Scientific Research

Electromagnetic Treatment of Genetic Diseases[*]

Edgar E. Escultura

GVP Institute for Advanced Studies, GVP College of Engineering, Jawaharlal Nehru Technological University, Hyderabad, India.
Email: escultur36@gmail.com

ABSTRACT

The paper offers an overview of quantum and macro gravity, two of the three pillars of the Grand Unified Theory (GUT), the other thermodynamics, developed in a series of papers since the solution of the gravitational n-body problem in 1997 (J. Nonlinear Analysis, A-Series: Theory, Methods and Applications, Vol. 30, No. 8, 1997, pp. 5021-5032) and consolidated in the paper, The Grand Unified Theory (J. Nonlinear Analysis, A-Series: Theory: Method and Applications, Vol. 69, No. 3, 2008, pp. 823-831). GUT is further advanced by the paper, The Mathematics of GUT (J. Nonlinear Analysis, A-Series: Theory: Method and Applications, Vol. 71, 2009, pp. e420-e431) and the discovery of more natural laws in the course of analyzing and explaining the disastrous final flight of the Columbia Space Shuttle in 2004 (J. Nonlinear Studies, Vol. 14, No. 3, 2007, pp. 241-260). Qualitative modeling was the key to the development of GUT and its theoretical and practical applications. The relevant natural laws of GUT that provide the foundations of the Unified Theory of Evolution (Scientific Natural Philosophy, Bentham Ebooks) are stated. GUT provides the basis for the development of the electromagnetic engine and the Unified Theory of Evolution, its theoretical application, and setting the basis for the development of appropriate technology for electromagnetic treatment of genetic diseases such as cancer, systemic lupos erythematosus, diabetes, muscular dystrophy and mental disorder, the central focus of this paper.[1]

Keywords: Fractal; Gene; Chaos Primum; Resonance; Superstring, Turbulence; Brain Wave; Composite Gene; Dark Matter; Electromagnetic Wave; Qualitative Modeling; Brain Wave Superposition; Genetic Alteration; Encoding; Modification and Sterilization

1. Introduction

This paper applies the grand unified theory (GUT) [1] towards development of electromagnetic engines and suitable technology for electromagnetic treatment of genetic diseases based on [2], a theoretical application of GUT, such as cancer, systemic lupos erythematosus, diabetes, muscular dystrophy and mental disorder, e.g., depression, epilepsy, schizophrenia and autism. The technological development is discussed, extended, advanced, enriched and elaborated in this paper using the tools developed in [1-13]. The logic is quite simple: since the physical symptom of a genetic disease is determined by its gene, it can be eliminated by altering or sterilizing it.

We state the relevant laws of nature of GUT for our purposes including biological laws [2,5,7,8] with explanation when necessary, especially, those with some bearing on electromagnetic treatment of genetic diseases.

We then provide an overview of the two types of

technology based on GUT called GUT technology that utilize the natural energy of dark matter, one of the two fundamental states of matter that comprises over 95% of our universe, the other ordinary or visible mater; dark because it is not observable with present medium for observation which is light and known only by its impact on visible matter [1,3,4,9,10]. Dark matter is clean, free, inexhaustible and abundant everywhere in the Cosmos [1,3,4,9,10]. There are existing *partial* GUT technologies that already offer advantages over conventional technology and convert latent or dark energy to kinetic or visible energy, e.g., magnetic train, electric power generator; partial because they use conventional sources of electric power and were designed without benefit of physical theory being based solely on the inventor's extensive information about magnets. They belong to type I GUT technology that utilizes the natural engine of vortex flux of superstrings around a magnet called magnetic flux [3]. The superstring is the basic constituent of matter. We then provide an overview of the two types of technology based on GUT that utilize the natural energy of dark matter, one of the two fundamental states of matter of our

---

[*]Electromagnetic treatment uses electromagnetic waves as the medium.
[1]The author is prepared to support any research and development projects towards the realization of the two types of GUT technology, particularly, the appropriate one for electromagnetic treatment of genetic diseases.

universe, the other ordinary or visible mater [1,5,11]; dark because it is not observable with present medium for observation which is light and known only by its impact on visible matter. Dark matter is clean, free, inexhaustible and abundant everywhere in the Cosmos [1,5,9,10]. There are existing *partial* GUT technologies that already offer advantages over conventional technology and convert latent or dark energy of dark matter to kinetic or visible energy; partial because they use conventional sources of electric power and were designed without benefit of physical theory. Type I GUT technology utilizes the natural engine of vortex flux of superstrings around a magnet called magnetic flux [3,4,9]. The superstring is the basic constituent of matter.

