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The Mind Travels on the Waves of Fantasy to Pursue Universal Evolution

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Abstract:
A positive aspect of quantum mechanics has been that we have become familiar with wave sizes. Declined in the various forms that these can assume, we offer a probabilistic approach in the study of phenomena that occur in nature. Whether it is sound waves, electromagnetic waves or gravitational waves, whether they collapse when we measure phenomena, they present us with a completely different view than we have so far conceived of natural events. The maximum systems that have accompanied us to this day, and that have represented the foundation of our knowledge, have failed in favor of a philosophy that projects us into an evanescent abstract dimension, and not usable with the common senses of which we are endowed. In this work we present a synthesis of wave concepts, adopting them to a possible theoretical interpretation of how even our feeling and our knowledge can travel on the special waves of fantasy, and at the same time offer a personal reinterpretation of natural phenomena in harmony with the wave-like conception.

Keywords: Wave motion, gravitational field, spiral motion, molecular footprint, stimuli and receptors, circadian rhythm.

INTRODUCTION

What if the essence of matter consists in the different expressions of the wave movement? The material universe as we perceive it consists of physically substantial particles which affect the composition of other analogues, and leave a mutually detectable trace. Everything in nature is expressed by waves which are the most complete and natural means of communicating. Sounds, gravitational attraction, light, or even material contact are all expressions of the wave phenomenon. And it is natural that communication uses this powerful means of expression. In fact, the waves for their particular structural conformation can express with a simple means a lot of information. Their graphical representation makes this concept intuitive Fig.6 [1-2]. A wave is formed by a regular or not regular oscillation, in the first case it is defined as harmonic and means that the oscillations are repetitive and always maintain the same values that are the amplitude, the wavelength and the frequency, the latter indicates how many times the oscillation is repeated in space-time. All these values can vary and assume infinite degrees of intensity and therefore infinite possibilities of information.

In addition, waves can carry particles of different nature, electric charges, photons, molecules of odors and flavors, further amplifying their informational content. In addition to this, they can follow paths that describe spiral or helical motion, the first takes place on a second plane in space, to understand the infinite potential of this communication medium. There are also magnetic waves that attract or repel material bodies. It is a form of interaction that takes place between material bodies with particular physical characteristics. It could be the magnetic force that keeps the orbits of the planets stable. Einstein's theory of gravitational waves as a product of space-time deformation does not explain why satellites do not fall on their planets and maintain their orbit

Fig.1, [3-4] If it is related to the momentum and kinetic energy of the satellite, why does the planet around which they rotate not follow its own orbit? Why do the fixed stars around which planets rotate not also follow an orbit? One explanation might be that all celestial bodies are endowed with magnetism which is the true force that keeps them at an optimal distance to maintain their orbit.

Atoms and molecules also emit waves, or frequency spectra, which are characteristic of each of them and can thus be recognized. We can conclude that without wave motion it would not be possible to communicate. Even our most widespread means of communication, language, is based on the emission and reception of sound waves. Only if we limited ourselves to the description of this medium could we fill entire libraries. In the universe space-time does not exist apriori, the admission of its immanent presence is an abstract concept devoid of physicality and measurable dimensions. Space-time is the place of events that takes place when it is occupied by matter. It assumes physicality and dimensions when it is occupied by physically consistent material bodies, which by their presence modify the previous conditions of voidness and make it perceptible. According to Einstein, it is the presence of a mass that deforms space-time and that results in gravitational waves [5]. But the deformation occurs around the entire space-time occupied not only on a one-dimensional scale as Fig.1 is depicted.

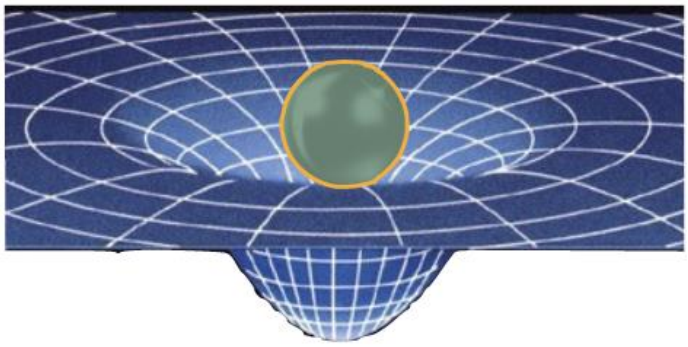

Fig.1: Representation of the genesis of the gravitational field

Since space-time does not lie on a plane but expands in every direction, it should have a spherical symmetry, the presence of a mass generates a spherical deformation of the whole space-time of its around Fig.2.

