

UNIFIED THEORY: Alternative to Mainstream Physics, Cosmology & More

Rati Ram Sharma, Retired Professor & Head, Department of Biophysics & Nuclear Medicine, Postgraduate Institute of Medical Education & Research, Chandigarh, India; Residence: # 615, Sector 10, Panchkula-134113, India; Phone: 0091-172-2563949; rjss615@gmail.com ; http://www.geocities.com/drratiram_sharma/ ; <http://www.sharma-upt.com> ; <http://www.worldnpa.org/php/DatabaseMenu.php?tab=1&memberid=664>

Abstract: The prime Basic Substance composes all and is universally one. Unified Theory (UT) as the complete paradigm weaves the grandest ever unification of realistic concepts arising from the all-composing & all-pervading light propagating ‘Sharmon Medium’ as the *Basic Substance*, composed by new particle ‘Sharmon’, which comprises a positive *positrino* & a negative *negatrino*, the two non-composite elements named *cosmino* for composing all forms of mass, energy, material particles and energy quanta in the Cosmos.

Relativity and Quantum Theory stand apart because the authors of both were admittedly unclear about the intrinsic wave-quantum UNITY of light. The electromagnetic wave energy quantum, after emission from the source is initially received by a sharmon in the medium, marking the effective ‘*origin*’ of the wave. And the last 1-spin sharmon of the medium, which finally transfers the wave energy quantum to the target and returns to the 0-spin state, marks the ‘*terminus*’ of the wave. From origin to the terminus, the 0-spin sharmon-packet energy quantum per unit frequency cycle is propagated, as a wave-quantum UNITY, along a transverse electromagnetic wave in the sharmon medium contiguously via 1-spin sharmons, which do not physically move. Since the spin of an emitter or an absorber does not change what is emitted or absorbed is NOT the 1-spin photon as a whole but only its energy comprising 0-spin sharmons. The 1-spin photon as such is not emitted, propagated or absorbed. Energized 1-spin sharmon replaces photon.

Due to creative origin in the medium the light velocity c is independent of the source motion and destructive termination makes c independent of the observer motion. The constancy and invariance to source-observer motion of $c [= (e_0, \mu_0)^{-1/2}]$ also follow from the fact that the e_0 & μ_0 of the sharmon medium are constant and not affected by the motion of the source or observer. This also explains the Sagnac effect.

Lorentz arrived at his formulae to explain Michelson-Morley experiments’ null results and also to save the ether. Einstein discarded the ether but derived the same formulae. Unified theory explains the MMX null results from the light-propagating sharmon medium and rejects Lorentz formulae as not describing any real natural motion, thereby unnecessary the works of both Lorentz and Einstein.

Heisenberg invented mathematical Quantum Theory (QT) to circumvent visualization and language-inadequacy for Wave-Quantum Unity of light but used it to validate violations of the inviolable conservations of mass-energy & momentum under the Uncertainty Principle. The UT rejects the Uncertainty Principle as unrealistic and proposes the new Principle of Null Action with universal applications. Quantum Theory’s Copenhagen interpretation is reappraised.

The atoms & molecules never make mistake in their chemical & physical properties and in recognizing, or in being recognized by, others due to their ‘*intelligence*’. The positive molecular recognition is mediated via exchange of the ‘sharmon-composed’ energy quantum uniquely characteristic of the ‘chemical specificity’ of the recognizer-recognizee pair. Thus, sharmon emerges as the quantum of *intelligence/consciousness*.

During the homoeopathic dynamic potentization the chemical specificity of the solute drug molecule is induced in the diluent molecules via resonant promotion of the lone-pair electrons of the Oxygen atom in the –OH groups to make the diluent medium as the

therapeutic agent for drug action. This creates plenty of medicinally active diluent molecules, in the high potencies (dilutions) having no molecule of the original drug in the patient dose, to remove the perennial conceptual impasse created by Avogadro's law and the Law of Mass Action. Results of controlled drug trials on rats, mice and human patients are presented to support these conclusions. Mechanism of homoeodrug action on the Law of Similars is explained. World Health Organization's definition & scope of achievable health are improved. Since the modes & planes of action are complementary Homoeopathy, Allopathy & Yoga are judiciously combined under '*Navayurveda*' that has cured cases, which for Scientific Medicine are: a) incurable/fatal, b) difficult-to-cure even with long medication, c) require surgery, d) viral.

Hithertofore Science & Philosophy have remained mutually exclusive domains of knowledge. Unified Theory presents a Science-Philosophy Symbiosis from sharmon medium as the *prime basic substance* to unify the living and the non-living as also the mind and matter. Entire basic substance of the Cosmos is eternally conserved as the ever existing Megovum, which as also the 'intelligently conscious' Megamind manages the entire Cosmos.

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1. **The all-composing & all-pervading Sharmon Medium as the 'basic substance'**

The all-composing primal Basic Substance is universally one, manifesting as multitude of varied phenomena. Befittingly the Unified Theory as a complete Paradigm is a comprehensive theory of realistic, true science with universal applications. The most significant novel feature of the Unified Theory that distinguishes it from all other present and past theories of science is the all-composing and all-pervading irremovable physical medium in space, the '**sharmon medium**' composed by the new particle '**Sharmon**' as the '**Basic Substance**' which also propagates the electromagnetic and gravitational radiations as wave-particle UNITY. The sharmon comprises a positive **positrino** and a negative **negatrino**, the two non-composite *elementary* '**cosminos**' composing all forms of mass and energy and particles of matter and energy quanta in the Cosmos [1, 2]. This and other four papers [2-5] present the salient features of the vastest ever scope of Unified Theory as a complete paradigm. For details see ref. [1].

Right up to the early twentieth century it was generally believed that matter and energy are entirely different and distinct entities, governed by two different conservation laws. In 1905 Einstein gave the thought provoking equation $E = mc^2$, c being the velocity of light. It described and predicted the inter-conversion of energy E and mass m . Unified Theory re-derives it in sec. 2.4.13 of the 2008-eBook [1] and in sec. 4.11 of ref. [3]. It explains the observations on the creation of the pair (e^-e^+) of the material particles, electron e^- and positron e^+ , from, and their co-annihilation into, the photon(s) of light energy. For the transient "*creation*" of some Quarks & Leptons during the proton-antiproton collisions [6, 7] the electric charge is conserved and the energy-mass satisfy the equation $E=mc^2$. *All this supports the existence in Nature of a **Basic Substance**, which composes all forms of energy E and mass m and it itself is composed by the non-composite basic elements.* In our Unified Theory [1, 2], the transiently created Quarks and Leptons [6, 7] are composed by and are assembled from the elementary *cosminos*, which also compose the energies of the colliding particles. The Quarks and Leptons of Modern Standard Model, being compressible and assembleable, are not the *noncomposite basic elements*. In fact, none of the over 200 basic particles of the Modern Standard Model satisfies the definition of 'element' that composes others but it itself is noncomposite, like *cosminos*.

For the overall compositional unity the most basic elements must be those, which compose the subtlest physical entity in Nature. The work of Thomas Young and Augustin Fresnel on interference and diffraction of light had established the wave nature of light. James DeMeo's review [8] stresses that Dayton Miller's '*positive*' results yielded more-than-zero light-medium drift as evidence for the existence of a light-propagating medium in space. The compositional unity of energy and mass into a subtler substance needs to be extended to encompass the space-medium since the electromagnetic radiation including light, as a *wave*, is compositionally one with its propagating medium. Analogously the composition of water wave and the pond water on or through which it moves, is the same. It follows that in reality there is an intrinsic unity or continuity in the compositions of all forms of mass, energy, radiation and the space medium, which propagates light. *The real physical medium in space, which propagates light wave, is the subtlest physical entity in Nature and hence is the 'basic substance'* [1, 2].

