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The Role of Time Dilation for Consciousness

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Abstract

There will be no sense of consciousness, time concept and perception of change as long as the momentary coding of now in the external space does not co-exist with time dilation. Exact linear coding, at best, could be a copy of the outer space, but it does not contain consciousness. The spatial properties of the system enable spontaneous and instantaneous experiencing time and motion. The structuring in the micro-environment, which is different from what our senses can perceive, has a different and relative 'time' of this universe. This space and time create the information called consciousness.

Index terms—

1 Introduction

he cortical layer with pyramidal neurons in the dendrites appears in the deeper and faster area for information processing in soma cells. Microtubules are composed of cylindrical dynamic polymers comprised of Fibonacci sequence and tubulin proteins with helical geometry. The exploration of quantum vibrations in microtubules in brain neurons and the demonstration that EEG rhythms derived from deep microtubule vibrations support this theory (6). Quantum conductance is enhanced by mechanical vibration and microtubules that have been observed to have their own vibration sets (11,12).

Microtubule information processing occurs with hierarchical modular fractal-like structures. The human brain contains large telescopic frequencies modulating the amplitude of high ones. The physiological architecture of these undiscovered frequency models is different from the other dynamics in nature **??**2.8). It is associated with quick restructuring. This may be turning into a self-conscious, self-contained, selfcomprehending, non-linear, non-causal, selfapprehending data in a different space by carrying the external knowledge into the micro-space in these structures that become repetitive as they get smaller.

Observation occurs at the moment that we call "now". The observer must be in a dilated "now moment" to perceive time and space, and therefore the movement. Relatively more dynamic spatial qualities are required for a relatively dilated "now". The nervous system bio-structure allows this. At the micro level, the concept of time in this space, which is different from what we perceive, is also dilated and relativistic.

Benjamin Libet showed in his experiment that the cerebral activity readiness potential (RP) of the subject started at least a few hundred milliseconds before the subject decided to do a motor movement. He wanted them to determine the time on the fast-moving clock when they consciously decided to move their fingers. He noticed that the subject made conscious decisions about 200 milliseconds before the finger movement, but what was more interesting was that he observed cerebral readiness potential in the EEG about 350 milliseconds before this conscious decision moment. It has been concluded that conscious actions were actually initiated by unconscious processes. The conscious intention was actually an illusion. (7) All of the RP that start early may be conscious. That is to say; free will can be caused by the relatively dilated time of the system rather than illusion. Just like faster aging and elapsing of time for a stationary observer in comparison to a traveler moving close to the speed of light; and slower aging, slower thinking, and slower time for the traveler close to the speed of light, in an external observation. In the Libet experiment, the brain readiness potential has been thought as the relatively fast going traveler. He has a dilated long time according to the one measured by the stationary observer. The external one is found in a few hundred milliseconds. The brain, like the observer close to the speed of light,

will perceive with its inner clock that the duration is short. It decides in a short "now" moment. The shortest self-moment of the consciousness, at the moment that we call "now", corresponds to a longer external time span and all the data obtained in the meantime are processed in this short but objectively dilated time span.

Gray observed in 2004 that; "The speed of the ball after a serve is so great, and the distance over which it has to travel so short, that the player who receives the serve must strike it back before he has had time consciously to see the ball leave the server's racket" and claims that "conscious awareness comes too late to affect his stroke." (13) In practice, though, tennis players claim that they see the movements of the ball consciously. The cerebral activity that starts before the beginning of the conscious action will not give enough time to meet the ball. At the moment when the ball leaves the hand of the rival, the brain mobilizes, consciously, when the photon coming from the ball alerts the visual system. However, the time of external events is determined longer, including the self-imaging methods of the brain or EEG. Consciously, seeing the exit of the ball, exists throughout the entire period detected with EEG. Subjectively, this period is much shorter in the brain's inner clock.

The mind encodes all the possibilities that come from the external macro-cosmos in its structure. The information of this universe is not the substance; it is the no calculation requiring, self-reflecting, inherently, inclusive and comprehensible micro-space information "Quela". The conscious that computes via the connections between the neurons in bio-structures and embedded in the "now" uses the information that contains awareness.

It has been observed that the visual system was not stable. One of the unexplained movements in vertebrates and invertebrates is small active eye movements that occur even in full fixation. These movements terminate the instability of visual information. The first direct measurement of microscopic eye movements (1,4,9) allows continuous and very smooth change of view, with the unintentional, continuous activity of the small eye movements, which are not noticed by the observer and exist even during visual fixation. For the system to maintain a high-resolution image, the eye must be moving. Suppression of miniature eye movements causes fading in the retinal image within a few seconds. (5,10) Visual perception is assumed to be based on a sensory data obtained during fixation and fixation pauses. The image reflected on the retinal photoreceptors changes every few hundred milliseconds and the photoreceptor response changes on each new one. (14)The system ignores immediate cortical output after a saccade, up to 200 ????, known as saccadic suppression.

