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The Quest for Truth in the Twenty-First Century, a Reflection on the Ideal Epistemological Paradigm

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Abstract

Nowadays we live in an era of new discoveries occurring at a tremendous rate. Such a phenomenon has the propensity to create new and constant challenges likely to revolutionize our way of life. As a matter of fact, the twenty-first century stands out through its complexity and sophistication concomitantly. Its modus operandi is prone to generate further sophistication, exponentially, over time. We have almost reached an irreversible threshold where any system aspiring to survive needs to adapt to the new standards inherent in our Aquarian age. Precisely, one of the most important benchmarks of this age is thinking across disciplines. It follows that we cannot solve crucial problems within the limited and warped prism of one sole epistemic area. Indeed, since each discipline has but a tiny portion of the truth, it cannot, motu proprio, have a monopoly of the whole truth. For instance, it is proven that physics, cymatics and music can help treat brain injuries (brainwave entrainment through music). Cubism has enlightened quantum mechanics (perspectivism/dualistic nature of sub-atomic particles) by peeling off the layers of mystery in which the latter was enshrouded. Through cubism and its perspectivism, physicists finally grasped the behavior of photons and quantum entanglement because just like photons can be viewed either as particles or waves (perspectivism/quantum mechanics), reality can be viewed in different aspects depending on the observers (perspectivism/cubism, wave-particle dualism). A

philosopher validated this viewpoint and summarized it as follows: “everything that is perceived is perceived according to the view of the perceiver”. On the other hand, surrealism has helped decrypt the mystery of the fourth dimension of space time continuum studied in relativistic physics (Dali’s *Christus Hypercubus/Tesseract*). Poetry has elucidated how some brain organs function (angular gyrus, amygdalae and cross-modal metaphors in neurolinguistics). Additionally, art and science are not opposite, but complementary because they are intrinsically the two sides of the same coin whose overall understanding will enable us to sublimate nature by asserting our sovereignty over the universe. De facto, when art complies with eminently rigorous criteria such as symmetry, higher order, coherence, mathematical accuracy, and lacks any form of randomness, then it becomes science. Conversely, when science complies with eminently rigorous criteria of refinement, complexity, and sophistication, then it becomes art. For instance, Picasso’s *Dora Maar*, Dali’s *Christus Hypercubus*, or Leonardo da Vinci’s *Last Supper* can be viewed either as art or science according to the criteria applied to these three masterpieces. Consequently, there are cryptic connections between most areas of human knowledge. By virtue of these considerations, what might be the most cogent approach of the quest for knowledge in the twenty-first century? That is precisely the question on which we will reflect in this article.

Keywords: Quest for Truth, Epistemology, Paradigm, Century

Introduction

Nowadays we live in an era of new discoveries occurring at a tremendous rate. Such a phenomenon has the propensity to create new and constant challenges likely to revolutionize our way of life. As a matter of fact, the twenty-first century stands out through its complexity and sophistication concomitantly. Its modus operandi is prone to generate further sophistication, exponentially, over time. We have almost reached an irreversible threshold where any system aspiring to survive needs to adapt to the new standards inherent in our Aquarian age. Precisely, one of the most important benchmarks of this age is thinking across disciplines. It follows that in this era of complexity and higher sophistication we cannot solve crucial problems within the limited and warped prism of one sole epistemic area. Indeed, since each discipline has but a tiny portion of the truth, it cannot, motu proprio, have a monopoly of the whole truth, let alone the absolute. For instance, it is proven that physics,

cymatics and music have helped treat brain injuries (brainwave entrainment through music). Cubism has enlightened quantum mechanics (perspectivism/dualistic nature of sub-atomic particles) by peeling off the layers of mystery in which the latter was enshrouded. Indeed, pioneers of quantum mechanics confessed that Picasso's cubism has helped them to truly understand the arcana of quantum physics. Through cubism and its perspectivism, they finally comprehended the behavior of photons and quantum entanglement because just like photons can be viewed either as particles or waves (perspectivism/quantum mechanics), reality can be viewed from different angles/aspects depending on the observers (perspectivism/cubism, wave-particle dualism). A philosopher validated this viewpoint and summarized it as follows: "everything that is perceived is perceived depending on the view of the perceiver" ("Quidquid recipitur ad modum recipientis recipitur"). On the other hand, surrealism has decrypted the mystery of the fourth dimension of space time continuum studied in relativistic physics (Dali's Christus Hypercubus/Tesseract). Regarding poetry (synesthesia), it has elucidated how some brain organs function (angular gyrus, amygdalae and cross-modal metaphors, neuroscience of poetry, neuro-semiotics, neurolinguistics). Additionally, the distinction between art and science is spurious because they are not opposite, but intrinsically complementary. Therefore, there are cryptic links connecting most epistemic areas. By virtue of these considerations, what might be the most cogent approach for the quest for truth in the twenty-first century? In other words, what is the appropriate epistemological paradigm of this twenty-first century? That is precisely the question on which we will reflect in this heuristic work.