2. Qualitative Mathematics and Modeling

The crucial new element in the new physics articulated by GUT is qualitative mathematics and modeling that *explains* nature in terms of its laws, introduced in and the main contribution of [14], its main tool qualitative mathematics [1,3,4,9]. This new methodology, was the crucial factor in the development of GUT and its theoretical and practical applications [2,3,5,7-9,12,13,15, 16]. In contrast, mathematical modeling (now called quantitative modeling) that *describes* the appearances of nature mathematically, its main tool computation and measurement, has left long-standing problems unsolved, e.g., the gravitational n-body [17] and turbulence problems [16, 18], and fundamental questions unresolved, e.g., what the basic constituent of matter and structure of an elementary particle are. Qualitative mathematics was crucial for the resolution of the 360-year-old Fermat's last theorem in 1998 [19] and critique-rectification of the real number system and its reconstruction as the consistent new real number system [20] and gave rise to the mathematics of GUT [4]. It includes abstract mathematical spaces, e.g., mathematical space or axiomatic system, the search for the laws of nature and design of GUT technologies. Naturally, qualitative mathematics articulates the qualitative solution of a physical problem provided by a physical theory [16,18].

3. Quantum Gravity

Quantum gravity is concerned with primal interaction and dynamics of vortex fluxes of superstrings, e.g., atom, and is the basis of GUT technology.

3.1. Physical Concepts

Basic cosmic or *electromagnetic waves* are generated by the normal vibration of atomic nuclei propagated across dark matter, the latter made up of non- and semi-agitated superstrings as suitably synchronized vibration of this medium. They are the prime mover of our universe for

they convert dark to visible matter, convert latent or dark to kinetic or visible energy, trigger thought and serve as medium of the brain and gene for their functions. It is in the nature of the superstring to expand and become visible when suitably agitated, e.g., by cosmic waves and nuclear explosion, and shrink steadily when left alone, by Energy Conservation in both instances.

Wave in general is suitably ordered sequence of resolution of contending forces in the medium, *i.e.*, synchronized vibration. For example when a piece of stone is thrown into water, molecules are pushed downward by its impact. Water pressure pushes them upward and beyond the surface due to momentum. Then gravity pulls them downward below the surface due to momentum; the cycle is repeated until the imparted initial force or energy is dissipated. During this vibration or fluctuation of the molecules they vibrate the surrounding superstrings due to resonance creating a sequence of concentric circular waves that travel outward. However, no molecule travels with the wave as every molecule in its path vibrates in place with suitably fluctuating amplitude.

The characteristics of electromagnetic wave are determined by the generating nuclear vibration (due to the impact of cosmic waves from all directions) in accordance with the internal-external dichotomy law that says.

Internal-External Factor Dichotomy Law. *The interactions and dynamics of a physical system are shaped by internal and external factors*; *in general the internal is principal over the external and the latter works through the former.*

(This law applies also to the social and behavioral sciences).

Electromagnetic waves travel across dark mater via resonance in accordance with the next law discovered in the course of analyzing and explaining the disastrous final flight of the Columbia Space Shuttle [13] (the preceding and next laws are general and beyond the laws of quantum gravity although they are consistent with Energy Conservation that we shall state later).

Resonance Law. *Maximum resonance between waves, oscillation or vibration occurs when they have exactly the same characteristics with wavelength or frequency as the principal factor. The degree of resonance declines sharply with the difference in order of magnitude of wavelengths between them. However, at suitably high order of magnitude of wavelength the infinitesimal effect of resonance with waves of orders of magnitude nearby rises to significance.*

Flux is motion of matter with identifiable direction at each point, e.g., water current and basic cosmic wave. A flux can be incoherent, e.g., mixture of different opposing fluxes or motion. *Turbulence* [16,18] is coherent flux e.g., vortex flux of superstrings which is dark but detected through its charge, typhoon, tornado.

Chaos is indistinguishable mixture of order [16,18]. For example, at the onset of a hurricane where air molecules are rushing by the trillions towards tropical depression, one cannot monitor or predict the direction of motion of any molecule due to the immensity of their collisions on account of uncertainty of large numbers [4,20]. However, every molecule is subject to natural laws that impose order on its motion.

Energy is motion of matter. Therefore, matter and energy are inseparable, *i.e.*, neither pure energy nor pure matter exists, every piece of matter has energy and everything that has energy, e.g., light, is matter and has mass. In fact, the photon is rapid oscillation of a segment of superstring [3,4,9] and heat is kinetic or visible energy due to vibration of atoms of the heated material [3]. Its propagation through heat conduction is also governed by the law of resonance [3,13,17,21] that vibrates contiguous molecules in suitable sequence along its path.

A *physical system* is any cluster, configuration or motion of superstrings, dark or visible, e.g., superstring, atom, galaxy. Wave is a physical system because it is due to synchronized vibration of the medium. *Mass* is amount of matter in a physical system. In the metric system *kilogram* is a unit of measure.

The superstring is a circular helical loop like a lady's spring bracelet (see figure in [15]). It is non-agitated if its cycle length (CL) is less than 10^{-16} meters, semi agitated if $10^{-16} < CL < 10^{-14}$ meters and agitated if $CL > 10^{-14}$ meters. A *primum* is a unit of visible matter, an agitated superstring, *i.e.*, having a segment with $CL > 10^{-14}$ meters and sinusoidal cylindrical profile (Figure 2 [3]).

These definitions are partial until we have well defined the concepts by natural laws.