1.1 *Nature of the basic substance*

Is this space medium continuous or discontinuous i.e. particulate? Actually, ours is the universe with ubiquitous granularity of compositions at all levels. Moreover a continuum, if

existent, would retard, nay prevent the motion of mass bodies and even of photons to propagate light through it, which has never been actually observed. According to Unified Theory [1] and the common sense, the new space medium also is composed by a new particle, say **sharmon**, named after this author. It indicates that the '*sharmon medium*' is not the old classical ether, which for Huygens wave theory of light had to be 'extremely more rigid than air' as it has to propagate light (wrongly assumed as longitudinal elastic wave like sound) much faster than sound. The sharmon medium is also different from the numerous multi-dimensional *spacetime continua* and Quantum Theory's *physical vacuum*, which in a way have already replaced the old ether. No stretch of any concept can bring the old ether or any of its later replacements any where near the all-composing & all-pervading sharmon medium as the Basic Substance. Therefore the 1990-book [1] started afresh with a new distinguishing name, **sharmon medium**. The globally reported PTI interview of 4 Nov'90 had it. Later 4 books [1] carry it and Google search has created numerous references to it. Its long, wide usage justifies continuity of the distinguishing name **sharmon medium**.

1.2 The '*sharmon medium*' in space is real

The work of Thomas Young and Augustin Fresnel on the interference and diffraction of light and that of Dayton Miller [8] on the measurement of light-medium drift had established the wave nature of light needing a light medium, the Sharmon Medium in space.

The absence of free electric charge in free space demands sharmon to be neutral. Ability of sharmon medium to propagate transverse electromagnetic waves suggests sharmon's polarizability and hence composition from two sub-particles: electrically positive (+ve) **positrino** and negative (-ve) **negatrino**. The positrino and negatrino thus emerge as the most basic non-composite '*elements*' composing all forms of energy & mass, quarks & leptons and material particles & energy-quanta like photon in the Cosmos, hence given the common name **cosmino**.

To fix ideas, the cosmino diameter $2r$ is somewhat arbitrarily (this arbitrariness is removed below) equated to Planck length $l_p = 1.61567 \times 10^{-33}$ cm. For cosminos, holds the dynamic Principle of "*equivalence or equipartition of basic charge energies*". This is supported by unification of the two basic charges, since the cosmino charges cause, carry, feel & propagate the two basic fields in the sharmon medium. Negatrino's gravitational mass energy $m_n c^2$ equals the electric charge energy q_n^2/r , m_n being the mass and $-q_n$ the electric charge of a negatrino.

The electron (mass $m_e = 9.109389 \times 10^{-28}$ gm, electric charge $e = -4.806532 \times 10^{-10}$ esu) is composed by, say n_1 negatrinis and n_2 sharmons (mass $m_s = 2m_n$); $e = n_1 q_n$, $m_e = n_1 m_n + n_2 m_s$. Experimental gyromagnetic ratio $g_e = -2.0023193$ for free electron and $-2 + (-11 \times 10^{-11})$ for its 10^{-20} cm Dehmelt core [9]. Its dynamic mass-to-charge ratio $(m/q)_e = (m_e/e + m_n/q_n)/2 = 2/g_e \cdot m_e/e$ is the mean of the values at centre (m_e/e) and periphery (m_n/q_n) as against $-1.0 m_e/e$ for the non-composite point electron of Dirac QED [10]. Hence, $q_n = rc^2(4/g_e - 1) \cdot m_e/e = 1.3729 \times 10^{-30}$ esu; $m_n = q_n^2/rc^2 = 2.596116 \times 10^{-48}$ gm, $n_1 = e/q_n = 3.50 \times 10^{20}$, $n_2 = (m_e/m_n - n_1) / 2 = 3.944 \times 10^{17}$ [9]. The positrino has the same mass as negatrino but its charge is equal and positive. The mass density of the primal matter (cosminos) is 1.1756×10^{51} gm/cm³. Both cosminos have a spin $\frac{1}{2}$.

The sharmon, comprising a positrino and a negatrino, has the mass $m_s = 2m_n = 5.192232 \times 10^{-48}$ gm. This derivation supports and is supported by the alternative derivation in the 1990-Book [1] from the longest wavelength of electromagnetic (e.m.) radiation. Since sharmon is the basic quantum of energy and photon is an energized 1-spin sharmon, the minimal energy photon is equivalent to $2m_s$ and the minimal wave-energy equals m_s , which corresponds to the longest e.m. wavelength $\lambda = h/m_s c = 4.25 \times 10^{10}$ cm or 4.25 hundred thousand (lac) Kilometers. And actually observed [11] electromagnetic spectrum is also found to extend up to few hundred thousand kilometers in wavelength. This strengthens the validity of the Unified Theory's above dynamic principle: $m_n c^2 = q^2/r$. If we take the cosmino mass $m_n = m_s/2 = h/2\lambda c$ as computed from the electromagnetic wavelength 4.25×10^{10} cm [1] we can deduce, NOT arbitrarily assume, that $2r \sim l_p$, as above. The energized 1-spin sharmon replaces the conventional 1-spin 'photon'. The

oppositely charged cosminos in the sharmon do not co-annihilate, unlike the cosmino-composed electron-positron pair, because cosminos themselves are the non-composite micromost elements.

The constituent cosminos of the sharmon not only spin but also can vibrate along the common axis, imparting an electric as well as a magnetic field and dipole moment to the sharmon. The electromagnetic properties of the sharmon generate those of the material particles, photon and of the sharmon medium, which they compose. Both the scalar 0-spin sharmon and the vector 1-spin sharmon are stable dynamic structures and can inter-convert.

Bosonic condensation of sharmons is supported by close distance gravitational and electric attractions among constituent cosminos and imparts gregarious properties to sharmons, which can aggregate to compose energy, energy quanta and neutral mass of material particles. Electrically positive or negative charged mass of the charged particles is composed by the +ve or -ve cosminos. No particle or energy quantum is therefore massless, dimensionless or "virtual" (i.e. unreal). Neutrinos, antineutrinos, photon, graviton &c have more than zero definite mass & size.

At the time averaged inter-sharmon distance a_s the number of sharmons along 1 cm length is $(1+1/a_s)$, and in a 1 cm cube it is $n_s = (1+1/a_s)^3$ or $n_s \sim a_s^{-3}$ [9]. The a_s equals the $\lambda / 4$ for the shortest electromagnetic wavelength λ , because then the neighbouring sharmons have $\lambda/4$ phase difference. The particle aspect of electromagnetic radiation manifests up to $\sim 7000 \text{ \AA}$ in photochemical effects and up to $\sim 3000 \text{ \AA}$ in photoelectric effects. Their lower double mean $(3+(3+7)/2)/2 \times 1000$ or 4000 \AA is the shortest wavelength in this context. It gives $a_s \sim 10^{-5} \text{ cm}$. The time-averaged inter-sharmon distance $\sim 10^{-5} \text{ cm}$ compares with the Mean Free Path for the real gasses (e.g. for Hydrogen $1.12 \times 10^{-5} \text{ cm}$, Oxygen $0.64 \times 10^{-5} \text{ cm}$, Nitrogen $0.595 \times 10^{-5} \text{ cm}$). Therefore sharmon medium is a kinetic gas with its **number density** $n_s \sim 10^{15}$ sharmons per cm^3 [9]. With sharmon mass $5.192 \times 10^{-48} \text{ gm}$, the average mass density of sharmon medium becomes $d_s = 0.519 \times 10^{-33} \text{ gm.cm}^{-3}$, which can be compared with $3 \times 10^{-31} \text{ gm.cm}^{-3}$ for the Steady State Cosmology and $1.293 \times 10^{-3} \text{ gm cm}^{-3}$ for air. The rigidity or shear elasticity of the sharmon medium is $4.6875 \times 10^{-12} \text{ dyne/cm}^2$ and the viscosity is $6.5 \times 10^{-23} \text{ dyne.sec/cm}^2$.

The $\sim 10^{-33} \text{ cm}$ sharmon can pass through orbital electrons and inter atomic spaces, rendering the sharmon medium irremovable from closed spaces or vessels. Due to its nature as a kinetic gas, the sharmon medium approximates as a 'kinetic continuum' effectively obliterating the interstices between sharmons in fleeting contact. It fills all space and rules out the existence of absolute vacuum for any significant period of time.

1.3 The Basic charges

The mainstream Standard Model has four basic charges: gravitational (mass), electric (+ve, -ve), weak and colour [(R, B, G); anticoulour (R \wedge , B \wedge , G \wedge)].

