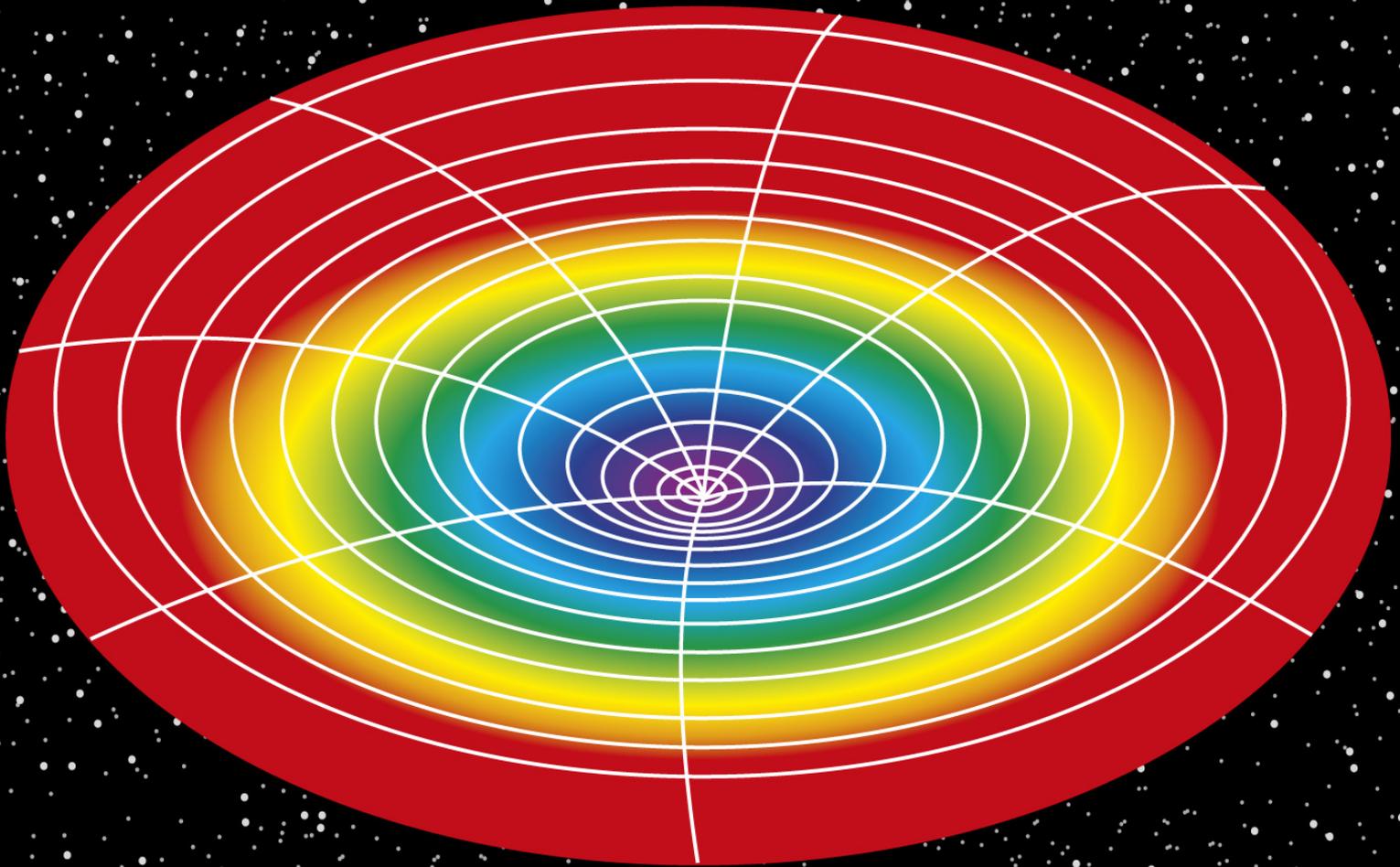


# THE GOLDEN CENTURY

- Science and Scientists -

year I - N. 5



**Nature and its Unified Manifold**

**The Magnetic Manifold**

Taurus Edition

## Preface

With this sixth essay of mine, I have recalled to mind the missing unification. The more than one hundred years during which Science and Scientists alike have not been able to find the way to the so-called unification. In line with the theory herein advanced, the missing unification finds an explanation in the mere fact that both Relativity and Quantum Mechanics are lacking at the base. For both time is a mental abstraction, for both space, the whole of universal space, is a *vacuum* charged with energy. No one says how this energy is generated, from where it came, where it is going, how long it lasts or alternatively how it regenerates itself.

The lack of informations, as the reader who followed me up to here knows, pushed the fathers of Quantum Mechanics to formulate theories based on indeterminism, on uncertainties, on the duality, on complementarity and all the rest. A way of thinking resulted from a space unknown, alien and charged with energy equally alien and unknown.