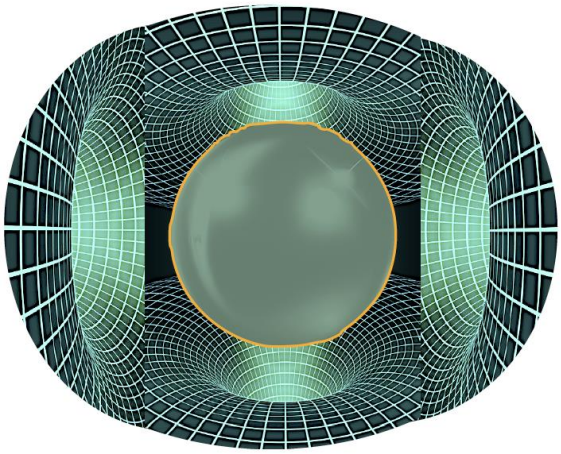

Figure 2: Representation of the deformation with spherical geometry of the space-time and gravitational field

When, how and why celestial material bodies originated cannot be known. The concept of a certain origin of universal matter is not expressible and knowable because it always refers to the mystery of how it is possible to generate material substances from nothing at any point of space-time. The presence of material bodies not only generates and makes the space-time recognizable, but the transformation thus generated produces a spiral wave movement Fig.3. They are gravitational waves [6-8].

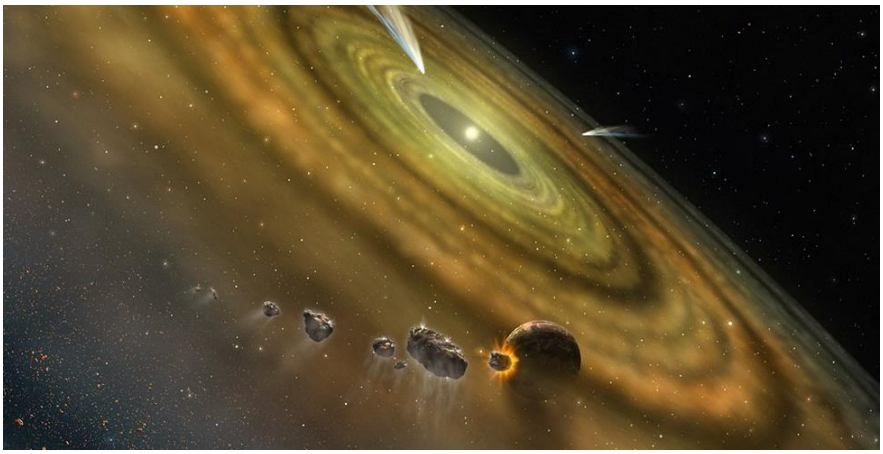

Figure 3: Propagation of gravitational waves

A series of considerations can be made of why so many natural phenomena follow a spiral path in their formation. A spiral is an open asymmetric curve generated by a point that rotates around a fixed origin, called a pole, that increases (or decreases, according to the direction) in a continuous way the distance from it. The spiral curve is therefore the trajectory drawn by a point P mobile on a half-line that rotates around its center O; OP is called vector radius (r) of the spiral and the curvilinear strokes are called turns Fig. 4.