The Unified Physical Theory [1] does not take weak as a basic cosmino charge since it does not conserve. It [1] discards the colour charge too due to non-existence of the quarks. The Unified Theory [1, 2] therefore restricts the number of cosmino charges to only two: *gravitational (mass) and electric (+ve, -ve).*

1.3.1 Explaining negatron decay of neutron without weak charge

The Unified Theory [1] explains the negatron decay of neutron without the weak charge and W^- & Z^0 particles of the Electroweak Theory.

During negatron decay of neutron $n^- \rightarrow p^+ e^- \bar{\nu}$, the slightly negative neutron n^- splits into +ve proton p^+ , -ve negatron (electron) e^- and slightly -ve antineutrino $\bar{\nu}$ at the same space-time point. See sec. 8 of ref. [2] for the electric charges on n^- & $\bar{\nu}$.

The electromagnetic interactions of the imposed magnetic field with the mechanisms of creating three electrically charged particles (p^+ , e^- , $\bar{\nu}$) and with these mutually interacting particles themselves at the moment of beta decay are basic to the inequality in rates of beta emission from the Co-60 atoms for two opposite directions of the imposed magnetic field, as

actually observed by Wu et. al [12]. This is because ν^- has only right handed spin whereas both p^+ and e^- can be right or left handed. This explanation does not need the weak charge or weak force.

The above Unified Theory explanation of the neutron beta decay can be compared and contrasted with the following set of mutually inconsistent and manifestly unrealistic speculations of the electroweak theory. The neutron (udd) comprises one up (u) and two down (d) quarks. One d-quark (mass 0.35 GeV, charge $-1/3 e$) emits a “virtual” boson W^- (mass 78 GeV, charge $-1 e$) and itself becomes a u-quark (mass 0.39 GeV, charge $+2/3 e$) transforming neutron (udd) into proton (uud). The W^- decays at a different space-time point, to emit one electron e^- and an antineutrino $\bar{\nu}^-$. Spontaneous break in the vacuum symmetry creates the W^- *out of nothing*. The mass to W^- is imparted by the Higgs boson, whose mass, nay even the existence is not definite. Heisenberg's objective indeterminism and Uncertainty Principle, which Unified Theory rejects, are invoked to validate the underlying violations of otherwise inviolable conservation of mass and energy, because W^- is outside its mass shell!

Detection of W^\pm and Z^0 particles, not in the beta decays but in particle smashing experiments, has been hailed as a strong (but for Unified Theory the weakest) experimental support to the Electroweak theory. It treats them as “virtual” or unreal, being outside their mass shell and not conserving energy and momentum. But in Unified Theory the assembly of W^+ (3.49×10^{20} positrinos + 2.59×10^{25} 0-spin sharmons), of W^- (3.49×10^{20} negatrininos + 2.59×10^{25} 0-spin sharmons) and of Z^0 (one 1-spin sharmon + 2.99×10^{25} 0-spin sharmons), follows realistically from the totality of cosminos and sharmons generated from the mass and kinetic energy of the colliding particles [1].

1.4 *The idea of separate Higgs boson(s) is unsound*

The concept of Higgs boson(s), which the bare massless elementary particles in modern Physics eat to gain mass, is unintuitive. It is more so since a bare massless electron cannot gain $0.51 \text{ MeV}/c^2$ mass or a bare neutrino the $0.1 \text{ eV}/c^2$ mass by eating an $812\text{-}846 \text{ MeV}/c^2$ or $115 \text{ GeV}/c^2$ Higgs boson. In fact the mass of a particle is its innate property, not acquired by eating Higgs boson. Both massless and mass-generating particles are nonexistent. It is therefore not clear what the wasteful hunts for Higgs boson have so far found or will in future find in its name, say with the Large Hadron Collider.

1.5 *Unification of basic cosmino charges*

In Unified Theory [9] the elementary cosminos have only two charges: gravitational (mass), and electric (+ve, -ve) or in reality only a single unified primal charge, the cosmino itself.

As a matter of fact, an ‘element’, being non-composite and having isotropic and homogenous properties throughout its entire whole has to be singly charged. This is because its multiple charges imply that many sub-constituents as the number of charges. And attraction among different charge species namely mass and electric is anti-intuitive. One can think of chargeless (neutral) mass but not a massless electric charge. Therefore the two basic charges, mass & electric, are two different (gravitational & electric) manifestations of a single primal charge, the *mass-electric charge* or the cosmino itself into which they inseparably unify. The gravitoelectric nature of a cosmino appears as its properties of mass and electric charge. The two manifestations of cosmino mass and electric charge are mediated via the two basic fields, gravitational and electromagnetic, which feel and are felt by the two corresponding basic charges. In fact the two basic fields/forces also unify into a single **gravitoelectromagnetic** field/force.

2. **Various spacetime continua are non-existent**

It can hardly be overemphasized that both space and time are NOT real physical entities having substance but are mere abstract concepts arising from the direct human perceptions. A deep intuition reveals that the concept of space evolves from our direct perceptions of spatial successions "there, here, there" and that of time from those of temporal successions "then, now,

then" all arising from the motions and changes of the surrounding objects. The perception of 'only-forward, never backward', movement of the 'time-arrow' originates from the non-reversibility of the natural processes underlying changes. That is why all the animals always grow (change) from childhood through youth to old age and all the plants from seed through seedlings to trees. The day always changes from morning through noon to evening. And so on & so forth.

If a baby were to grow with no relative motions and changes around i.e. all standing still in the surroundings, he/she would have no successive perceptions and hence no concepts of space and time. The two concepts of space and time, being so intangible and abstract, cannot fuse into any tangible "spacetime continuum", concrete enough to propagate light and gravitational wave/field. So, Unified Theory [1, 3] rejects various multidimensional spacetime continua as mere mathematical constructs without any real physical existence. Predictably the Geneva-based Large Hadron Collider will not find any wrapped up extra dimension of space.

3. Basic forces/fields

The Standard Models of the modern Physics and old UPT have three infinite range forces: gravitational, electromagnetic and colour. The Unified Theory discards the colour force. This leaves only two such forces/fields, namely gravitational and electromagnetic.

These real fields exist within, NOT any spacetime continuum, but within the real physical sharmon medium. The gravitational field is mediated via the mass and the electric field via the electric charge on the cosminos composing the sharmons in the sharmon medium. The magnetic dipole moments associated with the sharmons in the medium are basic to the magnetic field. The electromagnetic field is created and sustained by the changing electric and magnetic dipole moments on the sharmons in the medium.

A field can either be in static or a dynamic state. The force acting between two charge-bodies separated by a distance in the field is essentially an 'effect-at-a-distance' operating within and through the sharmon medium. The primary static gravitational or 'gravitostatic' field, created by the equilibrated distribution of mass bodies in relative rest, is static and hence non-propagating and non-radiating. So are the electrostatic and magnetostatic fields.

A changing field is dynamic. Because it involves transfer or transmission of energy from one part of the field to the other(s), which may interchangeably be predicated as the 'propagation' of the field-energy or of a 'wave' or of a radiation or of the field.

The inseparable unification of the mass and electric charge into a single entity, the cosmino itself [1, 2] ordains unification of the basic fields, gravitational and electromagnetic into a single '*gravitoelectromagnetic*' **primal field**.

3.1 The static fields unified

We can take the Newton's law of Gravitation and the Coulomb laws of electrostatic and magnetostatic fields as particular cases of a general basic law. The force F acting between two primal charges C_1 & C_2 at a distance R can be taken as:

$$F = k C_1.C_2/R^2.$$

The force F is proportional, directly to the product $C_1.C_2$ of the strengths of the two charges and, inversely to the square R^2 of the intervening distance R. The constant of proportionality k is a parameter of the sharmon medium, within and through which the static force F acts. The magnitude of k depends on the nature of the test charges C, the nature of the field and units of measurement. The gravitational constant G, the electric permittivity ϵ_0 and the magnetic permeability μ_0 of the sharmon medium, are particular cases of the constant k.