If one were to be forced to sustain of having his *empty* pockets full of big money in cash, I don't think that looking at himself in the mirror he would be happy of what he said with or without his own belief.

Having read *Nature and its unified manifold*, the shrewd reader finds himself digesting : ① a captivating piece of knowledge, since he has just convinced himself that the universe has two fields one linear and the other nonlinear, and ② these two fields are created by a single electromagnetic process common to both fields and this means that one cannot exist without the other. There is no need to move about sweating the proverbial seven shirts to look for the unification. Unification is here with us, it has been always here with us.

My second argument *The magnetic manifold* is only putting in evidence my fussiness on one hand and on the other the indulgence and in some cases the carelessness of Science and Scientists in the past as well as in the present.

Actually, free from the indetermination and the vague, left behind the uncertainty that dulls the mind, given away for good the wave-particle duality we find ourselves amongst the almost infinitely small details of the universal map. We can point out with absolute mathematical precision all the energy levels created by the electromagnetic radiations' filaments in the microworld as well as in the macroworld.

I can now assert and will assert that the universe is the ultimate product of a deterministic process which expands and/or extends physically and which, in its interactivity, is synonymous of natural evolution. We all should be able to see how this deterministic evolutive process can flourish if there is a supply of raw material for it to try an almost infinite number of combinations; and if there is enough time to produce any degree of orderly harmony. In other words, the evolving process needs and it has: (i) a huge quantity of elementary particles, and (ii) a long duration of time.

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25<sup>th</sup> February 2018

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## Nature and its Unified Manifold

### *Foreword*

The following three fundamental axioms are the foundation pillars upon which the proposition herein put forward rests.

- I. Time and space are physically created by an electromagnetic process of temporal expansion and/or spatial extension to be identified with the existing electromagnetic spectrum.
- II. Time and space have their origin in each and every electromagnetic pointlike point-source in free (optical) space as well as in matter.
- III. Given (I) and (II), it follows that the speed at which time and space are created: (a) is the upper limit and dictates the physical laws in the world we live in (fully expanded time dimension), and (b) it is a function of linear and nonlinear motion in free (optical) space.

In particular, axiom (II) implies that space is permeated by an all-pervasive and permanent substance which I shall herein label *time-fabric*, meaning to say: a permanent non-zero source of energy. From this we may deduce that space is filled by pointlike point-sources which are magnetized by the finite and uniform speed of the expansion and/or extension. These point-sources during their decaying process form all lengths of time and all lengths of space. These lengths are the effective volume containing energy. The entire free (optical) space is, therefore, a universal unsaturated sink with continuous absorption because of the finite and uniform speed of expansion and/or extension.

### *Introduction*

With reference to the Unified Field Theory or Theory of Everything, a solution is here suggested in an attempt to come out from the impasse in which Science has come to find itself. Notwithstanding the time and the talent thrown in to try to incorporate gravitation as portrayed by General Relativity with Quantum Mechanics' Standard Model describing the quantum mechanical nature of the other three fundamental interactions, that is: electromagnetism, strong nuclear force, and weak nuclear force, the road taken with enthusiasm and diligence showed itself to be a dead end road.

Just recalling to mind that gravitation is much, but very much weaker than the other three forces of nature. This state of things is due to the fact that gravitation operates in a fully expanded world (our world). In this world of ours, the energy per unit volume is just very, but very weak. The other three interactive forces belong and operate instead in what in the theory herein proposed I have called *time and/or space sub-dimensions*. Another reminder. The scientist knows that the particle's temporal world is not the same temporal world of the observer watching it. As for the electromagnetic force, things are not clear at all. Despite the fact that it is there to hold together atoms and molecules, we will have a chance to see it operate in circumstances and with functions never seen before.

Having said that, let me now begin what I have named *Nature and its Unified Manifold* sprang from a set of principles sustained by the theory herein expounded which unifies, beyond any doubt, the fundamental interactions of nature. A theory that will help us to reconstruct and unify the basic notions of Relativity and Quantum Mechanics, a theory that will help science integrate in its laws time and space as parameters created by electromagnetic radiations' filaments.

### *Status quo*

The persisting interest of Einstein and the pledge of others since the beginning of last century did not give any results; there hasn't been a way to unify these physical aspects of the universe. The four forces of nature, we may say, have remained the way they were and the Theory of Everything has itself remained more than ever elusive. In other words, physicists in the name of Science have given up the unified Newtonian conception of the universe and afterwards did not know how to find a new conception equally unified that would respond to those laws that must be rigidly scientific.