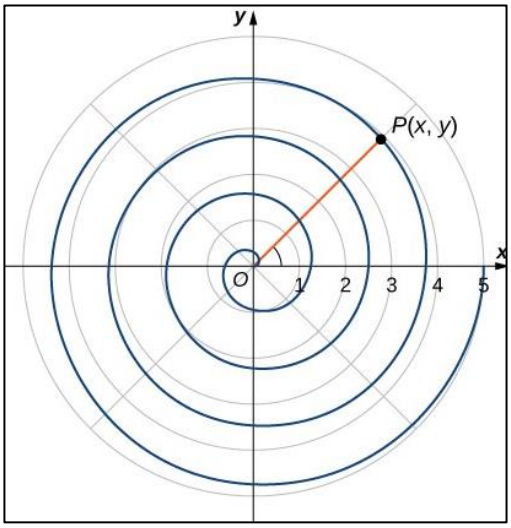

Figure 4: geometric shape of regular spiral

The spiral can be uniform when the distance between the turns is uniform, or logarithmic when the distance between the turns follows an exponential trend. The spiral motion is the most widespread and dominant in the universe, we find it in all living forms, animals and plants, in the meteorological manifestations, cyclones and tornadoes, up to the movements of galaxies. The

spiral motion also finds interpretations on the functioning of our brain that according to Yiben Xu [9].

Spiral motion is another of the mysteries, along with wave motion, with which the universe manifests itself by challenging our intellectual abilities. What would happen in the presence of many celestial bodies if each of them generated its own deformation in space-time and produced very complicated interference phenomena? Fig.5

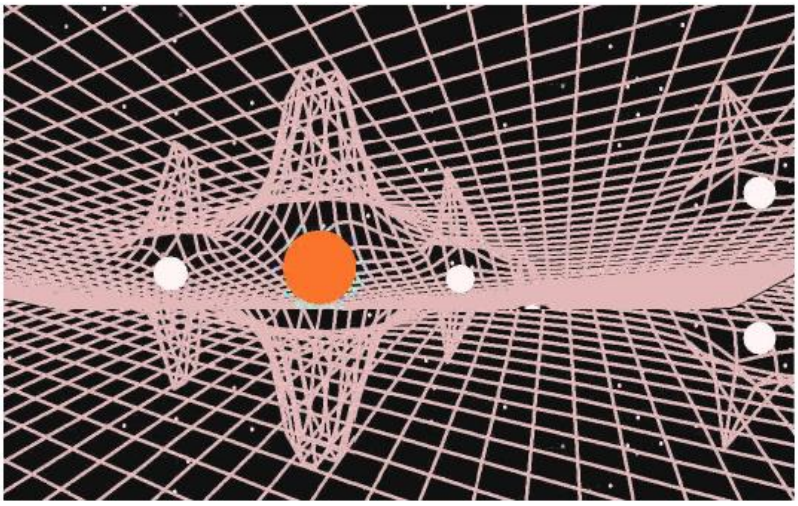

Figure 5: Multiple gravitational fields

COMPARISON OF VARIOUS TYPES OF WAVES THAT EXIST IN NATURE

The material bodies and phenomena that we observe in nature are manifestations of the different forms that can take the various types of waves. The range of dimensions and properties that waves can assume is superimposed on the range with which matter is presented and manifested. Our contact and knowledge of nature is obtained with our senses which are the means by which we enter into relationship with the outside world. And it is a universal phenomenon that occurs in all living beings from bacteria to man.

But how are sense organs formed? They have evolved to collect and recognize the different types of undulating stresses that stimulate them. In all living forms receptors and sense organs have specialized to receive and respond to specific types of waves and their morphological and energetic characteristics. And it is amazing to observe the infinite modes of sensory adaptation, each of which is able to respond to the stimuli of its environment. In the absence of senses, it would not be possible to know the world. But why are the senses specialized in receiving different forms of waves? Is it because matter consists and manifests itself with different states of aggregation of waves? If so, why has the essence of matter been organized in a wave-like form?

Let's try to answer this series of questions starting from the description of the various types of waves.

Various Types of Waves

The Mechanical Waves and The Sound:

Sound is transmitted only in a physical medium; it is not transmitted in a vacuum. It is generated by a source capable of modifying the physical medium in which it propagates producing an oscillation within it. Sound waves are produced by a source capable of vibrating that transmits the

oscillations produced to the medium of propagation, air, water, solid bodies. The range of oscillations that sound can produce is very wide from microwaves to very wide waves, changing frequency and amplitude Fig.6 left. The effects they can produce are also very wide, passing from the sounds of musical instruments to the sea waves, depending on the source and the means of propagation. Mechanical waves therefore do not transport material substances, but transmit energy and modify the matter through which they propagate.