The gravitostatic, electrostatic and magnetostatic forces obey similar inverse-square laws. All the three have common origins and mediators, the cosminos composing the sharmons of the

sharmon medium; the mass-electric charge of the cosminos feeling and felt by the gravitoelectromagnetic force. Chapter-9 of 2008-eBook [1] unifies fundamental forces & fields.

3.2 The lines of force & basis of the inverse square law

One can visualize the existence of curvilinear lines of force in the 3-dimensional sharmon medium for the gravitational, electric and magnetic fields traced by the intervening sharmons like the iron filings used to map out the lines of force for a magnet. The tangent to the line of force at any point gives the direction of the resultant force.

It can now be seen that the area density of the lines of force on the spherical surface $4\pi R^2$, and hence the intensity of the static field of force (gravitational, electric or magnetic), varies inversely as the square of the distance from the point source as per the Inverse Square Law.

4. The electromagnetic wave in the sharmon medium

Conventionally ‘origin’ of the electromagnetic wave is the source and the target is its ‘terminus’. But actually the wave energy quantum comprising 0-spin sharmons, after emission from an excited electron in an atom of the source, is initially received by the nearest sharmon in the medium. Thus energized sharmon rises to the 1-spin state due to addition of the co-directional $\frac{1}{2}$ -spins of its constituent cosminos, to mark the effective ‘*origin*’ of the electromagnetic wave. Similarly, the last 1-spin sharmon of the medium, which finally transfers the wave energy quantum of the 1-spin photon to the target, is the effective ‘*terminus*’ of the wave. Both ‘origin’ and ‘terminus’ of the electromagnetic wave are situated in the sharmon medium.

From origin to the terminus, the 0-spin sharmon-packet energy quantum per frequency cycle is propagated along a transverse electromagnetic wave in the sharmon medium, as a Wave-Quantum UNITY, contiguously via 1-spin sharmons, which do not physically move but only provide a physical carrier. The 1-spin sharmons, participating in the process of propagation, return to their 0-spin state on transferring the wave energy quantum to the contiguous neighbour in the medium or finally the last 1-spin sharmon transfers its energy to the target before returning to 0-spin state. After emission and before absorption it is always the energized 1-spin sharmon.

The propagation mechanism is essentially electromagnetic. The orthogonal electric & magnetic fields are normal to the direction of propagation as per the Pointing vector and vary at the frequency of the electromagnetic wave.

Since the spin of an emitter does not reduce by 1 or of an absorber increase by 1, what is emitted or absorbed is NOT the 1-spin photon as a whole but only its energy comprising 0-spin sharmons. However, the transmission, always and throughout, is of the energy of the 1-spin photon as a wave-quantum UNITY. The 1-spin photon as such is **not** emitted, propagated or absorbed. The energized 1-spin sharmon therefore replaces the 1-spin photon in Unified Theory.

4.1 The Wave-quantum Unity of Electromagnetic Radiation

The long wave electromagnetic (e.m.) radiation, like the radio waves, is predominantly wavelike and the short waves like X- and gamma rays show corpuscularity. As the transition from one part of the electromagnetic spectrum to the other is continuous, its ‘**wave-quantum unity**’ is inescapable. But no existing theory of Physics, old or current, accepts and addresses this true nature of the physical reality. The Special Relativity and Quantum Theory still stand apart because the authors of both were admittedly unclear about the intrinsic wave-quantum unity of light. Einstein on 12 December 1951 wrote to M. Besson thus: “*All these 50 years of conscious brooding have brought me no nearer to the answer to the question: What are light quanta?*”

Heisenberg argued that wave and particle are mutually too exclusive in properties for visualizing a thing to be both at the same time. Mathematical **Quantum Theory** [13] was therefore invented to circumvent visualization and language inadequacy to describe wave-quantum unity of light and moving material particles. Moreover, it also wrongly split the coexistent intrinsic *wave-quantum unity* of radiation into *wave-or-quantum dualities*. In fact both

radiation and matter have intrinsic **wave-quantum unity** (of Unified Theory), which appears as **wave-or-quantum duality** (of QT) due to experimental limitations to observe only one of the two coexistent characters at a time, not both simultaneously.

Interestingly, both the particle and wave aspects for both low intensity light and stream of electrons have been demonstrated [14] simultaneously in one and the same experiment. This provides experimental support to Unified Theory's **wave-quantum unity**. The time-containing and time-free equations for the *Propagation of Wave-quantum Unity of Electromagnetic Radiation* have been derived [1, 5].

5. Constancy & invariance to source & observer motion of the light velocity

The special relativity [15] was based on these two axiomatic postulates, which Einstein did not explain but are now explained realistically from Unified Theory without validating the theory of Special Relativity (SR). Not only this, Unified Theory [1, 3] explains the actually observed variability of light velocity c , which invalidates both the special and general relativity theories.

As outlined above, light 'wave' begins creatively at the 'origin' and ends vanishingly at the 'terminus', both in the sharmon medium. The particulate photon energy comprising 0-spin sharmon aggregate per unit frequency cycle is carried along the transverse electromagnetic wave from origin to terminus via contiguous mechanisms.

The E.M. wave is created at the 'origin' in the sharmon medium. Due to this creative origin in the medium the light velocity c is independent of the source motion and destructive termination makes c independent of the observer motion. The constancy and invariance to source-observer motion of $c [= (e_0 \cdot \mu_0)^{-1/2}]$ also follow from the fact that the e_0 & μ_0 of the sharmon medium are constant and not affected by the motion of the source or observer.

Nay, even observed variability of c and superluminality (light velocity $> c$), which affect and invalidate the theories of Special & General Relativity, also follow from Unified Theory by affecting the e_0 & μ_0 and refractive index μ_r of the propagating sharmon medium *locally* [1, 3].

5.1 Unreality of the Lorentz transformation formulae

Lorentz [16] arrived at his formulae to save the ether and to explain the null results of Michelson-Morley experiments. Einstein [15] discarded the ether but derived the same formulae. The Unified Theory [1, 3] explains above the results of MM experiments from first principles based on the light propagating Sharmon Medium and rejects the Lorentz formulae as not describing any real natural motion, faulting the work of both Lorentz and Einstein. See below.

The velocity of light c is constant and invariant to source-observer motion but that of a material particle v is not so. Thus the kinematics of a light photon and a material particle are too exclusively different to justify giving the same status to c and v and using them in a formula to describe any real motion. No real natural velocity can vary (as v) with and be invariant (as c) to source-observer motion at the same time. Therefore the Lorentz transformations of Special Relativity [15] do NOT describe any actual motion in the real Nature. Their leading conclusions viz. 'contraction of space' and 'dilatation of time' are the unrealistic demands on Nature to change to fit their mathematics.

Even otherwise, the actual length of an object, viewed by say, 100 differently moving observers cannot undergo 100 different objective contractions at the same time, making the 'contraction of length' an unreal concept. Likewise, 'dilatation of time' too is unrealistic.

The Gravity Probe A launched in 1976 to test relativity's 'time dilatation' has in fact supported Unified Theory [1, 3].

5.2 The Sagnac effect & Unified Theory

In the 1913 Sagnac experiment [20], the platform rotating at 1-2 turns per second included the source of two oppositely moving light beams, an interferometer and a camera to record the interference fringes. A shift of interference fringes was observed every time the

rotation was modified. Sagnac attributed it to the time difference in arrival of the two interfering beams and interpreted the observation to support ether. Selleri [20], while presenting his own explanation, cites Hasselbach & Nicklaus to have listed 20 other explanations for this experiment.

In the light of the Unified Theory's explanation of the Michelson-Morley experiments above the 'origins' of the two oppositely moving light beams are the two first 0-spin sharmons in the sharmon medium which initially receive their respective energy quantum and rise to their 1-spin states. The two 'terminuses' are the last 1-spin sharmons that transfer their energy quanta to the interferometer and assume 0-spin state. Both the beams are propagated from the origin to the terminus as Wave-Quantum Unity at the speed c invariant to the motions of the source and the interferometer. The speed $c = (e_0 \cdot \mu_0)^{-1/2}$ is set only by the electric permittivity e_0 and magnetic permeability μ_0 of the sharmon medium, which are not affected by the motion of the platform.