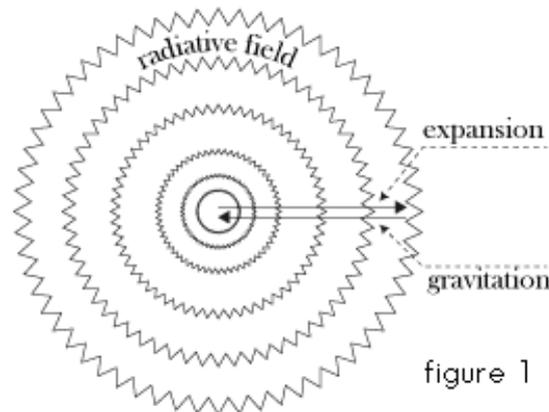
Pulling into play other space dimensions to explain the failure of the missing unification makes one understand that the intuition of the scientist is working. He knows the direction to take, but he is light-years away from the solution of his problems since he does not realize that the other dimensions are proper temporal worlds, with a difference of paramount importance. These worlds are populated, very tight indeed, by filaments that put together the structure carrier of electromagnetic radiations. If they remain undisturbed will continue to renew themselves as filaments for the creation of all electromagnetic radiations wavelengths. If they are instead interfered with by incident light or by a disturbance of electromagnetic nature, they cease their existence as filaments since they are forced by annihilation to leave the *spatial world* and their sub-dimension, they take with them their own mass and their own life-time and materialize themselves in the *temporal world* as a particle in the fully expanded time dimension (our world). We are therefore talking about worlds each of which is characterized by its own energy per unit volume which is not equal to the energy found in our fully expanded world.

No one and no thing can enter in or go out from those worlds, without burning or disintegrating itself. The only thing that goes out from those worlds to enter in a fully expanded world, and it is doing it with a continuous flow from time immemorial (for each tick of the clock), it is an adynamic magnetic undulated line. This line is the only thing left from 300 million electromagnetic oscillations which during the physical process of expansion and/or extension for the creation of all wavelengths of time and/or space have halved themselves all along the descending energy levels and all along the ascending wavelengths levels.

### *Argument*

What we are seeing in figure 1 may be applicable to a single atom, to free (optical) space or, if we want to, we may extend the physical concept to the entire universe. We can do this keeping in mind that free (optical) space is an expanding substance made of infinitely many small pointlike electromagnetic point-sources of self-generating energy each having its own unsaturated sink with continuous absorption because of the finite and uniform expansion and/or extension (the wavelength proper of the process for the creation of time and/or space). These pointlike point-sources must be considered inertial frames moving at the speed of electromagnetic radiations and consequently their slope is  $1/c$ , or  $3.335 \times 10^{-11}$  centimetres per second. In addition to it and, by extrapolation to cosmological size, we may think of an entire cluster of galaxies containing

infinitely many electromagnetic pointlike point-sources and retaining the same dynamics of a single point-source.



Following this line of thought and thinking for a moment of the universe as a sphere, we have before our very eyes the two faces of the one and only identical reality; we have first a nonlinear electromagnetic field known as the gravitational field when we move from the outer edge of the sphere towards the centre; and then we have a linear electromagnetic field known as radiative field when we move transverse to gravitation and along any given wavelength, that is: forming a circle starting from any point along an imaginary radius to indicate the type of electromagnetic radiation we have chosen.

I shall herewith point out to the reader that my proposition finds strong support in the empirical evidence of:

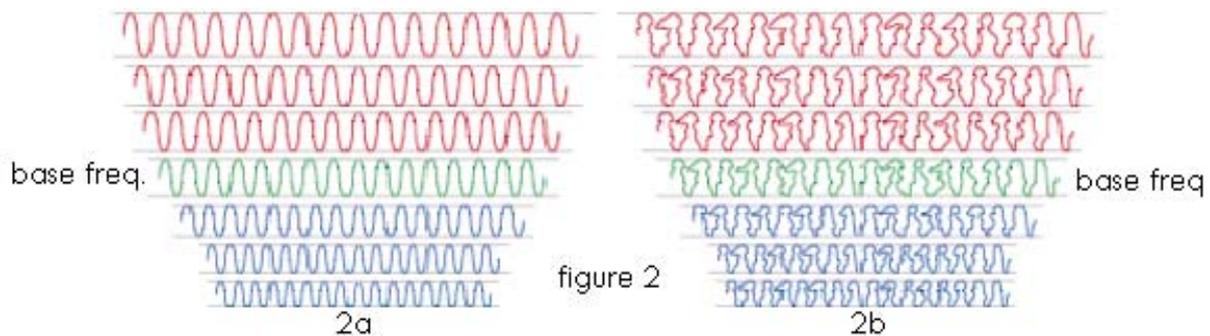
1. Radiating energy in the gravitational field (nonlinear field) where the energy itself is variable even though the speed remains constant throughout the energy steps, and
2. Radiating energy in the electromagnetic field (linear field) where the energy is constant and the speed is constant.

This is then the universe in which we live in and, by the look of things, it appears to have two different physical structures: one running transverse to the other. We may then say that in order to explain the large scale behaviour we experience, the universe must be seen in two different ways. In the non-linear, gravitational field, the wave propagates with direction in space becoming longer up to, and not exceeding, the finite length of 300 million metres. This explains why at each energy level the wavelength is not the same and the waveform is not the same; and this also explains why along the expansion/extension and/or gravitation there is no signal transfer, or telecommunication.