Electromagnetic Waves:

Unlike mechanical waves, electromagnetic waves carry on the wave of propagation particles charged with energy and therefore do not need a physical means to transmit because the matter carries the same waves Fig.6 right. In their motion the electrically charged particles traveling on the waves produce a magnetic field. Thus, they simultaneously generate an electric field and a magnetic field, and can also propagate in vacuum

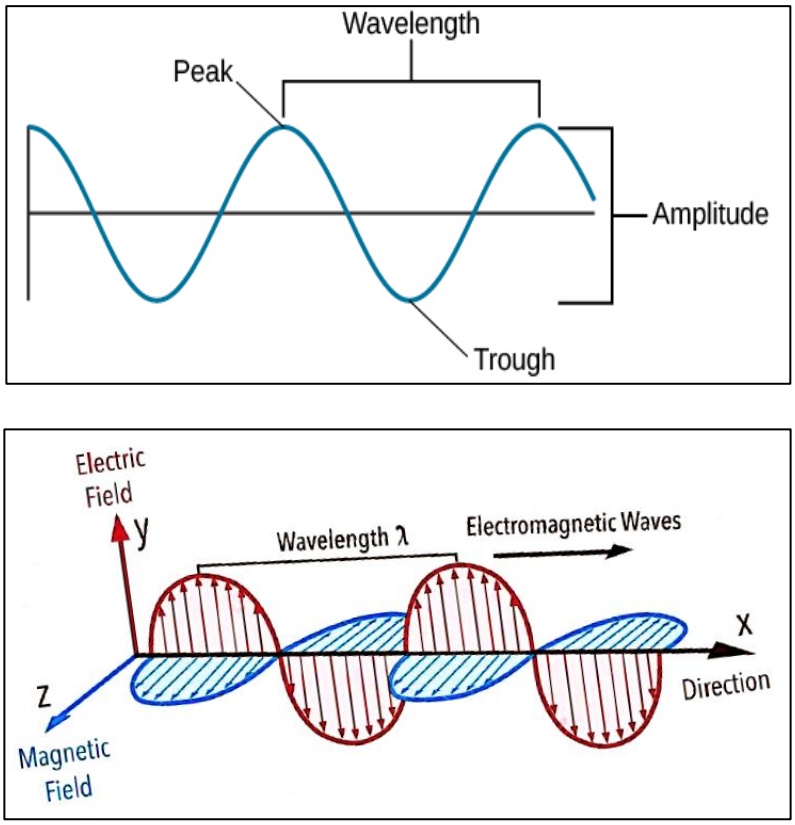

Figure 6: Different types of, Mechanical (left) and electromagnetic (right) Waves

The Gravitational Waves:

have an energy content dependent on the total mass from which they originate (stars, planets, planetary systems, etc.).

As we have seen before, the gravitational field is produced by a mass that deforms space-time. Among the large celestial bodies present in the cosmos, stars emit electromagnetic and gravitational waves, planets, gravitational waves.

The transmission of elastic, mechanical or electromagnetic waves occurs seamlessly. The interference spectrum observed, for example in the ripples on the surface of the water and in the

dark bands detected by the young fissure experiment (1801), represent the energy peaks of the waves, while you do not see the lower values that cancel each other out.

This suggests that energy is transmitted by leaps and bounds, that it is quantized, in fact it continuously radiates in all directions of space-time and follows a spiral or helical motion.

It is possible that the first celestial bodies such as stars had a very high energy content, produced by the nuclear reactions within them, which were so strong as to release charged particles and remove them from their gravitational force and project them into space.

Thus, they gave rise to electromagnetic waves and other forms of particle waves. Stars are usually gaseous celestial bodies of enormous size, formed by small atoms, mostly helium and hydrogen atoms, that produce a huge thermal agitation that subtracts them from the force of gravity and are emitted in the form of light and heat.

While planets of smaller dimensions are solid masses formed by heavy atoms and atomic aggregates that, as mentioned above, according to Einstein modify the conformation of space-time and generate the force of gravity.