The time difference for the two interfering beams is $\Delta t = 2\pi r n / c$, where r is radius of the rotating platform and n the rotations per second. Modifying n would shift the fringes, as Sagnac observed, by changing the time difference Δt .

6. Basic flaws in General Relativity

The General Relativity is flawed for using Riemannian differential geometry of a non-existent 4-D 'spacetime' continuum. It as a theory of gravitation and its equivalence of a gravitational field with a uniformly accelerated frame is incomplete since no coordinates' transformations of no non-inertial frame can eliminate the actual centripetal gravitational fields. But the fields to which non-inertial systems are equivalent vanish on transformation to an inertial system.

6.1 The Mach principle, general relativity & Unified Theory

For developing theory of gravitation as the General Theory of Relativity Einstein was greatly influenced by the thinking of German philosopher Ernst Mach who had modified Newton's ideas on gravitation. In the relation $f = m_i a$ for his second law of motion, Sir Isac Newton (1660) had assumed that the inertial mass m_i is an absolute quantity.

Two centuries later Mach argued that the inertia (m_i) of a body is not absolute but depends on, and rather arises from, the matter distribution in the rest of the universe, through gravitational interactions. Mach did not elaborate the mechanism of gravitational interaction at a distance but implied that the galaxies and other bodies in the universe interact with the test body through the intervening space and that in a matter-free universe the body will have zero inertia ($m_i = 0$).

General Theory of Relativity as a theory of gravitation further showed that the test mass (inertial mass $m_i =$ gravitational mass m') also interacts with surrounding space and hence a ray of light follows a curvilinear path in a gravitational field as was later verified by Eddington in 1919. Einstein, like Mach, also did not elaborate the underlying physical mechanisms.

The Unified Theory goes farthest to assert the unity and continuity of the interactions and compositions of all physical bodies with and through the all-composing and all-pervading, omnipresent kinetic sharmon medium. That is, every mass body interacts with the surrounding sharmon medium and through it with all other bodies in the universe. The same micromost basic cosminos that compose the particulate content of the kinetic sharmon medium also compose all forms of energy and mass, and all are in a state of dynamic interaction.

Since both mass and energy have inertia the total inertial mass $m_i = m' = (m + mV/c^2)$ of a body in a gravitational field of potential V has two components: m and mV/c^2 . The matter distribution in the rest of the universe generates the gravitational potential V to determine mV/c^2 . In a matter-free universe ($V=0$), the mV/c^2 component will vanish, leaving m unaffected. For this finer detail, Unified Theory improves upon the Mach principle wherein even m also becomes zero in a matter-free universe.

Formula for the bending of light in a gravitational field through Unified Theory's sharmon medium is the same as in General Relativity [1].

7. The Copenhagen interpretation and Unified Theory

All the unrealistic concepts of Quantum Theory can be attributed to its “Copenhagen Interpretation”, so called as to emphasize the influence of Niels Bohr on the Brussels (1927) conference of physicists. Its major conclusions are:

(i) *Quantum Theory is a complete theory since it works.*

The Unified Theory does not consider this as sufficient argument. The first basic necessity, which Quantum Theory does not fulfill, is realistic nature of the basic concepts. Moreover, the claim that it works is far fetched. It does not explain the wave-quantum unity in radiation and matter, which it was all about. In addition it introduces the violations of otherwise inviolable conservation of energy and momentum under the Uncertainty Principle, vide sec. 8 below. *Therefore in reality the Quantum Theory does NOT work*

(ii) *The Quantum Theory deals in what can be known about, and not in what there actually is in, the micro cosmos.*

Relativity, likewise, is also based on the observed magnitudes of governing parameters. The Unified Theory on the other hand deals in the objectively actual parameters because the real objects and physical reality exist irrespective and independently of the observer. And the physical phenomena are governed by NOT the observed/measured but actual objective parameters.

(iii) *Quantum Theory regards objective reality as a metaphysical speculation out side of Physics, hence does not recognize things as they really are.*

The Unified Theory, in contrast, proposes to develop a “realistic Physics” providing a realistic description of the objective reality as it exists and answers to the various why's and how's. See also para (ii) above.

(iv) *Since tracing of individual atoms and molecules is not feasible, Quantum Theory is contented and concerned with the statistical description of their “group behaviour”.*

The Unified Theory, in addition, goes deeper to their individual properties as well.

(v) *In view of the intimate connection between the statistical character of Quantum Theory and the lack in precision of all perception, it may be suggested that behind the “statistical” universe of perception, there lies hidden a “real world” ruled by causality. But such speculation is useless and meaningless.*

The Unified Theory, in contrast, works on the realistic speculations about objective reality, eliminating the perceptual distortions as far as possible.

(vi) *The wave and particle aspects of both matter and radiation are complementary. The two sets of concepts, though mutually exclusive, are nevertheless necessary for exhaustive description.*

For Unified Theory, the two aspects are not mutually exclusive but coexist blended together in the wave-quantum unity for both radiation and moving material particles.

(vii) For Niels Bohr, *isolated material particles are nothing but abstraction, as their properties can be defined and observed only because of their relations with other systems. Heisenberg saw the world as a complicated “tissue” of reactions, in which the breaking of a single thread affects the structure of all the rest.*

But he did not elucidate its physical bases, like Unified Theory's all composing and all pervading sharmon medium.

Not all physicists participating in the historic Brussels conference agreed with the ‘Copenhagen Interpretation’. For example, Einstein wrote to Max Born about Born's statistical

approach: “*The great initial success of quantum theory cannot convert me to believe in that fundamental game of dice*”. To his friend Dr H. Zangger he wrote even thus: “*The more success the quantum theory has the sillier it looks*”. Schrodinger said: “*Quantum theory, while extending atomism, almost without any limit, has at the same time plunged it into a crisis that is more serious than most people are prepared to admit. On the whole, the present crisis of modern science points to the necessity of revising its foundations from the basic layers up*”.

This is exactly what the Unified Theory does. The Unified Theory disagrees with Quantum Theory on basic issues. The objective reality, which Physics is to describe, is not a metaphysical abstraction but exists whether within or outside the view of an observer i.e. in spite and independently of the observer. The physical objects and their natural phenomena are governed by NOT the observed or knowable, but objectively actual, physical parameters of velocity, energy, momentum, size, distance etc., and these can all be simultaneously defined precisely down to any micro scale. The wave and particle aspects of both matter and radiation are not merely complementary but integral characters existing and moving together.

The Unified Theory regards Quantum Theory as a mathematically sound but unrealistic theory which deals in the observational distortions or uncertainties of the objective reality and does not describe it faithfully or correctly. The wave-or-quantum duality, of radiation and material particles which the Quantum Theory is all about but cannot explain, emerges in Unified Theory as the observational appearance of the basic wave-quantum unity due to experimental limitations to observe only one of the two (not both) characters at a time. This wave-quantum unity for both radiation and matter follows naturally from the Unified Theory.

8. Reappraisal of uncertainty principle

Since Quantum Theory deals in the observables, Heisenberg uncertainty relations: $\Delta E \cdot \Delta t \geq h/2\pi$ and $\Delta p \cdot \Delta x \geq h/2\pi$ were for the *subjective* variations in the ‘observed’ parameters. The confusion arose, which still persists when ΔE , Δt , Δp , Δx were misconstrued to represent variations or spontaneous fluctuations in the *objectively actual* parameters. The confusion got confounded when Heisenberg relations were taken to be more basic than the conservation laws. Violations, within the limits set by them, of otherwise inviolable conservation of energy and momentum, were introduced and validated, which wrongly implied ‘objective indeterminism’.

Relation $\Delta E \cdot \Delta x \geq ch/2\pi$ derived from the Heisenberg relations put into disarray all the classical concepts of location, boundary & trajectory. It also led to the bizarre notion of a micro particle constituted and bound by more massive sub-particles because in confining to small Δx the uncertainty ΔE in energy E exceeds E itself. All these unrealistic conclusions are the unrealistic demands on Nature to change to fit the mathematics of Quantum Theory.