Materials and methods

Epistemology is one of the main areas of classical philosophy. Indeed, the latter consists of five main fields: metaphysics, ethics, logic, epistemology, and esthetics. Epistemology seeks to answer questions such as: "What do we know?" "What does it mean that we know something?" "What makes justified beliefs justified?" and "How do we know that we know?" Scientists have always been interested in philosophy/epistemology. For instance, Einstein, in his later years, emphasized its value when he wrote: "Science without epistemology is...primitive and muddled." (Pais, 13) Epistemology is very important because it intrinsically enables us to assess the theory, scope, condition, and status of knowledge, to conduct an unbiased, flawless critique of knowledge and sciences so that we can establish benchmarks necessary to evaluate how far they have progressed. Within this framework, it becomes clear that the last three centuries (18th, 19th, and 20th) have lionized epistemic specialization. Indeed, for the sake of efficiency, many great thinkers and researchers have focused their studies on one single area of knowledge. Picasso in painting (cubism), Sartre, Camus in philosophy (existentialism), Saussure (structuralism) and Chomsky (transformational generative grammar-generative semantics-language acquisition) in linguistics, Pearce in semiotics, Baudelaire (proto-symbolism), Poe (dark romanticism/supernaturalism), Césaire, Damas, Senghor (negritude) in poetry, Pasteur (microbiology and chemistry) in medicine, Riemann (differential geometry-metric tensor) and Gödel (the theory of incompleteness in logics) in mathematics, Einstein

(general and special relativity) and Hawking (black holes and wormholes- cosmology) in physics, Plank, Bohr, Schrödinger, Heisenberg in quantum physics, to mention but a few. All these great minds did an outstanding work that needs to be praised and summarized as a concinnity of genius and sagacity. However, although their works were bright, enriching, and even somewhat revolutionary, viewed from a different angle (from a purely epistemological perspective), they were limited in scope and quality because they failed to decrypt and solve the great mysteries of the universe and life in general: extending human life up to 300 years of age or more through the reverse of entropy (second law of thermodynamics in physics) by restructuring and mastering the function of cells and mitochondria, the engine cell or powerhouse of the cell (cellular and molecular biology); providing a scientific explanation of the soul and afterlife (interdimensional physics and metaphysics); travelling in time and multiple dimensions by mastering gravity; systematically eliminating all diseases on the planet, creating wormholes (tunnels/short cuts in space and time) to travel from one galaxy to another in the twinkling of an eye; mastering teleportation and magnetic invisibility, bending light at will (gravitational lensing); reading the minds (telepathy), reading the aura and interpreting the colors of its electromagnetic field (auric analysis and auric medicine by creating an auric machine to see a disease in the aura long before it is detected clinically (6 months- 1 year) just by examining its colors (each color indicates a specific quality, deficiency, physiological status, or condition)); harnessing the energies subsumed in the universe (solar energy, anti-matter, negative energy (Casimir effects), plasma, quantum vacuum flux field energy, zero point field energy, magnetic energy, magnetogravitics, electrogravitics (a form of anti-gravity); expanding human consciousness, in short, endowing us with a very unique quality of life and, by the same token, with the outstanding ability to sublimate nature by asserting our sovereignty over the universe. Consequently, notwithstanding this "progress", our civilization is still at level zero. A taxonomy for assessing the progress made by civilizations in the universe has been established by Dr. Kardashev Nikolai, a Soviet scientist. He has thus conceived three levels of civilization based on progress made, hierarchically: Type I, II, and III (see footnotes for specifics regarding this taxonomy at the end of this paper; also refer to Dr. Michio Kaku's book, *Hyperspace*, 277-278). From the interpretation of this assessment, it turns out that hitherto we have not even reached type I yet on our planet. The rationale for being so far behind might be the wrong epistemological paradigm that we have adopted in the last three centuries: a reductionistic, monistic, single-handed approach of knowledge.

Let us take but a modicum of cases to illustrate our viewpoint. Einstein, for instance, did a wonderful job in his theory of general and special relativity. He disqualified Newton in the analysis of time (monolithic, linear, and isochrone with Newton but relative in the universe and slower inside a very fast-moving object with Einstein-please refer to the twins' paradox where one ages much faster than the other). Einstein also discovered that gravity is not a force (as Newton believed) but a geometrical factor on space-time curvature (general relativity). He applied Riemann's differential geometry (Riemann's metric tensor/Riemannian manifold). Factually, gravity can warp,

distort space-time continuum, and provide the scientific possibility of time travel. However, Einstein could not decrypt how to unify the four major forces conceived to illuminate everything in the universe: gravity, electromagnetism, the strong force and the weak force. Therefore, he did not manage to materialize his unified field theory, his magnum opus.