On the other hand, when viewed transverse to the expansion/extension and/or gravitation (linear field), the wave is separated from the one that comes before and/or after by Planck's distance and it may be considered to be *resident energy* and as such maintains the same length and the same form, and it is part, together with similar waves, of a telecommunication channel for any electromagnetic signal to travel with direction in space. Despite of this, we all have learned and are familiar with the wave so-called *progressive* moving to the left or to the right while retaining the same sinusoidal waveform. Our physical laws profess that the wave travels in a linear field and is doing it in vacuo with nothing in front to guide the path. Here, there is no need to say that a wave travelling while retaining its own length and its own form, the way we have inherited it, it never made sense; from the point of view of the theory herein expounded, one such a wave is downright paradoxical.

Let us think about it. Science and in particular radiotechnology which handles propagation of electromagnetic waves explains in great details the way a wave moves in space. I should here add: a space charged with energy for experimental evidence, empty for belief, and unknown for heritage. Therefore, the *great details* must be taken with a grain of salt. For the benefit of the reader, and in line with the argument in progress, I am putting in evidence the electromagnetic signal belonging to the linear field and the frequency carrier belonging to the nonlinear field (expansion  $\uparrow$ , gravitation  $\downarrow$ ). I recall here that for science, the four fundamental forces of nature operate in a single field, the only one recognized, and within which it hasn't been possible, for more than a hundred years now, to find the unification.

The *manifold*, as the reader have seen in my last essay *The surface of the universe and its function*, consists in the time and/or space sub-dimensions on one side and on the other on the fully expanded dimension laying between the wavelengths of 1 millimetre (microwaves) and the terminal wavelength of 299 million 792 thousand 458 metres. The whole thing, that is to say the manifold, includes therefore the radiative (linear) field of James Clerk Maxwell mathematician *extraordinaire* and the creative (nonlinear) field within which operates gravitation.



In figure 2 we see the stance of a train of waves taken from an oscilloscope and corresponding: ❶ to the *frequency carrier* which is the frequency or wavelength of the electromagnetic signal and it represents an aspect or instant of the nonlinear or creative field; or to put it in another way: of the nonlinear or gravitational field; since, as we have already seen, gravitation operates in the same nonlinear field of the expansion, and ❷ to what I call *electromagnetic signal* moving with direction in space in the linear or radiative field.

At this point I have to make some clarifications. To complement the central frequency I have put three side variants above and three below of the same frequency. I must now clarify my doing so. In order to avoid interference, the neighbouring frequencies of two radio stations transmitting, for example, on medium waves (MF) must be separated by a minimum of 10.000 cycles. The shorter are the waves the bigger (in cycles) must be the separation to avoid a possible interference. As I was saying, with figure 2 I intended to take into account that next to the central frequency there are on both sides hundreds of channels or energy levels whose frequency is attenuating itself with the distance from the central frequency. To be noted that: ❶ the adverb *next* just mentioned in real terms it means *all around*, seen that the signal irradiates itself in all space directions, ❷ the signal in figure 2b does not move to the right or to the left as demanded by the laws of physics and electronics, but it irradiates in all space direction and its propagation speed of 300 million metres per second makes it one way channel, ❸ figures 2a and 2b regardless of amplitude modulation (AM), frequency modulation (FM), or phase modulation (PM) are an integral part of electromagnetic radiations in the process of extension in space (with descending

frequency and loss of energy) and expansion in time (with ascending wavelength and lengthening of the wave) and as such they push from inside out to materialize afterwards in our fully expanded dimension in the radiative(linear) field as well as in the creative (nonlinear) field, ④ the frequency carrier (figure 2a) if it is not imprinted by an electromagnetic signal it remains in its pristine form and in such a form manifests itself undetected in the linear field, ⑤ the channels or energy levels from within to the basic (central) frequency become asymptotically small (smaller and smaller), those outside the basic (central) frequency become asymptotically large (larger and larger), and ⑥ the channels or energy levels are always, in whatever moment, out of phase one another; the oscillating frequency per second represents a space all by itself, and the wavelength represents the proper-time of that space. This state of things is generated by the extending and/or expanding nature of the process of creation.

I wanted to put in evidence this particular aspect of radiotechnology to demonstrate one more time that the universe possesses two *modus operandi*: one radiative and linear and the other creative and nonlinear. Once we have digested this concept, once we came out of the uncertainty and the vague, given up the indetermination and all the rest, the unification of the four interactive forces of nature becomes *a fait accompli*. To get there, we must only put time and space into nature: their true habitat.

To show the difference between gravitation and the radiative field of Maxwell, I have sketched a sphere-like figure. To enrich our mental picture, I would now like to show this difference with a cone-like figure.