The Unified Theory clarifies that Heisenberg uncertainty relations do not hold for the objectively actual parameters, which in fact govern the physical phenomena consistent with the causality principle or ‘objective determinism’ and conservation laws, on any subatomic micro scale. To score its point over Quantum Theory the Unified Theory herein above explains the ‘wave-quantum unity of electromagnetic radiation’ (unexplained in QT) without the QT’s ‘violations of conservation laws’.

The Unified Theory, while rejecting the Uncertainty Principle, also proposes a new Principle of Null Action with universal applications vide Chapter-16 of 2008-eBook in Ref. [1].

9. Nature of the non-expanding universe

Edwin Hubble was the first to observe in 1920s that the spectral lines in the light from distant galaxies are shifted towards the red end of the visible spectrum with an increment of their wavelength. If λ is the original wavelength and λ' ($>\lambda$) of the same spectral line in the light from the galaxy as received by an observer on earth, the red shift is $Z = (\lambda' - \lambda)/\lambda$. But since λ is connected with frequency ν to the light velocity $c = \lambda \cdot \nu$, we also have the red shift

$$Z = +\Delta\lambda/\lambda = -\Delta v/v.$$

Hubble attributed this red shift to the Doppler effect due to recession of galaxies. But in Unified Theory's [1] non-expanding universe it is caused by the depletion ΔE of spectral photon energy $E=h\nu=hc/\lambda$ during the long passage through the sharmon medium. Therefore

$$Z = +\Delta\lambda/\lambda = -\Delta v/v = -\Delta E/E.$$

The non-Doppler causes for the photon energy depletion during passage through the sharmon medium are gravitational, electromagnetic and viscous losses.

9.1 *Optical Doppler effect in expanding universe*

The Doppler redshift is basic to the theories of expanding universe. The relative motion between the observer and the source of light causes an apparent change in the wavelength, called "Doppler Effect". But the phase remains invariant to the Lorentz transformations. It has been shown in Chapter-14 sec.14.3 of the 2008-eBook ref. [1] that the Doppler red-shift for the recession velocity $V < c$ of the light source is given by

$$Z = (\lambda' - \lambda)/\lambda = \Delta\lambda/\lambda = V/c.$$

9.2 *The Hubble's law for expanding universe*

Edwin Hubble had observed that "*fainter (more distant) the stellar source the more red-shifted light (of lower frequency and higher wavelength) it emits*" or the cosmological red shift Z increases directly with the distance D of the light-emitting galaxy. That is,

$$Z = ((\lambda' - \lambda)/\lambda) \propto D.$$

This with the above equation leads to the Hubble law

$$V = HD$$

wherein V is the velocity of receding galaxy. The Hubble constant $H = V/D$ has the dimension of time inverse ($1/t$) and is a measure of the rate of expansion of the universe V/D . The intervening cosmic dust can scatter away the incoming light from the stellar source to decrease its brightness and make it fainter to appear distant.

9.3 *Crucial experiment to test whether universe is expanding or not*

To test whether the universe is actually expanding, red shifts of individual galaxies need to be monitored. In theories of expanding universe redshift is $Z=V/c$ and Hubble's law $HD=V = dD/dt$, gives $Z/Z_0 = \exp(Ht)$, Z_0 being starting value. So the redshift Z increases exponentially with time. But for a non-expanding universe $Z= KD$, D being constant, redshift Z does not change with time.

That is, the inter-galactic distances, the receding velocities of galaxies and the cosmological red shifts should all increase exponentially with time if the universe is expanding according to the Big Bang or Steady State theory, but should remain unchanged in the non-expanding universe of Unified Theory [1]. However, since $c = \nu\lambda$, the spectral shift $= (+\Delta\lambda)/\lambda = (-\Delta\nu)/\nu$. In other words, the increase in wavelength will be found more marked for long wavelengths (red and infrared) and fall in frequency will be more pronounced at high frequencies (violet, X-rays).

Since the individual red shifts have never been found to increase exponentially with time galaxies are not flying away to generate an expansion of the universe. Actual observations therefore support Unified Theory's non-expanding universe.

In the nonexpanding universe some observations of higher than expected Hubble constants signify only *local effects* in the surrounding light medium due to bursts of sharon showers from the exploding stars and NO *general property* of the whole universe permeating space is implied.

Detailed discussions of the various aspects of the expanding and nonexpanding universe are given in Chapter-14 of the 2008-eBook [1] and in ref. [4].

10. The Unified Theory & Science of Homoeopathy

The Unified Theory can unravel the enigmatic curative action of the high potency homoeomedicines having no molecule of the original drug in the patient dose. For details see ref. [17] and Chapter-17 of 2008-eBook in ref. [1].

10.1 *The problem defined*

According to Avogadro's law a gram-mole (molecular weight in grams) of any substance contains $N = 6.022 \times 10^{23}$ molecules. Therefore all homoeo-potencies equal to or higher than the 12th on the centesimal scale, representing a 10^{24} fold dilution, do not contain any trace molecule of the original drug in the patient dose.

But the Law of Mass Action in Chemistry ordains that the biochemical medicinal effect of any drug is in proportion to its molar concentration, which is zero here. Hence the homoeopotencies of 30c, 200c, 1000c and higher on the centesimal scale, *which are routinely employed in homoeopathic clinical practice*, cannot have any chemical, biochemical or medicinal action to treat diseases of the patients!

10.2 *Controlled treatments of human patients*

But this author has successfully treated a number of such cases which for the Modern Scientific Medicine are: (a) incurable/fatal, (b) difficult-to-cure even with long, some times life long, medication, (c) requiring surgery, (d) viral infections where Allopathy offers nothing, (e) baby/children diseases where placebo does not work. For all these treatments potencies used were 30c & 200c generally and 1M (1000c) occasionally. These personal experiences corroborate the huge mass of similar observations collected by innumerable homoeopaths worldwide during the past over two centuries [17].

10.3 *Controlled animal experiments*

To allay the objections that the action of high potencies with no molecule of the original drug provides artificial sense of relief due to faith in the physician and is speculative, we conducted controlled animal experiments. This is because the animals do not respond to the placebo effects or to expert assurances.

10.4 *Alloxan induced diabetes in rats*

Diabetes mellitus was induced in albino Wistar rats having 180 - 340 gm body weight, 80 - 120 mg/dl blood sugar and zero urine sugar with intra-peritoneal injection of Alloxan after overnight fast. The diabetic rats were divided into four groups of five each for treatment with: (a) 20m millesimal (equivalent to 30c centesimal) potency of Alloxan with 1000^{20} (equivalent to 100^{30}) fold dynamized dilution expressed as a decimal fraction having fifty-nine zeros (0) between decimal point and 1. (b) With 1000^{20} fold undynamized simple dilution of Alloxan, omitting dynamizing agitations of the mixture. (c) Nothing, or 'sham' treatment with ethanol, since the first two dilutions were made in ethanol.

Blood sugar in the rats of group (a), returned from the initial Mean \pm S.D. 308 ± 129 mg/dl (range 179-501 mg/dl) to 90.1 ± 4.0 mg/dl in the normal range of 80-120 mg/dl after 44 days'

treatment. It remained so without any further treatment up to 144 days of observation. In group (c) the Mean \pm S.D. 276 ± 82.2 mg/dl (range 189-389) first rose to 344 ± 65.6 mg/dl, then showed a delayed slight fall but always remained significantly (t - test, $p < 0.001$) above the normal range. The (b) group showed no fall with 1000^{20} fold-undynamized simple dilution of Alloxan from day-7 to 25, or with 20m potency of Streptozotocin (another diabetogen) from day-28 to 55. But the treatment with 20m Alloxan potency from day-58 to 116 showed significant curative fall from 325 ± 148 mg/dl to 176 ± 51 mg/dl [17].

In these experiments, we had knowingly put those diabetic rats in the treatment group (a) whose blood sugar was highest, so as to demonstrate the curative effect of the homoeopotency very strikingly. This, in a way, is an improvement over the Double Blind Drug Trials, wherein random selection is used for forming the various groups.