When the stellar masses exhausted their energy and compacted into inertial bodies, they lost the ability to produce electromagnetic waves and retained the ability to form gravitational waves.

Probably the celestial masses of the original universe had an energetic content of electromagnetic and gravitational type together, only after their cooling, gravitational energy prevailed. The waves emitted are directed in all directions of space-time and have spherical symmetry and follow a spiral or helical path. By virtue of their shape the waves reach peaks of maximum value and zero when they change direction passing through the equilibrium position.

Therefore, the resultant effect is that of a quantized emission of the generated phenomena. The phenomenon of interference produced by wave trains expresses the quantization of wave processes. A property of universal matter, according to quantum physics, is its structure in elementary particles, and is endowed with a mass with dimension and energy that is transmitted in the form of radiation. The greater the mass, the greater the energy it transmits.

Because all substances are not motionless but move continuously, and according to their properties emit either mechanical waves, not transmissible in a vacuum, or electromagnetic waves that contain particles capable of transmitting in any medium.

Thus, the presence and properties of matter can be perceived by other material substances with mass and energy consistent with that transmitted, so as to be mutually interconnected. It is as if every atom or molecule is able to leave its own imprint, a kind of unique and characteristic fingerprint, on another molecular complex that can take and copy its contours, so as to recognize and distinguish it from all the other Fig.7.

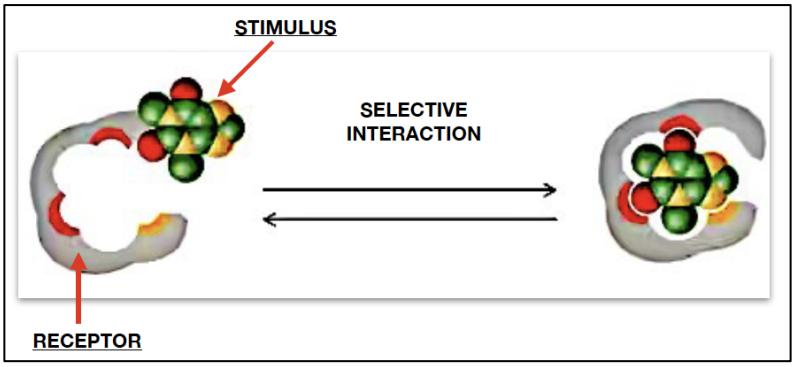

Figure 7: Scheme of Molecularly Imprinted

It is by this mechanism of "molecularly imprinted" that probably, over billions of years of evolution, stimuli of various kinds have shaped and selected the most suitable receptor organs to receive and recognize them.

RECEPTION AND RECOGNITION OF STIMULI

Reception and recognition of stimuli are two distinct but connected phases. Reception shall be followed by recognition resulting in a state transformation allowing the receiving facility to conform to the stimulus received [10-11].

Thus stimulated the receptors modify their state and change their dynamic equilibrium condition. How are the different stimuli transmitted and recognised?

The transmission again is wave-like, which can be in the form of mechanical waves, or electromagnetic waves formed by waves and particles. The recognition system is a system in which all the stimuli received over time are stored to be compared with each other. Here they are recognized and distinguished when compared with other analogues. So, we can conclude that we live in a universe of wave systems in constant and reciprocal interaction with each other. The sensory stimuli that we receive from the external world, through the receptors we can detect them in the form and consistency of the state of aggregation that they assume, solid, liquid, gaseous, and the effect produced, light, heat, sound, and so on [12-13]. Stimuli in any case, leave perceptible traces through which we have knowledge of their properties. We also receive stimuli that do not present any of the consistencies we have indicated above, so much so that they seem immaterial. Yet we are aware of it yet so light, heat, sound, gravity, are some of these sensorially perceptible but materially elusive phenomena [14-17]. Over the centuries, scientists and philosophers have tried to describe them, translating them with the help of technology, from intangible essences into materially perceptible and measurable quantities. These are the magnitudes that thanks to the mediation of technological tools, once collected and recorded, we have represented them with a conventional shared language, and by using graphic signs, formulas and diagrams that represent us the immaterial universe in a form that we can modify at our will and adapt to our needs. In this process of reification of immaterial substances, we have transformed the intangible properties of matter, into editable quantities, taking them as tools with which we can understand the real world.