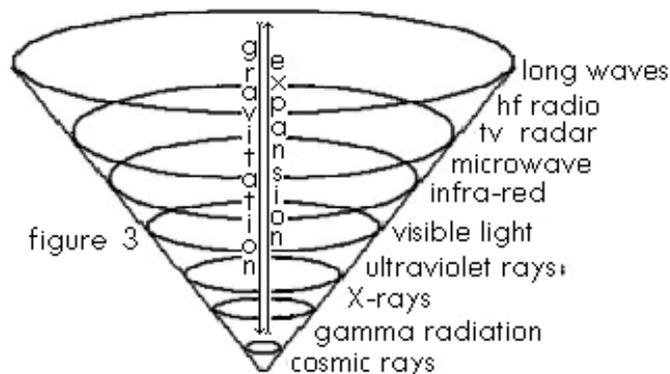


Figure 3 represents the electromagnetic spectrum that in its nonlinear conformation incorporates the full scale of electromagnetic radiations, while its linear aspect shows, once again, Maxwell's radiative field along which we note that the waves have the same frequency and the same wavelength and this qualifies all possible channels as frequency carriers for telecommunications to play host to any electromagnetic signal.

Further, if we put the cone upright as seen in figure 3 and identify it with the electromagnetic spectrum, we can easily imagine all radiations running orthogonal to it. From cosmic rays at the bottom, to visible light confined half way through, to long waves. All radiations have the same speed of the spectrum, they all have a frequency range belonging to the spectrum, they all have an inner structure coming from a transverse section of the spectrum. In addition, I point out that the full range of the above frequencies, hence the full range of wavelengths are what in all my work I called *time and/or space sub-dimensions* nowadays spoken of and unconsciously acknowledged by science as additional space dimensions which could be: 5, 11, 23, or any given number to satisfy the manipulator. In addition to it, if one follows the *Panorama of the strings theory* could have up to ten thousand space dimensions. To be noted that scientists et al by

additional space dimensions intend to say and accept something like our own fully expanded time dimension populated by living beings with all their appurtenances, nothing less.

Conversely, the time sub-dimensions as intended in my work are what science calls microworld which is wholly populated by electromagnetic radiations, from cosmic rays to microwaves. The filaments of these electromagnetic radiations have the task to physically create: ① time and/or space, all lengths of time and/or space, ② surface in the fully expanded dimension (our world) with a 1-millimetre wavelength (microwaves) and, ③ at the end of the process manifest themselves as an adynamic magnetic undulated line to contribute to the expansion of the universe.

### *Conclusion*

I shall now conclude by saying that the gravitational field is a non-linear field in the same way that the expanding gradation scale of the electromagnetic spectrum is. In the expanding and/or extending process the wave becomes asymptotically long (longer and longer) up to the full length of the gradation scale which is  $3 \times 10^8$  metres per second. With gravitation the wave becomes asymptotically short (shorter and shorter) as it approaches the gravitating body. In both cases, however, we are circumscribing all electromagnetic radiations from cosmic rays to brain waves. All this finds no term of comparison to any given energy expanding and/or extending level of the microworld since each one of them is separated from the one that comes before and/or after by Planck's distance. In the gravitation field happens the same thing: any given point-like in free (optical) space is not equal to any other point-like found at a distance "x" from the first. The radiative field of James Clerk Maxwell is altogether another thing. By giving a second look at figure 3, we can easily see that all types of radiation possess their own frequency used by the electromagnetic signal which propagates itself orthogonal to the expansion and/or extension of the wave hence orthogonal to gravitation as well. I shall also add that in the linear field any given point-like in the microworld and/or macroworld is equal and it has the same characteristics of any other point-like found at a distance "x" from the first.

With reference to my argument on the wave propagation, I have clearly sustained in another forum that it is the electromagnetic signal that travels with direction in space and not the wave. Equally, the electromagnetic signal or any disturbance of electromagnetic nature it is not something superimposed over the frequency carrier, but it must be presented as something that shapes or imprints the frequency carrier. If I strike a match and keep it alight for a fraction of a second, I have burned a thousand or so waves leaving an imprint in the electromagnetic network which will continue its run at the speed of 300 million metres per second in the *space-world*, while the burned waves brake off from the electromagnetic network, writhe, curl, wrinkle and fall in the *time-world* as a mass-carrying particle.

With reference to the title of my essay, I would like to make a personal consideration: am I justified to use, as I am doing, the term *unified*? I think so since the verb to unify means *to make or become one*. The linear field and the nonlinear field co-exist and together represent that unity which we call universe, because it is clear that one could not exist without the other.

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30<sup>th</sup> of April 2018

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## The Magnetic Manifold

### *Foreword*

The following three fundamental axioms are the foundation pillars upon which the proposition herein put forward rests.