3.2. The Laws of Nature

We first state the most fundamental law of nature, an enrichment, broadening and extension of the second law of thermodynamics that reveals itself *everywhere* in the Cosmos.

Energy Conservation. *In any physical system and its interaction, the sum of kinetic and latent energy is constant, gain of energy is maximal and loss of energy is minimal.*

The various expressions of energy conservation are identified by the next law.

Energy Conservation Equivalence. *Energy conservation has many expressions, forms and components: order, symmetry, economy, least action, optimality, efficiency, stability, self-similarity (nested fractal), coherence, resonance, quantization, synchronization, smoothness, uniformity, motion-symmetry balance, non-redundancy, non-extravagance, evolution to infinitesimal configuretion, helical and related configuration, circular, helical, spiral and sinusoidal configuration and, in biol-*ogy, *genetic encoding of characteristics, reproduction and order in diversity and complexity of functions, configuration and capability.*

We call each component of this law physical principle. They are important in deciding scientific issues. For instance, the principles of non-redundancy and non-extravagance established that the third quark discovered in 2004 that excited physicists thinking they had found the *gluon* turned out to be the −quark discovered in Fermi Lab several decades earlier because it is indistinguishable from it. This means that the gluon does not exist; a similar verdict applies to the Higgs boson. Their existence is not a theoretical necessity and nature works well without them.

The next law comes from complicated qualitative analysis in a series of papers since the solution of the gravitational n-body problem in 1997 [17], especially, the derivation of the superstring's fractal structure and indestructibility based on known natural laws and information [3,4,6,9-11,15] from which, combined with Flux-Low-Pressure Complementarity, follows that the Universe of dark matter is timeless and boundless. We summarize the result of the analysis as a law of nature (details in [3,4]).

Existence of Basic Constituent of Matter and its Generalized Nested Fractal Structure. *The basic constituent of dark matter is the superstring. It is a nested fractal sequence of superstrings or toroidal fluxes that forms a circular helical loop with closely packed cycles, with itself as first term; each toroidal flux in the sequence is a superstring having toroidal flux, a superstring, along its cycles, etc.; each superstring except the first, is contained in and self-similar to the preceding term in structure, behavior and properties.*

The next two natural laws are central to primal interaction and turbulence in general [3,4,9,16]. The formulation of the first one was inspired by a simple high school experiment many years ago as follows: place two books flat on the desk their edges parallel to each other and three inches apart. Put a soft tissue paper above the gap between them and blow underneath. Will the paper fly off? No, it will be sucked by and flow with the wind.

Flux-Low-Pressure Complementarity. *Low pressure sucks matter and the initial chaotic rush of dark matter towards a region of low pressure stabilizes into local or global coherent flux; conversely, coherent flux induces low pressure around it.*

Flux Compatibility. *Two prima of opposite toroidal flux spins attract at their equators but repel at their poles; otherwise, they repel at their equators but attract at their poles. Two prima of same toroidal flux spin connect equatorially only through a primum of opposite toroidal flux spin between them called connector.*

Law of Uneven Development. *In any process or in-*

teraction development proceeds unevenly and perfect balance and uniformity is unstable.

This law is truly universal and applies to both natural and social sciences including the behavioral sciences.

3.3. More Physical Concepts

We can now describe physical concepts more fully and explain their properties and behavior. Hit by cosmic waves from all directions, the toroidal flux of a primum is thrown into erratic motion called *spike* its centroid remaining in the cycles. Traveling at 7×10^{22} cm/sec [22], it pulls the superstrings around the primum into a vortex flux with the eye containing its axis. This linear speed measured for the proton is a constant of nature, by the principle of synchronization from which follows that the speed of electric current (moving charge), a split off from a vortex flux of the atom, also travels through the conductor at this speed. The energy of this induced vortex flux is measured as charge. When the vortex flux spin is counterclockwise the charge is positive, negative otherwise. The toroidal flux spin or charge of the primum determines its interactions.

3.4. Primum, Photon and Primal Interaction

The next law governs dark to visible matter conversion.

Dark-to-Visible-Matter Conversion. *When suitable shock wave hits a semi-agitated superstring one of these occurs*: (*a*) *the outer superstring breaks, its toroidal flux remaining non-agitated or* (*b*) *a segment bulges into a primum, unit of visible matter.*