10.5 DMBA induced toxicity & cancer in mice

The Alloxan is a primary diabetogen since it itself affects the beta cells of the island of Langerhans in the pancreas. Unlike Alloxan, DMBA (7, 12 Dimethyl Benz-Anthracene) is not a primary pathogen since its metabolites, not itself, induce the basic pathology. Its incubate with microsomal enzymes of mouse liver, instead of DMBA itself, was therefore the starting material for preparing the test solutions of 20m potency and 1000^{20} - fold undynamized simple dilution.

The DMBA pathology in Swiss albino mice was induced by subcutaneous injection of 0.75 mg of it. The 50% survival period SP-50 (period for half the mice in the group to die and other half to survive) was 144 days for the group of 20 mice treated with dynamized 20m potency as against 36 days for the 20 mice group treated with undynamized 1000^{20} fold simple dilution. The 10% of mice in the latter group, but none in the former, also developed a fibrosarcoma at the site of DMBA sub-cutaneous injection [17].

11. New scientific phenomenon discovered and Avogadro's law not violated

According to the modern Physics and Chemistry the mechanical processes of forceful agitation, like trituration, stirring or succussion should have no effect on the quality or chemical properties of the solution of a solute in a solvent. That is, the chemical properties of the final solution should remain identically the same whether it is prepared simply by swirling or by using physical agitation at each step of dilution.

These animal experiments, however, establish that the dynamized homoeomedicines do cure even in high potencies when no molecule of the original drug can be present in the dose but undynamized simple dilutions of the same extents have no curative effect.

The inescapable conclusion is therefore thrust on us that the agitating mechanical dynamization processes of forceful triturations in lactose and impacted succussions in water and ethanol for preparing the homoeopotencies hold the key. These are unique only to Homoeopathy and have not been investigated by ortho-sciences like Physics and Chemistry.

The action of high potency homoeodrugs as established above by these animal experiments and homoeomedicinal cures of human patients, throws up a challenge and points to a new scientific phenomenon. Underlying new phenomenon is the induction of chemical specificity of the solute drug molecules into molecules of the solvent medium via mechanical agitations of their mixture. Thus the molecules of the diluent solvent medium (lactose, water, ethanol) acquire and later mimic the chemical specificity of the solute drug molecule, to thereby themselves act as the therapeutic agents. The dose therefore contains plenty of medicinally active diluent molecules to satisfy the Avogadro's law, removing for good the perennial conceptual impasse created by Avogadro's law. Revision of the physical basis of the 'chemical specificity' of a molecule becomes necessary, however.

12. New physical bases of chemical specificity & recognition of molecules

Molecule is the unit of chemical reaction. Among the given molecules, under the given conditions, the same chemical reaction occurs unmistakably. Therefore every molecule has a characteristically unique 'chemical specificity' mediating its chemical properties. What is the physical basis of the chemical specificity of a molecule and how does it recognize, or gets recognized by, other molecule(s) without making mistakes?

Spectrophotometry identifies an atom/molecule by its electromagnetic spectrum because no two different atoms/molecules and no atom/molecule in no two different energy states can emit the same electromagnetic spectrum. This is because the energy quantum for every spectral line in the spectrum is uniquely characteristic of the atom/molecule and its energy state. But the same very outermost valency electrons produce both the electromagnetic spectrum and chemical bonds.

Molecule is the unit of chemical reaction and chemically exchanged energy between two interacting molecules is uniquely characteristic of the molecule pair. So, chemically exchangeable energy-quantum is the new physical basis of the chemical specificity of a molecule.

The chemical and biochemical discriminatory mechanisms recognize a molecule in two steps: *first*, of physical bonding via complementary 3-dimensional structures and *second*, of exchanging the energy dE specifically characteristic of the recognizer-recognizee pair. The first step exercises a *negative recognition* and the second constitutes the *positive recognition*. The first step can be certain only to tell that the molecule not binding to the receptor for molecule A is not A. But the second step identifies positively via the chemically exchanged energy dE particularly specific of the molecule A.

If a molecule B can be induced to carry the exchangeable energy of A, the discriminatory machinery can be fooled to treat B as A, as for example happens during the action of a homoeopathic drug here.

13. Mechanism of the homoeodynamization processes

The molecules of lactose, water and ethanol have one and only one thing in common, namely the -OH group radical. The oxygen atom in the -OH group, due to sp^3 hybridization, has four equivalent valency orbitals. Two of these have bond pair electrons and the other two unshared lone pair electrons. The latter having no definite higher energy levels, can be raised, in small steps, to any desired energy level and hence play the basic role here. The organic solvent DMSO (Dimethyl Sulphoxide) has lone pair electrons but no -OH group and does not serve as a diluent medium, emphasizing the role of lone pair electrons of -OH groups.

During forceful triturations and impacted succussions the outermost electron shell of the solute drug molecules comes repeatedly in close proximity with those of the diluent molecules. This induces *resonant promotion* of the lone pair electrons of the diluent -OH groups, in small steps, to energy levels of the chemically active electrons of drug molecules.

The diluent molecules thus acquire the chemically exchangeable energy and hence the chemical specificity of the drug molecule to get "potentized" with the drug. During serial dilutions of potency preparation the original drug molecules get eliminated and the diluent molecules resonantly promoted by them take over the resonant promotion of the unpromoted diluent molecules. These considerations have experimental support.

13.1 Supportive experimental evidence

Smith & Boericke [18] studied the CH_3 -, CH_2 - and -OH peaks in the Nuclear Magnetic Resonance spectra of ethanol, unsuccussed and succussed dilutions of sulphur in ethanol. Only the -OH peak of only the succussed potency spreads and reduces in area under the curve. No modern science can explain this observation, which in our theory however, follows from the resonant promotion of lone pair electrons of -OH groups in the potentized ethanol.

The Laser Raman Spectral peak [19] of diluent alcohol disappears in succussed dilution of Potassium Dichromate and reduces in height in that of Ammonium Nitrate but a new peak of the solute appears in both cases. These results cannot be explained by contemporary sciences, but

follow easily from the resonant promotion of the lone pair electrons of -OH groups of the potentized alcohol.

14. Power of high potencies & bypassing of the Law of Mass Action

The therapeutic action of potencies higher than the 12th centesimal is exercised by the diluent ethanol resonantly promoted with the original drug. These medicinally active alcohol molecules can easily cross the water and lipid channels in biological barriers like blood-brain barrier, placenta membrane, cell & nuclear membranes to produce profound therapeutic effects. Large crude drug molecules of the low potencies cannot easily cross these barriers.

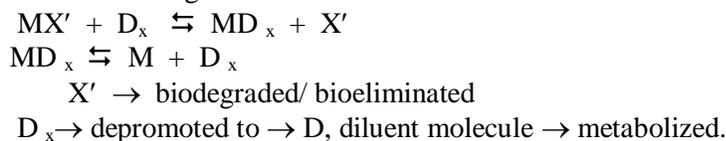
This may be the basis of the homoeopaths' empirical observation that higher potencies are more powerful. It could also explain why high potencies could cure even some of those cases, which for the modern Scientific Medicine, were incurable, difficult-to-cure or requiring surgery.

This also bypasses the Law of Mass Action according to which the chemical or therapeutic activity of a drug is proportional to its molar concentration, and hence the high potencies with no drug molecule should have no therapeutic action

14.1 Mechanism of Homoeodrug Action

Symptom totality of a disease indicates total biological response of the *healthy subject in the patient* to the causative xenobiotic. The potentized homoeomedicine D_x , prepared by resonantly promoting the diluent molecules D with the crude drug molecules X, contains a mixture of diluent molecules resonantly promoted with the antigenic and pathogenic determinants of X. The xenobiotic X' , crude drug X and the homoeopotency D_x carry similar chemically exchangeable energies and chemical specificities, hence elicit similar symptom-totality.

Homoeocure has two pronged effect: one of stimulating the immune response, and second of dislodging X' from the disease complex MX' formed with the biomolecule M, through competitive chemical exchanges:



Competitive chemical exchanges between the pathogenic and curative xenobiotic molecules are thus basic to the homoeopathic drug action on the **Law of Similars**. That is why a minute quantity of homoeomedicine as potentized ethanol molecules is sufficient for homoeocure.