INTERACTION BETWEEN CELESTIAL BODIES

The presence of material bodies generated a modification of the spacetime of their environment, and produced the gravitational interaction between celestial bodies that had appropriate

distances. Consequently, the celestial bodies have acquired in the passage of time a proper motion on orbits defined by mutual interactions. On the individual planets and on the earth a new cosmic mechanism has intervened that has modified the events on their environment synchronizing them to the cyclicity of the astral conditions and the mutual influence of the satellites.

When the earth and the primordial Biosphere were formed with the first living organisms on its surface, the same phenomenon of synchronized interaction was established between the two systems. The result of the cyclicity of astral events has exerted a huge influence on the living forms present on our planet, so as to condition the evolution and behaviour of all activities and in particular of those fundamental for their adaptation and survival.

The adaptation of the living to the cyclic conditions of the environment is called Circadian Rhythm, and is the homeostatic adaptive response of organisms to the cyclic environmental variations of the alternation of day, night and seasons. The prefix "circa" of the word Circadian, expresses well the concept of approximation of the biological rhythm to the astral rhythm. In fact, the biological rhythm is not exactly 24 hours, as is the case for the astral rhythm, but is also cadenced according to the metabolic-behavioral activities of the individual living.

The biological mechanism at the base of the cyclicity of the rhythm is produced by the modifications of the metabolism in synchrony of the change of the external events. Thus, the flow of the Earth's cyclic rhythms that scan the repetitive periodicities of external changes, produces continuous diachronic changes in the biomass present in it in order to obtain adequate adaptive responses to the environment.

ASTRAL INFLUENCE ON THE EVOLUTION OF THE LIVING

Communication is the pivotal mechanism by which the interaction takes place between the elementary particles that form the universal matter and the receptor system of the living and conditions their formation and evolution.

The high level of organization and complexity of the biosphere generated with the birth of the Earth has undergone changes for very long times, measurable in geological ages, and all this time the Sun has been sending its radiation to the surface of our planet.

The biosphere, considered as a system, has important exchanges of matter with the interior of the Earth. External inputs are very rare (meteors and meteorites). In the biosphere therefore an energy flow and a cycle of matter are detectable. The constant energy flow comes from the Sun and passes through all biological levels and environmental factors, allowing the maintenance of life as we know it. Therefore, the amount of living matter present on Earth, and therefore in the biosphere, is substantially stable, and is not subject to new and continuous inputs. It can only vary with the reproduction of living species at the expense of environmental resources. As a result, the individual atoms of the chemical elements are continuously recombined into the increasingly complex compounds, and are continuously degraded and reduced to simple elements, in an endless cycle of matter.

The system formed by the binomial Biosphere-Environment, called Ecosystem, is an interactive dynamic system in equilibrium, in which astral forces are the independent variables that condition the whole system [18]. The Biosphere can modify the circumscribed conditions of its Habitat but

does not affect the conditions of atmospheric and geophysical events. This is what happened with the evolution of the environmental complex until the advent of the industrial revolution. With industrial production, man has completely changed the climatic conditions, consequently modifying the rhythm of biological events.

How does the communication between the particles that make up the Biomass-Environment system manifest and how does it keep in constant contact?

It is manifested by physical contact, direct or indirect, the latter is mediated by a transmissible and mutually perceptible mechanism.

According to quantum physics, this medium consists of electromagnetic waves. We have already mentioned these waves that have a high informational content represented by the modular dimensions that can assume: in their length, amplitude and frequency to which is added the energy of the particles they carry in the form of electric charge. So that a universal code communicates all the organic and inorganic matter present in the universe. It is a code based on modulation of amplitudes, frequencies and energy transported by electromagnetic waves.

COMMUNICATION BETWEEN SENSORY SYSTEMS AND THE ENVIRONMENT

The ability to communicate environment/ Biosphere is affected by the properties of the sensory systems of living. These systems are formed by molecular complexes of a protein nature that vary their conformational state as a result of the effective stimulus they receive, are distinguished in Mechanoreceptors, Thermoreceptors, Chemoreceptors, Photoreceptors, etc. Fig.8.