The extreme cycle of the bulge in (b) is called the equator. Hit from all directions by cosmic waves the toroidal flux is thrown into erratic motion called *spike* along the helical cycles as it speeds through it at 7×10^{22} cm/sec [22]. It pulls the superstrings around the primum and forms a vortex flux with its eye along the axis turning it into a magnet with polarity in accordance with the right hand rule of electromagnetism, *i.e.*, when the index finger points in the direction of the toroidal flux, the thumb points to the north pole; otherwise, it points to the opposite, the south pole. The vortex flux is its magnetic flux whose energy is measured as charge. Thus, charge is energy or motion of matter, the primal induced vortex flux of superstrings. A primum is positive if its vortex flux spins counterclockwise viewed from its north pole, negative otherwise. The electron is a negative primum, its charge -1 (1.6×10^{-19} coulombs [23]), the unit of charge by convention. It is a basic primum. The other basic prima are +quark, charge +2/3 and −quark, charge −1/3 [24]. They are basic because they comprise every atom. From Flux Compatibility two prima of the same spin repel at their vortex fluxes' rims and attract or join at their poles, north to south or south to north. If they

have opposite spins they attract at their vortex fluxes' rims but repel at the same poles. The proton is a pair of +quarks joined by a −quark at their rims, their equatorial plane coplanar, by Energy Conservation (Figure 6 in [3]). Thus, its charge is: 2/3 − 1/3 + 2/3 = 1, *i.e.*, there is counter-clockwise vortex flux spin around it, the −quark an eddy. All simple prima have charge, e.g., the positron, anti-matter of the electron, has charge +1.

The neutrino is coupled pair of unknown prima of numerically equal but opposite charges, say +q and −q (not anti-matter pair otherwise they would mutually annihilate) so that its charge is +q −q = 0, neutral. The neutron is coupled as follows: an electron joins the two +quarks of proton beside the −quark at their rims, by Flux Compatibility, pushing the −quark a bit. Thus, the eyes of the electron, −quark and two +quarks form a quadrilateral whose interior is bounded by their coherent fluxes, a region of low pressure. Therefore, it sucks suitably light neutral primum, the neutrino, into it (see Figure 6(a) in [3]). Thus, the neutron's charge: +2/3 − 1/3 + 2/3 − 1 + 0 = 0. Since the masses of the proton, neutron and electron are known [4] the mass of the neutrino has been computed at 1.55 times the mass of the electron [9]. Such primal computation is called quantum algebra.

3.5. The Atom

The first thing that forms in the atom is the nucleus consisting of protons alone joined by −quarks at their vortex rims, by Flux Compatibility. Since the protons have the same vortex flux spin their vortex fluxes add up and so do the charges around them. Therefore, the charge of the combined vortex fluxes equal the number of protons in the cylindrical eye (atomic number) containing the nucleus. Their fluxes in the nucleus neutralize each other since they have the same spin (see Figure 6(b) in [3]; ref. [3] discusses how heavy isotope of an element forms).

Like the primum, the nucleus is a magnet with positive polarity in accordance with the right hand rule of electromagnetism. By Flux Compatibility and Flux-Low-Pressure Complementarity, electrons rush towards its magnetic flux and, being light, are swept by the spinning magnetic flux (vortex flux) into orbit. When the number of orbital electrons equals the number of protons in the nucleus, the atom is neutral; otherwise, it is a positive or negative ion. By centrifugal force the most energetic orbital electron lies close to the equatorial plane, the less energetic ones to the poles at inner orbits [3]. By the principle of symmetry, the electrons' orbits are symmetric with respect to the equatorial plane. They are not real curves but expectation curves due to the impact of cosmic waves, micro component of turbulence [3,13,16,18] and Heisenberg's uncertainty principle [23]. The orbital electrons are sometimes called electron cloud because

they look like cotton ball through the electron microscope. (The nucleus sucks and collects non-agitated superstrings which are released as particles and energy in nuclear explosion [3].

Clearly, the atom is a magnet with positive polarity, *i.e.*, counterclockwise vortex flux spin, due to the protons in the nucleus. Therefore, suitably oriented atoms of ferromagnetic material, e.g., iron, can join north to south or south to north poles, by Flux Compatibility and Flux-Low-Pressure Complementarity, to form *string*. Atoms attach to another atom by sharing a valence electron each as connector to form a molecule, by Flux Compatibility. Thus, in ferromagnetic material like iron, −quarks can join the string of atoms equatorially to form bundle, the number of strings depending on the material. A bundle determines a line of force of its vortex flux. By joining bundles together by −quarks a magnet forms with its lines of force as magnetic flux.

4. Macro Gravity

Macro gravity deals with dynamics and interactions of cosmological vortices and the cosmology of our universe as a super, super galaxy, *i.e.*, its birth, evolution and destiny. Our universe is special; it traces its origin to the explosion of a super, super massive black hole 8 billion years ago [1] called the Big Bang [25,26]. It is one of the local bubbles in the timeless boundless Universe [4].

An ordinary universe results from Flux-Low-Pressure Complementarity and Uneven Development operating in dark matter. First, nested fractal sequences of regions of low pressure form. Then, by Flux-Low-Pressure Complementarity, they evolve into nested fractal sequences of cosmological vortices; by the quantization principle, they form maximal nested fractal sequences of cosmological vortices, an ordinary universe (not as powerful as a special universe [26]).

The Big Bang was the explosion of a black hole, the destiny of the core of a previous universe [26]. A black hole is massive concentration of non-agitated superstrings that accumulate in the eye of a cosmological vortex [27,28], its destiny. Every cosmological vortex has a black hole in its eye [27,28]. Contrary to popular belief black hole does not suck matter, being dark; it is the eye of the cosmological vortex that nurtures and collects it that does [27,28].

