account for, mathematically, the relative increase – growth processes - of the nuclei of terrestrial atoms, including the doubling of mass of nucleons and of electrons[36]. Such calculation also accounts for the emission of 2 different photons by hydrogen atoms (also known as the “red shift” described by **E. Hubble**).

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[33] Kirilov, I. V. *Increase in volume of rocks is one of the reasons of tectonic deformations*. **Academy of Science of the USSR Geologist**. Volume 1, 1963.

[34] Smirnov, L. S. and Ju. N. Lubina. *On the possibility of studying the change in gravity together with geological time*. **Reports of the USSR Academy of Science**. Volume 187, Number 4. 1964.

[35] Maxlow, James. *Earth expansion – the definitive proof*. **Nexus**. Volume 8 (3), May 2001. p. 47-51.

[36] Butusov, Kirill P. *Time is a physical substance.* **New Energy Technologies**. Volume 3, November-December, 2001. p. 8-13.

The phenomenon can be explained with the time-like and longitudinal photons described by the bi-directional 2 scalar potential functions[37] [38]. Could it be suggested that matter is gravity minus time? In other words, gravity is related to accumulation of energy differential (time) in mass.

The value of gravity varies throughout the planet, in part because of the poles and in part due to local density of matter. **Kirill P**. **Butusov** has noted a correlation between places of civilization and regions of greater gravity. A faster rate of evolution may be associated with such gravity zones. In these zones there would be a greater influx of scalar potentials. Time would be more "authenticated" by these energy flows into conscious beings. Butusov reminds us that time has a "positive energy" and flowing into nuclei of atoms or a "negative energy" flowing out of the nuclei of atoms[39].

The outflow would be representative of gravitational energy. Longitudinal waves are known to be able to enter and to leave nuclei. Such flows of time must come from other dimensions. After all, the surface of any elementary particle separates our dimension from another. This leads to an interesting possibility in which all time-associated processes between dimensions are synchronized.

Time reconsidered

Arguments have been laid that suggest that time is equal to energy differential (including movement of light). Living systems "consume" time as part of their consciousness and measuring processes.

It is possible to engineer causality. An understanding of higher-order electrodynamics is required. Techniques exist for the generation of scalar potentials. Causality technology has many applications. They include: therapeutics, energy generation, consciousness technology, inter-dimensionality, defence systems, teleportation, and of course, "time travel".

Appreciation is expressed for guidance in this discussion by
Thomas E. Bearden and Bernard de Montréal.

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[38] Yarkovsky, I. O. **Universal gravitation as a result of formation of ponderable matter inside heavenly bodies**. Moscow, 1889.
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