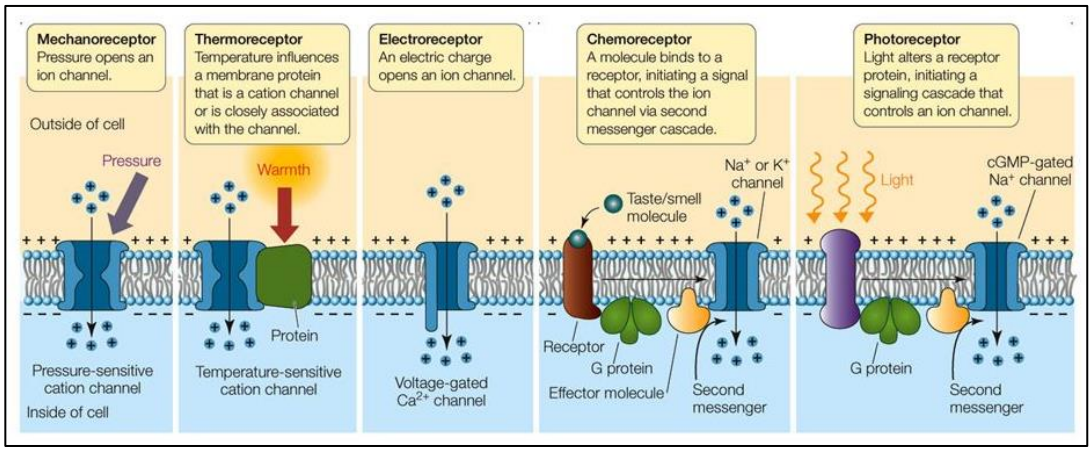

Figure 8: The various receptor systems

Ultimately, the whole communication system, from the single-cell level to complex neuronal networks, is determined by the quantity and quality of the receptor systems they present and by their distribution on the cell membrane. This system of transmission is extremely sophisticated and effective, proof of which is that it has been universally adopted in all living organisms, and that it is encoded in the genetic heritage. The variation of the receptor conformation is then transmitted to the biological system, which can adapt its internal organization to the physical conditions of its environment.

The known receptor systems are capable of responding to the frequency modulations of the electromagnetic waves they receive, the effective response is obtained when wave and receptor

stimulus come into tune or, as the quantum mechanics states, "in resonance". The very close link between the activity of the living and their environment has indissolubly conditioned the biological evolution on earth during the geological ages.

In the relationship between the Biosphere and the Environment, the latter has predominated over the organisms present in it because it results in the astral and climatic conditions to which the living must necessarily adapt [19].

Since the weight of the environmental factors or (environmental variables) within which adaptive transformations must take place is decisive, we must examine how these factors have transformed over the millions of years of life of our planet.

Environmental factors to consider are for example: temperature, pressure and chemical composition of the atmosphere, precipitation and cloudiness, ocean temperature, volcanic eruptions, and so on.

For geodynamic events it is ultimately spontaneous events on which living beings have little or no influence and therefore must undergo them and adapt to them for their survival. The science that studies the climate and the environmental conditions of the earth in the millions of years since its origin is called Paleoclimatology.

Changes in geodynamic factors that cause climate change include: changes in solar activity, in the composition of the atmosphere, in the arrangement of continents, of ocean currents or Earth's orbit and can change the energy distribution and energy balance of the Earth, thus alternating the rhythm of the planetary climate [20-21].

Important are also the factors that contribute to changing the cosmic situation of the earth, its orbits and the amount of solar rays reaching the hemispheres, although the global radiation flow remains the same. This is the alternation of the equinoxes, the orbital eccentricity and the inclination of the Earth's axis. These are all temporal events that are cyclical.

Such cycles would be able to explain the global climate changes occurred on a timescale of millions of years corresponding to the period of glaciations/deglaciations in line with what was observed in the studies of Paleoclimatology.

The fundamental factors that determine the alternation of the seasons and the night day cycle are:

- The elliptical orbit that describes the earth;
- the period of rotation in our planet is different from the period of revolution.