15. World Health Organization's definition & Scope of health improved

The Modern Scientific Medicine (Allopathy) accepts the World Health Organisation's definition: "Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity".

Here "absence of disease is NOT health"! This internal inconsistency or self-contradiction arises because for diagnosis under the Scientific Medicine a disease has to be advanced enough to create laboratory detectable biochemical abnormalities and/or biopotential variations and/or pathologic tissue changes outside the "normal range". In the pre- or sub-clinical stage, the clinical laboratories report N.A.D. (no abnormality detected). So the physician diagnoses N.A.D. (no appreciable disease). But the patient suffers and has some subjective/mental and physical symptoms on which a curative homoeomedicine can be given to nip or abort the disease in its pre- or sub-clinical stage.

Since the modes and planes of action are complementary the Homoeopathy, Allopathy/Ayurveda and Yoga are judiciously combined under the newly proposed holistic therapeutics *Navayurveda*. Here Homoeopathy cures the disease at the cellular & molecular

levels and allopathic medicines in optimal doses are given not to suppress the morbid symptoms but make the basic homoeocure comfortable by controlling the symptoms within the tolerable limits, which varies from patient to patient. With the progress of the cure allopathic medicines are tapered off. The Yogic *Praanaayaam* and meditation help attenuate anxiety & agony and control psychological component of disease. Navayurveda has cured some of even those cases, which for Scientific Medicine (Allopathy) are: a) incurable/fatal, b) difficult-to-cure even with long medication, c) require surgery, d) viral. To see some of such cured cases visit the website: http://www.geocities.com/drratiram_sharma/index.html and access the index HomoeoEfficacyEstablished / Cure of Incurable Cases.

Under the Navayurveda Healthcare, the general quality of public health is expected to be significantly improved by nipping diseases in their pre- or sub-clinical stages. The quality and length of life will improve in general. The incidences of dangerously advanced and also of the iatrogenic diseases will be reduced, and so will be the needs for expensive centers for bypass and organ transplant surgeries. The national governments even with limited resources can well afford to assume the responsibility of public health under this cheapest yet most effective Navayurveda based Healthcare Delivery System. The rich advanced countries presently under the health care of Allopathy or Scientific Medicine have to actually experience, to believe in, the better quality of health achievable under Navayurveda-based Healthcare. Chapter-17 of the 2008-eBook in ref. [1] gives the details.

16. The basic continuity in the living & nonliving

Chapter-18 of the 2008-eBook [1] provides the details. Molecule is a unit of chemical reaction. The chemical and biological discriminatory machineries recognize a molecule always without mistake. A molecule makes no mistake in its own chemical behavior and in recognizing, or in being recognized by, others due to its **intelligence**. This points to the existence of atomic and molecular intelligence whose physical basis is the 0-spin sharmon-composed energy-quantum exchanged between the recognizer and recognized pair during positive recognition. Since intelligence is an essential attribute of consciousness, the atoms and molecules are associated with basic intelligent consciousness, and sharmon is the '*quantum of intelligent consciousness*'. The sharmon unites into itself the ultimate primal knower & known and hence is the **primal knowledge** (*pragyaana*), consistent with the grand statement of the *Aatreya Upanishad* '*pragyaanam brahm*'.

The 'mind' and 'matter' though distinctly different in the manifested form unite and unify basically in their generation from the corresponding attributes of the sharmon. Cosmino mass and electric charge mediate the generation of inert matter and sharmon's intelligence gives rise to the intellect and life. These respectively correspond to *aparaa prakrti* (lower inert Nature) and *paraa prakrti* (higher conscious Nature) of Gita (7/4, 5).

The intelligence & consciousness are the necessary and sufficient attributes of 'life' in a living entity. Hence the living and nonliving division in the universe falls, because all is living-nonliving unification. In the actual world there are different types of living beings and manifested life. These are basically determined by the quantity, composition and organization of the intelligent molecules. In those entities and bodies, which appear and behave as nonliving, the intelligent consciousness in the constituent atoms and molecules has been neutralized, masked or compensated mutually among themselves or remains unmanifested, waiting for conditions favouring manifestation. With the development of the nucleic acids, DNA & RNA, and thence derived genetic code the biological development and organization became natural processes.

17. The 'primary substance' in Unified Theory & spiritual philosophies

The science and spiritual philosophies continue to stand far apart as mutually exclusive domains of knowledge and thought. The herein presented Unified Theory, however, enlarges its

scope to work out a symbiosis of the two. Chapter 18 of the 2008-eBook in ref. [1] gives the details. Here we briefly consider some salient points.

Most curious of the frequently asked questions, which has exercised in the past, and is still engaging the minds of the philosophers and scientists alike is about the most basic substance, which composes all in the universe.

In this context, the Indian philosophies of *Ishonpishad*, *Saankhya Darshan*, *Adwait Vedaant* and *Gita* mark the heights of imagination or the depths of intuitive thought.

The Unified Theory unifies physical concepts arising largely from the all-composing and all-pervading space-medium, the 'sharmon medium' as the '**prime basic substance**'. It is composed by the new particle 'sharmon', which is made of the micromost two elementary *cosminos*, the electrically positive '*positrino*' and negative '*negatrino*'. The two *cosminos* compose all forms of energy, mass, energy quanta and particles of matter and antimatter. The sharmon is also the 'quantum of intelligent consciousness'. The intelligence & consciousness are the necessary and sufficient attributes of 'life' in a living entity. The total *cosmino* content of the whole universe is eternally conserved and preserved and hence so are the total mass-energy content and the 'life content'. Therefore *cosminos* and sharmon and hence matter and life can neither be created from, nor dissolved into, nothing. Birth and death are of the living beings, not of 'life'. The sharmons composing an inert or dead body/tissue are as intelligent and conscious as in a living being.

The entire basic substance of the Cosmos is eternally conserved as the ever existing **Megovum**, for Mega (extremely big) and Ovum (egg) since it gives rise to all in the Cosmos, including the Universe. This also as the '*intelligently conscious*' **Megamind** manages the entire Cosmos. This scenario is very close to the *Brahm* of the *Adwait* philosophy vide the pronouncement "*sarvam khalu idam Brahm*" (certainly all this is *Brahm*) from *Chaandogya Upnishad* (3/14/1). Chapters-14 & 18 of the 2008-eBook in ref. [1] provide the details.

18. The origin of life on earth not extra-terrestrial

The foregoing discussion shows that the atomic intelligent consciousness gives rise to the molecular consciousness, which in turn generates that of the various living entities, beings and organisms. Therefore any place or even the most sterile desert on earth or anywhere in the entire Cosmos has the potential to be swarmed with life or living entities and organisms if and when sufficient and necessary physical, material and environmental conditions become available.

Regarding the perennially controversial question we can therefore say that the life on earth does not have or need any extra-terrestrial origin. Even if some life is discovered outside earth any where in the cosmos it does not mean that it was the origin or the source of life on earth.

It is also not the other way round. The life on earth is not necessarily needed to start life elsewhere in the cosmos.

19. Basic laws are inviolable

The *Ritam* (laws), besides *Satyam* (prime basic substance) is so basic in Indian spiritual philosophy that it is taken as the *Brahm* itself (*Ritam Brahm*). That is, like Unified Theory, nothing happens against and/or in violation of the basic laws of Nature. And the "free will" is not completely free because every event, howsoever small, has all-round effects and ramifications. This makes Heisenberg's Uncertainty Principle untenable.

20. Conclusion: The Unified Theory is a universal theory

All the processes and mechanisms in both the inanimate and animate systems involve transfers and/or transformations of energy and/or mass, which in turn are composed by the Unified Theory's sharmon and *cosminos*. Unified Theory has a very wide and comprehensive scope of application to make it a realistic unifying theory of every thing in the Cosmos from the 10^{-33} cm *cosminos* through electromagnetic & gravitational radiations then electron, proton & neutron to billion light year large universe and from matter to intelligent consciousness, from

inanimate objective reality to animate entities and from science to Philosophy through Science of Homoeopathy and so on. No other theory past or present is so inclusive and explanatory.

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