The Big Bang created a super, super depression in dark matter bounded by expanding wave front called the Cosmic Sphere [4,10,26]. Superstrings trapped between its outer and inner boundaries are compressed between the force of explosion and the force of suction by the super, super depression, by Flux-Low-Pressure Complementarity. The most energetic cosmic waves pierced the Cosmic Sphere and converted dark to visible matter in its immediate neighborhood. The less energetic ones bounced

between the outer and inner boundaries of the Cosmic Sphere agitating the trapped superstrings between them to at most semi-agitated superstrings due to compression. As the Cosmic Sphere expanded, combined with outward pressure from the trapped semi-agitated superstrings, it burst at t = 1.5 billion years from the start of the Big Bang [29]. We put the birth of our universe at this time and place because the released semi-agitated superstrings formed simple prima initially at the temperature of 6000°C, the first appearance of visible matter in the early universe [28] along with coupled prima and light elements that formed our early universe at 5500°C. (We take the temperature 6000°C as a constant of nature on the surface of a gaseous collected mass of a cosmological vortex, e.g., the Sun; this is also the surface temperature of the inner core of the Earth [30]) Together, they formed bright radioactive clusters of visible matter called quasars which peaked at t = 2.5 billion years [28]. The quasars got entangled in cosmological vortices in neighborhood of the once Cosmic Sphere and became the early galaxies. Our universe accelerated its expansion due to falling mass momentum conservation and creation of matter in the spinning mass around the eye due to the micro component of turbulence [16].

By Flux-Low-Pressure Complementarity, the super, super depression evolved into a super, super galaxy, our universe; as it expanded with increasing power of spin, it drew into orbit galaxies that formed in its neighborhood and those that formed prior to the Big Bang, e.g., the Milky Way [31]. At this time, our universe is the common first term of nested generalized fractal sequences of cosmological vortices starting from it through galactic clusters, galaxies, stars, planets, moons and grains of cosmic dust [26]. Gravity is due to suction by the eye of a cosmological vortex, e.g., Earth's. It can be repulsive, e.g., two cosmological vortices of the same gravitational vortex flux of superstrings spin repel at their rims. Our universe is not the only special universe in the Universe of dark matter as shown by the galaxy clusters traversing it [32]; their sources must have been much more powerful than our universe as they are capable of catapulting them by its powerful spin as a super, super galaxy. Moreover, the galaxies that collided must have come from two different directions and could not have come from our universes since its galaxies travel at outward radially directions and could not have collided [33].

We briefly describe the nature of our universe as a local "bubble" in the Universe. Let r, r', r" be its radius, and rates of radial expansion and radial acceleration and t time in billion years. Using one light year as unit of distance and one billion years as unit of time and solving the differential equation of Hubble's law, we have,

1) $r(t) = 10^{10}e^{(\rho/2\pi)(t-8)}$ light years,
   $r'(t) = {}^{(\rho/2\pi)}10^{10}e^{\rho/2\pi\,(t-8)}$ light years/billion years,

r''(t) = (ρ/2π)²10¹⁰e^ρ/2π (t−8)

      light years/(billion years)²,

Using standard units we have, at t = 8 billion years,

2) r(8) = 3.2 × 10¹⁰ km,

    r'(8) = 840 km/sec,

    r''(8) = 3 × 10⁻¹⁰ km/sec².

This calculation was confirmed recently by the Nobel Prize winning discovery of Saul Perlmutter, Adam Riess and Brian Schmidt last year, 2011 (it was also reported in [34,35] previously) Thus, our universe is at its ascendancy phase of power and expansion since r'' > 0. Note that the corrected age of our universe is 8 billion years since the current estimate of 14.7 billion years is based on the wrong premise that our universe is older than the Milky Way. It is the other way around [31].

5. Electromagnetic Engines

One example of Type I GUT technology is the magnetic train. It consists of a pair of electromagnets one fixed on the track (activated by the approaching train), the other attached to the train under the platform). They both have the same vortex flux spin, say, counterclockwise and having a common equatorial plane. By Flux Compatibility, they push each other. By tilting the electromagnet under the train's platform suitably the train is pushed forward in accordance with the right hand rule of electromagnetism [3]. There is potential for great speed here, limited only by consideration of safety, since the linear speed of the magnetic flux is 7×10^{17} km/sec. Although the magnetic train is still a partial GUT technology since it uses fossil, nuclear, geothermal and hydro fuel, it has already some advantages over conventional technology. Since the train is elevated above the track and has minimal moving parts, there is negligible friction, wear and tear and dissipation of energy. Consequently, there is little maintenance cost except that due to corrosion, aging and metal fatigue. Moreover, it is clean because it uses only dark matter and operational cost is limited to electrical consumption since dark matter is free. That, too, will be eliminated in the future when electric power generation relies solely on GUT technology [36].