The elliptical orbit of the earth is the result between the kinetic energy of escape of the earth and the force of solar attraction; (Kepler's law: "the planets orbit on elliptical orbits, of which the star occupies one of the foci") Fig.9.

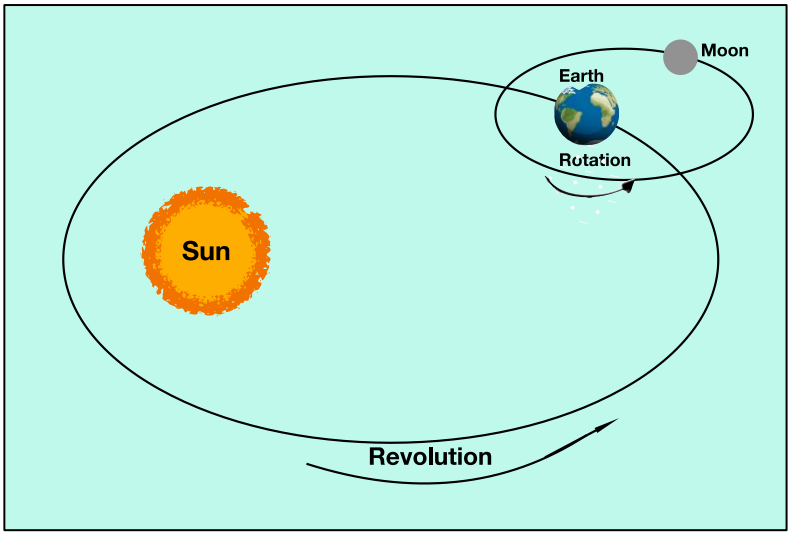

Figure 9: Representation of the Earth's orbit

The fundamental forces that feed the cyclicity of events on earth are dependent on the orbital movements of the earth relative to the sun. The sun emits electromagnetic energy in the form of light, heat and gravitational force that are constant. The earth with its rotation movements on its orbit and revolution on its axis determines the astral rhythms that modify its energy content.

Along its orbit the earth changes the electromagnetic and gravitational forces to which it is subject, when it is closer to the sun (perihelion) the forces are maximum, as it travels through its elliptical orbit the forces become smaller and smaller until they reach a minimum when the distance from the sun is maximum (aphelion). The rotation motion on the Earth's axis has a period of 24 hours and determines the circadian cycle [22-23]. Noteworthy is that the total energy that the earth absorbs is constant, what varies are the exposures of on its surface compared to the solar rays that are precisely circadian. Since the Earth's axis of rotation is inclined by about 23. According to the theory of Milutin Milanković (1879-1958) the collective effects of cyclic variations of the Earth's orbital parameters have a preponderant effect on its climate. The orbital time of rotation and Earth's revolution have the same wave rhythm, on different time scales.

CONCLUSION

Retracing the topics described in this article, we can trace a common denominator that unites transversely all the phenomena that occur in the universe from the microscopic level to the macroscopic level. It is the wave motion that in its various manifestations seems to be the guiding force that governs and directs the motion of the universal becoming. If we interpret it according to the theories of quantum mechanics it is the same mechanism, the same energy that incessantly moves the elementary particles, from the atomic level encoded in the Schrodinger electromagnetic wave equation, to the motion of the planets described by Kepler and Milankovic's theory, to Einstein's gravitational waves.

These are always events that follow oscillatory trends, produced by entities that from time to time characterize their chemical-physical properties of the matter in which they are embodied. And it is surprising that our own ability to know the universe of which we are an infinitesimal part, follows the same rules and obeys the same laws, outside of which we would fall into the deepest mystery. Because as we have described in this article also stimuli and receptor systems use the same wave mechanisms. Perhaps the conjecture/hypothesis that we have presented here is only a rewarding

metaphysical abstraction, devoid of real scientific content, but at the moment reconciles us with the only plausible interpretation on the essence of universal matter that we can express. Then let us allow ourselves to be lulled by the waves of fantasy that seek to pursue, without ever reaching it, the elusive reality of becoming universal.

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