- I. Time and space are physically created by an electromagnetic process of temporal expansion and/or spatial extension to be identified with the existing electromagnetic spectrum.
- II. Time and space have their origin in each and every electromagnetic pointlike point-source in free (optical) space as well as in matter.
- III. Given (I) and (II), it follows that the speed at which time and space are created: (a) is the upper limit and dictates the physical laws in the world we live in (fully expanded time dimension), and (b) it is a function of linear and nonlinear motion in free (optical) space.

In particular, axiom (II) implies that space is permeated by an all-pervasive and permanent substance which I shall herein label *time-fabric*, meaning to say: a permanent non-zero source of energy. From this we may deduce that space is filled by pointlike point-sources which are magnetized by the finite and uniform speed of the expansion and/or extension. These point-sources during their decaying process form all lengths of time and all lengths of space. These lengths are the effective volume containing energy. The entire free (optical) space is, therefore, a universal unsaturated sink with continuous absorption because of the finite and uniform speed of expansion and/or extension.

### *Introduction*

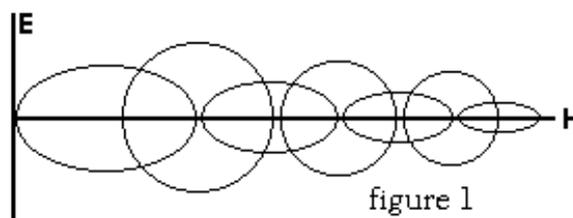
Throughout my work, I have always asserted that the creation of time and space is caused by a magnetic monopole, generated in turn by the uniform and finite speed of the expansion of the universe. It is indeed the uniform and finite speed of the expansion that causes each and every infinitely small pointlike point-source in free (optical) space to magnetize and to initialize the interaction of electric and magnetic forces and fields. These magnetized points give origin to electromagnetic pointlike point-sources which during their decaying process (one second) generate wavelengths in-between the crests of adjacent waves. These lengths become asymptotically long (longer and longer) as the vibrations of the waves lessen and when the vibrations die out mother nature has completed a wholly expanded length of time and/or space. This implies that the only two components of the wave; that is, electric and magnetic forces and fields obey a uniform and progressive variation all along the expanding and/or extending process. The waves, as a given fact, must have a different physical structure at any given energy step of the expansion and/or extension.

My assertion is supported by the very weak electric component we observe at the beginning of the process (high frequency oscillations) and by the tiny, almost non-existent, magnetic component we observe at the opposite end (low frequency oscillations). The magnetic component

would, therefore, lose its strength, as the oscillating frequency becomes lower. When the frequency becomes very low; that is, the cycles are fewer for each second of time; the electric component becomes the stronger of the two and in the frequencies of 50, 60 cycles takes control. From this steady loss of magnetic strength, one may conclude that the finite speed of 299 million 792 thousand 458 cycles and/or metres per second is due to the inability, at the end of the run, of the already very weak magnetic component to generate by induction a further electric component.

*Argument*

I wanted to recall here a geometrical representation to show first of all the field vector phasors **E** and **H** which are respectively the wave’s electric and magnetic components, and then to put in evidence that magnetic fields have no spherical symmetry. As we can well see from figure 1, there is an expanding and/or extending process initialized and terminated by the same magnetic component. This state of affairs is confirmed by the magnetic nature of the world we live in. Here I could and will say: if the electric component were primary, as our physical laws demand, the universe would have to have an electric nature; in which case I would not have been here, in this ball of fire, to profess my reasoning and you would not have been here either to contest it.



With the intent to highlight the time-dependence hence the different physical structure of the wave all along the expanding and/or extending process, I shall now review the permeability of the medium in the general context of magnetism. Given that, for free (optical) space  $K = \mu/\mu_0$  and that the constant for air has a value very close to 1; for our purpose I shall weigh the permeability of air as a medium to be identical to the permeability of a vacuum. The following relation will be now investigated:

$$\mu_0 = \frac{1}{(\epsilon_0 c^2)} = 4\pi \times 10^{-7} \text{ N. A}^{-2} \quad \dots 1$$

here  $\epsilon_0$  (epsilon<sub>zero</sub>) is the permittivity of an electric field and “c” the speed of light. The unit of force [the Newton (N)] is expressed in kilograms metre/second per second; while the speed of light, is expressed in metre per second. Because of this, the permeability  $\mu_0$  (mu<sub>zero</sub>) is defined to be equal to  $4\pi \times 10^{-7}$  [equation (1)].

Here, let me say at once that the laws of physics are, of necessity, portraying the performance of the electromagnetic wave at low oscillating frequencies. It should be clear that experiments in this field were conducted with compass needles and electricity (direct current); first by the Danish physicist Hans Örsted and then by the French physicist André Ampère. Consequently, the mathematics and the physical structure related to the electromagnetic field were, and still are, built out of the knowledge acquired from experimenting with one end, and one end only, of the electromagnetic spectrum. This is somewhat different from electric forces and fields and magnetic forces and fields that we encounter in all types of electromagnetic radiations.