In the electric generator, a conductor coiled around the armature is rotated rapidly across the magnetic flux to draw into it split off vortex flux as electric current. The rotation is dependent on conventional fuel. This is not necessary. The magnetic flux can be split without an armature so that part of it goes through the conductor. Thus, aside from the cost of materials, electric current can be generated free [3]. All that is needed are strong permanent magnets. In fact, it is now possible to develop electromagnetic engines for motor vehicles, aircraft and space vehicles. The electromagnetic engine for aircraft and space vehicles relies *solely* on magnetic levitation

and gravitational flux (there is no point in our universe without gravitational flux [26]). Electromagnetic engines can now be developed for these modes of energy generation except for space vehicles which belong to the future.

6. Electromagnetic Treatment of Genetic Diseases

We highlight biological laws [2,5] that bear on medical applications of GUT, specifically, in designing Type II GUT technology for electromagnetic treatment of genetic diseases without injury to normal cells, *i.e.*, without side effect, and report important results from [2,5,7,36-38].

Relevant Biological Laws

Stochastic Complexity Principle. *Physical processes proceed stochastically to all possible configurations and towards greater complexity, during the present ascendancy phase of our universe subject to natural laws and already attained configurations and other boundary conditions.*

It debunks the popular belief that carbon deposits like oil and coal come from decayed animals which are much more complex physical systems than carbon atoms [2]. This law is reversed, when our universe begins to trek to its destiny as black holes [2].

Stability Law. *Although all possible configurations of matter arise stochastically only stable ones remain and are replicated; this is the main basis of biological evolution.*

This law governs the survival and extinction of species. Species that innovate suitably anatomically and physiologically achieve genetic evolutionary advances to gain dominance over other species. The evolution of the snake is a good example. Six million years ago it had a pair of legs at about 1/3 of its length from the tip of its tail. With such a long soft body it must have been clumsy. Then it gave up its legs (the scars are still visible) in favor of agility which made it easy to wiggle and propel itself through bushes and climb trees with ease in search of prey. Soon both prey and competitor became illusive and threatening. Thus, snakes became prey for birds and other snakes. The race for size and muscles ensued that gave rise to the strong and huge python and anaconda. Another juncture came: massive body needs more food but it also meant difficulty in pursuing prey that can hide in holes and crevices. This yielded a split in the snake species with new species becoming smaller and more mobile and venomous, the venom both for defense and digestion. Most snakes followed this course and are now the dominant ones. (There is evidence that the dinosaurs became birds; their feet having the same anatomy)

Determinant Law. *The gene determines the physical*

JBNB

characteristic of a plant or animal; *conversely, every physical characteristic of a plant or animal is determined by a gene.*

This law implies also that when a new physical characteristic appears, e.g., growth of extra finger, a new gene has been acquired or a recessive one surfaced physically.

Law of Genetic Alteration. *The possible sources of genetic alteration are: radiation, e.g., cosmic waves, exposure to some genes, frequent, consistent and sustained use of body part, chemical irritation and mental preoccupation with or craving for some object, living or not.*

Genetic alteration means the presence of a new gene (mutant) in the DNA strand or appearance of new characteristics determined by a gene, e.g., birthmark and extra finger. This law has medical applications and the basis of physical therapy, body building and training of athletes to develop the appropriate muscles, reflexes and skills which are encoded in the genes and proper training of the driver to develop appropriate reflexes. Moreover, genes of primates are known to have greater chance of reproducing their mirror images in the human chromosome through their brain waves. Hairy patches on the skin resembling the monkey's skin which are determined by a gene are sometimes acquired by humans.

Appearance of birthmark is an example of indirect genetic alteration due to the pregnant mother's sustained mental preoccupation with something, living or not.

Law of Induced Mutation, Genetic Alteration and Modification. *When a new or foreign gene is not at resonance but interacts with a gene in the host cell (interference or discordant resonance), its brain waves agitate the chromosomes of the host cell and produces its mirror image there in one DNA strand that replicates itself in the opposite strand to form a mature gene (i.e., a pair ready for mitosis). When the brain waves of the forreign gene resonates with a gene of the host cell the characteristics of one superpose on the other and produce a composite gene that sends out composite brain wave characteristics.*

Genetic Brain Wave Propagation and Encoding. *In an organism the gene generates and propagates brain waves in all directions and through the nerves; it is in harmony and at resonance with all its genes. A foreign gene or mutagen may have discordant resonance with or agitate the superstrings of the chromosome, insert its mirror image into one of the pair of DNA strands of the recipient cell and produce its mirror image on the other DNA strand of the pair to produce a mutagen.*

Corollary. *A foreign gene from the same species may, by resonance, superpose its brain waves on the brain waves of some gene to form composite brain waves that modify that gene accordingly.*

This occurs in transfer of gene from adoptive parent to adopted child. Transfer of genes may also occur between young couples who acquire common features.

Law of Genetic Activation. *Activation of a gene to produce tissues is controlled on cue from the environment preventing anomaly in an organism's development.*

This law prevents an eye from growing on the nose.

For example, the genes to produce the heart tissues will turn on in its vicinity; the rest will remain turned off.