Unlike the camera, the movement of the foveal photo-receptors during natural vision may be necessary for the understanding of time and motion in a dilated "now". In Libet experiment, the RP that started a few hundred milliseconds before the conscious decision complies with the scan time of saccadic eye movements. In the "now" moment, the information obtains new inputs through saccadic movements in the same period after the dilated moment of the brain as a result of external measurements. The image reflected on the retinal photoreceptors changes per a few hundreds of milliseconds, as much as the dilated time of the brain measured as readiness potential, and the photoreceptor response changes in each new image. The retinal photoreceptors receive new inputs after each saccade. The sampling of visual information is related to periodical re-synchronization of external and conscious perception because of temporal and spatial relativity and because it is more rhythmic than continuous. Analysis moving from Paradox: (15) Zenon of Elea claimed that visual movement is an illusion. In the arrow paradox, the flying arrow is at rest, which result follows from the assumption that time is composed of moments. He says that "if everything, when it occupies an equal space, is at rest, and if that which is in locomotion is always in a now, the flying arrow is therefore motionless." (Aristotle Physics, 239b.30)

The distinction between two different space units is necessary for the perception of motion. Suggesting that the physical part of the arrow, in nonmeasurable, differential time interval is to be seen is a paradox of the proposition. The unmeasurable differential part corresponds to the unmeasurable moment. However, at least two different space-time units should be observed within the same moment for the movement to be perceived. The only resolution of the paradox is possible when the what is sensed by the observer as "now" coincides with a moment dilated in the conscious. As the brain can tell apart two points only when they are in the same space, two sequential moments can only be comprehended in a dilated cognitive moment. This relativity is required for the perception of movement which is then necessary for the change of space given time. In this situation, the brain can observe the dialectic in the space-time which is primary for its perceiving power.

The human eye can detect wavelengths between 380 and 700 nm on average. The observer cannot detect wavelengths below 380 nm. Therefore, it is imperative that the subjective and objective time has different frames of reference to observe the visible light within the moment. In a subjective "now", the two discrete objective points of the arrow must be contained.

In the relativity formula (Î?"S) ² = (cÎ?"t) ² -(Î?"x) ², the smallest average visible wavelength is 380 nm.

(380 nm) ² = (2.99792458 1017 nm / sec) ² T ²-0, Since the cognitive perception of the photon coming to the retina at 380 ???? frequency will be point-based, x = 0, it has to be dilated, ?? = 1.267543561753 × 10 ?15 seconds.

If we define the moment as a point in time, it should correspond to a concrete time, such as 1.267543561753 × 10 ?15 , in comparison with its dimensionless, abstract value. In the dilated state of consciousness, more than one point is observed in more than one moment without dimension in the outer space-time. In the four-dimensional space-time, the quantitative frequency in the 380nm length forms the perception of the purple color ontologically, corresponding to only one point-space in the cognitively dilated moment.

The two points and the point-time of the arrow, which are necessary for the perception of the movement of Zenon's observer, are observed only due to a certain measurable and dilated "now" in the consciousness.

The brain's topology processes the four-dimensional spacetime in a single instant through overlapping. As consciousness observes a point in space, it also recognizes consecutive moments over time. The relativity of the mind concerning its environment, allows it to form a time concept by sensing the multiple time units around it.

The brain of an archer works as if someone who travels close to the speed of light perceives the movement of a person on the earth in an accelerated manner. In evolutionary terms, it would be advantageous to have more information than the environment to sustain existence. Time dilation allows obtaining more inputs.

Zenon's paradox cannot be solved with an absolute time approach. For time consciousness, the subjective space-time must dilate to encompass external space-time. It is the relativity between the mind and the universe that creates the sense of time. The mind follows the object of its own which is a part of the universe relatively at the moment. It perceives the external space and the bodily sensation which is a part of it, as long as it is more dynamic and relativistic.

2 II.

3 Conclusion

At the moment we say "now", the coding parallel to the external information cannot create consciousness. Conscious is a phenomenon that demonstrates itself for the "now". Therefore, a temporal relative dilation of "now" is necessary in a space that is different, more selfcontained, and self-comprehending than we perceive. For the movement to come out in the "now", the observation of the shift in the space within the dilated time that we call moment is a necessary condition. A few hundred milliseconds of readiness potential detected in the EEGs might stem from the temporal expansion.

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