Moreover, the starting point of Maxwell was his conviction that electric influences propagate at the speed of light. From this assumption, and the subsequent generalization of the electro-

magnetic theory of light, it can be easily deduced that the physical transformations, from electric and magnetic forces of our world (fully expanded time dimension) to electromagnetic radiation (time sub-dimensions) where there flows no conduction current and where the permittivity  $\epsilon$ , the permeability  $\mu$ , and the conductivity  $\sigma$  depend entirely on the length of time; were not and are not giving us a true picture of the strength of electric and magnetic forces and fields all along the electromagnetic spectrum in the electromagnetic theory of the wave. In passing, I recall to mind that the parameters  $\epsilon$ ,  $\mu$ , and  $\sigma$  are subject to the temporal and spatial coordinates while their intrinsic value is entirely dependent upon the unit measure of time; the smaller this unit is, the stronger per unit volume the magnetic component has to be.

In order not to lose my way, acknowledgment is here made of the existing constant of proportionality  $\mu/2\pi$  defined to be  $2 \times 10^{-7} \text{ N} \cdot \text{A}^{-2}$ ; and also of the same as a chosen unit for current which; like mass, time, and length, is a fundamental quantity of physics. Apart from the above, I will now proceed to show that equation (1) is applicable to one end, and one end only, of the electromagnetic spectrum. By looking at (1), one cannot fail to see that if instead of the speed of light, with its linear concept expressed in metres/sec per second; we use the speed of time, with its spherical concept expressed in cycles/sec per metre; in order to suit the units of measurement, namely: the Newton; we must express the said speed in kilocycles per second per metre which makes  $c^2$  in (1) read (as it should)  $3 \times 10^5$  squared instead of  $3 \times 10^8$  squared. This not only gives us a stronger magnetic force which seems to exist in nature; but, gives us also a better proportionate  $\mu_0 = 4\pi \times 10^{-1}$ . After due substitutions, we have:

$$\left. \begin{aligned} \mu_0 &= \frac{1}{(4\pi \cdot 8.854 \times 10^{-12}) \cdot 9 \times 10^{10}} \\ &= 1/10 \\ &= 0.1 \end{aligned} \right\} \dots 2$$

While I acknowledge that electric and magnetic forces are inseparable and that I have coupled the  $4\pi$  factor to the electric permittivity  $\epsilon_0$ , I point out that by setting in quantitative agreement the members in (1), as shown in (2), allows me to assess the existing magnetic permeability at the source; that is to say, the permeability in the frequencies of gamma and cosmic rays band. I shall henceforth introduce a newcomer and solve for the speed of time:

$$\left. \begin{aligned} \Psi_{\text{time}} &= 1/\sqrt{\epsilon_0 \mu_0} \\ &= 1/\sqrt{8.854 \times 10^{-12} \cdot 4\pi \times 10^{-1}} \\ &= 1/\sqrt{1.11 \times 10^{-11}} \\ &= 1/0.3335 \times 10^{-5} \\ &= 3 \times 10^5 \\ &= 300000 \text{ kilocycles sec}^{-1} \text{ m}^{-2} \end{aligned} \right\} \dots 3$$

Here, as a historical reminder, I must emphasize that, back in 1785, not the linear speed of light, but rather the expanding speed of the electromagnetic wave was the medium in Coulomb's experiment and this speed is expressed in cycles per second per metre, or Hertz. More important, by looking at the mathematical link in (3); I am at once reassured of having satisfied the dimensional quantities of all terms of the equation. The speed of light with its physical dimension kilocycles per second per metre conforms to both  $\epsilon_0$  expressed in Coulomb<sup>2</sup> Newton<sup>-1</sup>

(kilogram metre/sec per second) and metre<sup>-2</sup> and  $\mu_0$  expressed in Newton (kilogram metre/sec per second) and Ampère<sup>-2</sup>; while at the same time it is in keeping with the metre-kilogram-second system (MKS) and the *Système International d'Unités* (SI).

Notwithstanding the aforesaid, I am faced with a rather discordant state of affairs. I must now back-pedal to reconsider anew the permittivity of an electric field and the permeability of a magnetic field. The art of reasoning, or logic is urging me to take a second glance at equation (3) and remove the  $4\pi$  factor from the magnetic component where it has no business (magnetic forces do not have a spherical symmetry). While the same logic suggests that I should combine the said  $4\pi$  factor with electromagnetic radiation where it belongs and where the spherical symmetry is beyond dispute. I have now the privilege of really presenting another newcomer and solve for the speed of time under a proper set of rules:

$$\begin{aligned}
 \Psi_{\text{time}} &= 1/\sqrt{4\pi(\epsilon_0\mu_0)} \\
 &= 1/\sqrt{4\pi(8,854 \times 10^{-12} \cdot 1 \times 10^{-1})} \\
 &= 1/\sqrt{4\pi(8,854 \times 10^{-13})} \\
 &= 1/\sqrt{1,11 \times 10^{-11}} \\
 &= 1/0,3335 \times 10^{-5} \\
 &= 3 \times 10^5 \\
 &= 300000 \text{ kilocycles sec}^{-1} \text{ m}^{-2}
 \end{aligned}
 \quad \left. \vphantom{\begin{aligned} \Psi_{\text{time}} &= 1/\sqrt{4\pi(\epsilon_0\mu_0)} \\ &= 1/\sqrt{4\pi(8,854 \times 10^{-12} \cdot 1 \times 10^{-1})} \\ &= 1/\sqrt{4\pi(8,854 \times 10^{-13})} \\ &= 1/\sqrt{1,11 \times 10^{-11}} \\ &= 1/0,3335 \times 10^{-5} \\ &= 3 \times 10^5 \\ &= 300000 \text{ kilocycles sec}^{-1} \text{ m}^{-2} \end{aligned}} \right\} \dots 4$$

Here it is, this is the speed of the electromagnetic wave, and I take notice that the speed of light being an electromagnetic phenomenon possesses the same transverse physical quality and therefore the same speed of the expanding electromagnetic wave. I also point out that I have removed 6 quantities in scientific notation, from the said permeability, because I believe this new value to fit the facts of nature. I am arguing in favour of a stronger magnetic force within the time-fabric whose field's behaviour is electrically neutral; a field where electrically charged particles, due to strong magnetic forces, behave as though they have no charge.

To give my statement life and colour, allow me to say that if we were silly enough to put a finger into an ordinary power point, we would feel a lot of electricity and negligible magnetism. If we open our eyes and make *contact* with the visible spectrum, we will experience equally electric and magnetic forces with the end result that we can endure the situation for quite a few decades. If, on the other hand, we find ourselves in the line of fire of x-rays radiation, we are subject to strong magnetic forces and negligible electric forces; and even though we do not feel the consequences, we are, if I am allowed the crude expression, cooking ourselves. In all three instances we dealt with the electromagnetic wave oscillating respectively at 50/60 cycles per second, 4000 million cycles per second, and 700 thousand million million cycles per second.

As I just pointed out, there is a definite quantitative distribution of electric and magnetic forces all along the electromagnetic spectrum with which Science represents the entire scale of electromagnetic radiations. This distribution, needed for the expanding and/or extending electromagnetic process for the creation of time and/or space, is dictated by the proportionally expended energy of the wave throughout its very short life span from the beginning to the end of the electromagnetic spectrum. The higher the frequency, the stronger the magnetic component must be to supply the necessary energy to expand and/or extend the wavelengths of a given level to a lower level of energy (longer wavelengths) all along the spectrum. The neutral electromagnetic

field, as I have just shown, becomes neutral *par excellence* in the visible spectrum where electric and magnetic forces and electric and magnetic forces and fields reach their maximum equilibrium and where life itself or living substance in all its forms discovered, by the very simple evolutive process of trial and error, a safe and harmless window through which it moved from darkness into glory.

### *Conclusion*

To make a huge mistake such as the one confusing electric forces and fields with magnetic forces and fields is clearly telling us that the scientist who first made the law in question did not have the faintest idea of how was made a possible physical structure of free (optical) space, and by logical extension: he has never considered *time* as a possible candidate to one similar physical structure. A convincing thought this last one, if one thinks that time as a finite product of nature would eliminate all Relativity's paradoxes. Persisting with the mistake using the method that modern technology calls "copy and paste" is simply diabolic.

The evolutive process of Man and his ideas, in my opinion, should be and it is a continuous succession of scientific truths each of which with the passing of the years will be falsified and as such substituted by another put in being which in turn will also, with the passing of the years, be falsified.

As a concluding note for the closing, I would now like to say that the human race evolved in a temporal world where the unit measure of time is fully expanded. In this world, I have had the privilege to cast aside the shadow of doubt and I have been able to discover and understand some secrets of the universe. After many years of enjoyable and labourious scientific research, I have come to realize that our world is not the world of a meson, the world of a meson is not the world of a proton and the world of a proton is not the world of a quark. Yes, certainly! We all are sharing the same roof and we all are occupying different temporal universes. Whenever I go down to entertain myself with these universes, however, unlike some modern visionaries, I do not look for men and machines because I see already, along the descent, only wavelengths ever so shorter and only particles ever so heavier and ever so faster.

More important still, I do not cut some sub-dimensions to paste them in the mists of time and thereafter stick-on them my personal label. I cannot and I do not want to do it. I know very well the microworld and I also know that it is pervaded by a binding energy indestructible, indivisible, lethal. If one goes upwards, side by side with the expansion, as any particle of that world can confirm, he will die by annihilation. If on the contrary one goes downwards, side by side with gravitation, as common sense would suggest, he will die by asphyxia.

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