Law of Reproduction and Correspondence. *During fertilization each gene from the sperm is paired with a gene from the egg* 1) *to form a composite gene by superposition*; 2) *that will produce a particular part of the embryo*; 3) *this introduces energy and that causes instability in the fertilized egg that triggers mitosis and* 4) *kicks off rapid cell division during the first few in the development of the embryo.*

For detail on sex differentiation, see [2].

Law of Advancement and Atrophy. *The need for survival and advancement and overcoming challenges from the environment and competition from other species induces suitable genetic alteration that allows a species to prevail over other species. At the same time, disuse of body part may degrade it and cause atrophy.*

Law of Resonance and Superposition. *Two waves of the same order of magnitude resonate; they are at maximum resonance when they have exactly the same characteristics and the principal determinant of level of resonance is wavelength or frequency; when two waves resonate their wave characteristics superpose on each other and produce composite gene and brain waves.*

Electromagnetic treatment refers to the use of electromagnetic waves as medium for treatment. We define some concepts and state known results from [2].

Brain wave is electromagnetic wave encoded with vibration characteristics of a living cell [2,7,8]. Brain waves, as electromagnetic waves, are highly energetic. They agitate and convert superstrings to prima. The *gene* is a sequence of four nucleotide bases, adenine paired with thymine through hydrogen bonding and guanine paired with cytosine also joined by hydrogen. They form a sequence of genes in the human chromosomes that make up the pair of DNA strands in the chromosomes. There are 25,000 to 30,000 genes in the human body lined up as pair of DNA strands coiled into a helix in the nucleus. Together, they determine the physical and physiological characteristics of the human body including instincts and reflexes in accordance with the genetic determinant law. The encoded vibration characteristics determine the formation of these base elements and the specific gene that gets inserted into the DNA strand. In turn, the enriched DNA produces the tissues in the cellular membrane at designated places in accordance with the Genetic Activation Law.

7. Collaborative Research

Collaborative research and development research towards development of appropriate technology for electromagnetic treatment of genetic diseases will require participation of experts in GUT and each of the genetic diseases concerned. Another group of experts will identify the distinguishing vibration characteristics, especially, wave length, of each of these diseases and nuclear engineers to identify suitable radioactive material that produces the required resonant radiation for each, if any, and radiation engineers to design and devise appropriate technology that projects desired resonant radiation for each of these diseases. There are essentially two subtypes of type II GUT technology to be developed a) one for suitable genetic alteration of each of these genetic diseases (may be developed separately for each) and b) another for genetic sterilization or burning the gene by raising the intensity of the resonant radiation (may be designed separately also). Each disease may require one subtype of type II GUT technology. The GUT expert will provide theoretical guidance for both groups. Needless to say, but this pioneering research and development project requires a rather large group of experts in several fields of science as well as nuclear and radiation engineers.

REFERENCES

[1] E. E. Escultura, "The Grand Unified Theory," *Journal of Nonlinear Analysis*, *A-Series*: *Theory*: *Method and Applications*, Vol. 69, No. 3, 2008, pp. 823-831. doi:10.1016/j.na.2008.02.043

[2] E, E. Escultura, "The Unified Theory of Evolution," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 237-260. http://www.benthamscience.com/eBooks/9781608051786 /index x.htm

[3] E. E. Escultura, "Quantum Gravity," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham Ebooks, 2011, pp. 61-80. http://www.benthamscience.com/eBooks

[4] E. E. Escultura, "The Mathematics of the Grand Unified Theory," *Journal of Nonlinear Analysis*, *A-Series*: *Theory*: *Method and Applications*, Vol. 71, 2009, pp. e420-e431. doi:10.1016/j.na.2008.11.003

[5] E. E. Escultura, "The Origin and Evolution of Biological Species," *The Journal of the Science of Healing Outcomes*, No. 6-7, 2010, pp. 17-27.

[6] E. E. Escultura, "The Grand Unified Theory," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 60-107.

[7] E. E. Escultura, "The theory of intelligence and evolution," *Indian Journal of Pure and Applied Mathematics*, Vol. 33, No. 1, 2003, pp. 111-129.

[8] E. E. Escultura, "The Theory of Intelligence," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 108-118. http://www.Benthamscience.com/ebooks/9781608051786 /index x.htm

[9] E. E. Escultura, "Qualitative Model of the Atom, Its Components and Origin in the Early Universe," *Journal of Nonlinear Analysis*, *B-Series*: *Real World Applications*, Vol. 11, 2009, pp. 29-38. doi:10.1016/j.nonrwa.2008.10.035

[10] E. E. Escultura, "Dynamic Modeling of Chaos and Turbulence," *Journal of Nonlinear Analysis*, *A-Series*: *Theory*: *Method and Applications*, Vol. 63, No. 5-7, 2004, pp. e519-e532.

[11] E. E. Escultura, "Extended Geometrical and Generalized Fractals, Chaos and Applications," In *Mark Columbus*, Ed., in Press, Fractal 4.

[12] E. E. Escultura, "Alternative to Nuclear and Fossil Fuel," The Free Library. http://www.thefreelibrary.com/THE+GRAND+UNIFIED +THEORY+A+SUMMARY-a01074003661

[13] E. E. Escultura, "Columbia's Final Flight: Crossroads for Science," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 81-87. http://www.Benthamscience.com/ebooks/9781608051786 /index x.htm

[14] E. E. Escultura, "The Trajectories, Reachable Set, Minimal Levels and Chain of Trajectories of a Control System," Ph.D. Thesis, University of Wisconsin, Madison, 1970.

[15] E. E. Escultura, "From Macro to Quantum Gravity," *Journal of Problems of Nonlinear Analysis in Engineering Systems*, Vol. 7, No. 1, 2001, pp. 56-78.

[16] E. E. Escultura, "Turbulence: Theory, Verification and Applications," *Journal of Nonlinear Analysis*, *A-Series*: *Theory*, *Methods and Applications*, Vol. 47, No. 8, 2001, pp. 5955-5966. doi:10.1016/S0362-546X(01)00697-6

[17] E. E. Escultura, "The Solution of the Gravitational N-Body Problem," *Journal of Nonlinear Analysis*, *A-Series*: *Theory*, *Methods and Applications*, Vol. 30, No. 8, 1997, pp. 5021-5032.

[18] E. E. Eacultura, "Theory of Chaos and Turbulence," In: E. E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 108-118. http://www.Benthamscience.com/ebooks/9781608051786 /index x.htm

[19] E. E. Escultura, "Exact Resolutions of Fermat's Equation (A Definitive Resolution of Fermat's Last Theorem)," *Journal of Nonlinear Studies*, Vol. 5, No. 2, 1998, pp. 227-254.

[20] E. E. Escultura, "The New Real Number System and Discrete Computation and Calculus," *Journal of Neural*, *Parallel and Scientific Computation*s, Vol. 17, 2009, pp. 59-84.

[21] E. E. Escultura, "The Pillars of the New Physics and Some Updates," *Journal of Nonlinear Studies*, Vol. 14, No. 3, 2007, pp. 241-260.

[22] V. A. Atsukovsky, "General Ether-Dynamics; Simulation of the Matter Structures and Fields on the Basis of the Ideas about the Gas-Like Ether," Energoatomizdat, Mos-

cow, 1990.

[23] E. Merchbacher, "Quantum Mechanics," 2nd Edition, John Wiley & Sons, Inc., New York, 1970.

[24] I. L. Gerlovin, "The Foundations of United Theory of Interactions in a Substance," Energoattomizdat, Leningrad, 1990.

[25] E. E. Escultura, "The Big Bang and What It Was," In: M. Columbus, Ed., *The Big Bang*: *Theory*, *Assumptions and Problems*, in Press, Nova Science Publishers.

[26] E. E. Escultura, "Macro Gravity," In: E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, 2011, pp. 87-107. http://www.Benthamscience.comebooks/9781608051786/index x.htm

[27] "New Clues to the Habits of Heavy Weights (Black Holes at Craters of Galaxies)," *Science*, Vol. 283, No. 5401, 1999, pp. 480-481.

[28] "The Quasars and Early Galaxies," Scientific American, 1983, pp. 708-745.

[29] G. Schilling, "Watching the Universe's Second Biggest Bang," *Science*, Vol. 283, No. 5410, 1999, pp. 2013-2014. doi:10.1126/science.283.5410.2003

[30] The Earth Atlas, "Dorling Kindersley," London, 1994.

[31] A. Hellemans, "Galaxy's Oldest Stars Shed Light on Big Bang," *Science*, Vol. 282, No. 5382, 1998, pp. 1428-1429. doi:10.1126/science.281.5382.1428b

[32] A. Hellemans, "The Mystery of the Migrating Galaxy Clusters," *Science*, Vol. 283, No. 5402, 1999, pp. 625-626. doi:10.1126/science.283.5402.625

[33] "Galactic Collision," Scientific American, 1995, pp. 11-14.

[34] J. Glanz, "Cosmic Motion Revealed," *Science*, Vol. 282, 1998, p. 5397. doi:10.1126/science.282.5397.2156a

[35] J Glanz, "No Backing off from Accelerating Universe," *science*, Vol. 282, No. 5392, 1998, pp. 1248-1249.

[36] E. E. Escultura, "Gut Technology," In: E. Escultura, Ed., *Scientific Natural Philosophy*, Bentham EBooks, pp. 147-148. http://www.Benthamscience.com/ebooks/9781608051786/index x.htm

[37] V. B. Krylov and B. F. Shehegelov, "Mathematical Methods in the Physiology of Sensory System*s*, Book of Abstracts," 2*nd International Conference*: *Tools for Mathematical Modeling*, St. Petersburg, June 1999.

[38] G. S. Osipenko, A. N. Pokrovsky, B. V. Krylov and V. B. Plakhova, "Mathematical Modeling of Pain Sensation," *Proceedings of* 2*nd International Conference*: *Mathematical Modeling*, St. Petersburg, 2000.