Louis Pasteur, a French microbiologist/medical doctor, discovered the existence of germs and conceived a cogent methodology for preventing diseases by creating the vaccination--especially against rabies, anthrax, and a few other calamities. He also found how to eliminate germs, disinfect, and protect areas, wines, food, and milk in a process bearing his name, "pasteurization." When he died, scientists who continued his research followed his steps but did not work with other scientists: physicists, biologists, mathematicians, among several others. Consequently, they could not factually achieve one of the greatest assets coveted by mankind: the systematic elimination of diseases and the possibility of increasing longevity by hundreds of years by reversing entropy. Today, a few reliable researchers deem it scientifically feasible by flawlessly mastering the function of the mitochondria, the cell engine (the powerhouse cell) and provider for the body energy that is catalyzed by specific enzymes and coenzymes - NAD + for instance, that is, a vital electron carrier that essentially powers mitochondria.

With respect to Camus and Sartre, they laid out the major building blocks of existentialism by conducting an elegant and deep philosophical analysis of existence summarized in this formula: "existence precedes essence. It is necessary to live prior to finding one's own definition." It follows that man (*homo* in the Latin connotation, that is, man as opposed to animal, not man--*vir* in Latin--as opposed to woman) is a project that defines itself through each of its actions. Camus and Sartre also found that existence is nurtured by transcendence, but they did not realize that transcendence itself stems from a self-reliant transcendence, an over- or meta-transcendence that is, the "Isness," the Supreme Intelligence presiding over everything in the cosmos and called "God." Their co-presence (existence as transcendence and meta-transcendence as God) is necessary to vouch for the rational meaning of life because nothing can exist without a rational cause (*Nihil est sine ratione*). In his book *Nausée (Nausea)*, for instance, Sartre posited that we are ejected from the cosmos and bound to share our existence with inert matter without any rational justification whatsoever, a postulation that conditions us to be absolutely free. However, He failed to realize that an "ejected" entity can never exist without an "ejector" since a cause needs an effect and vice versa. Camus also rejected meta-transcendence and postulated an inverted transcendence, that is, a transcendence through man rather than through God (see his book *La Peste*). Consequently, Camus's and Sartre's research did not come to fruition due to that aporetic gap/flip, the exclusion of rational theology (rational analysis and understanding of God) from the existentialist equation. All these considerations attest to the fact that these great minds of the past were brilliant, but they failed to endow us with a unique quality of life. Why? Because even though each of them did a laudable work, they still functioned within the limited prism of their single and small area of knowledge with some degree of pride tinged with an atom of selfishness. Since knowledge is the quest

for truth and each area has but a tiny portion of truth, it becomes impossible to solve the great problems of the universe through one sole limited and Lilliputian amount of truth. Each area, or sub-set of knowledge, can find its relevance, veracity, and efficacy when it is realigned within the unified whole set of areas. That is precisely where the transdisciplinary approach of knowledge comes into the picture. It essentially consists in thinking across disciplines because it is now proven that since there are hidden and factual connections between most areas of human knowledge, we can use finding (s) from one discipline to solve problems inherently associated with another or others. Just as light (white light in general) is the sum of all the colors of the visible spectrum, truth/knowledge can be found in the sum of all the disciplines of human culture. Therefore, no field can claim to have a monopoly on the whole truth since each one has but a portion of it. Good thinkers and scientists have proven that any one thing is connected with everything in the universe, from the sub-atomic to the supergalactic level. As a matter of fact, we live in the twenty-first century, an era of sophistication, one in which overspecialization becomes a weakness. In that regard, Niels Bohr, Erwin Schrödinger and Werner Heisenberg, the pioneers of quantum physics observed that "the total sum of the minds in the universe is one." It follows that thinking across disciplines is the path and panacea to a bright future. In *The Quark and the Jaguar*, Dr. Murray Gell-Mann, Nobel Prize Laureate for physics, vindicates this standpoint: "What has always impressed me is the unity of human culture, with science being an important part. Even the distinction between nature and culture is not a sharp one; we human beings need to remember that we are part of nature. Specialization, although a necessary feature of our civilization, needs to be supplemented by integration of thinking across disciplines" (12).

Epistemic interconnectedness that we can also name "transdisciplinary approach of knowledge" has been attested to in physics and other areas of knowledge. For instance, cubism and the realms of sub-atomic particles seem to have nothing in common, but at a deeper level they share subtle links. Indeed, just as sub-atomic particles can be viewed in different aspects as particles or waves and exist at different locations at the same time (perspectivism through wave-particle duality and quantum entanglement), an object scrutinized by a cubist painter can be viewed differently and from several different angles (perspectivism). Perspectivism has been harbingered and summarized by Scholasticism in this axiom as: *Quidquid recipitur ad modum recipientis recipitur*, or "Whatever is perceived is perceived according to the view of the perceiver/how it is perceived by the perceiver." Cubism thus peeled off the layers of the mysteries enshrouding quantum physics. That is why Bohr acknowledged that Picasso and cubism factually helped him to decrypt and understand the arcana of quantum physics. Besides, cubism unquestionably proved the existence of the fourth dimension and other dimensions --usually the topic of physics - (see Picasso's painting of *Dora Maar*) and rejected the arrogance and "straitjacket" of positivism that stifled creativity in most epistemic areas. Surrealist painters also attested to the existence of a fourth-dimensional universe. De facto, Dali's painting of *Christus Hypercubus*, showing Christ crucified on a tesseract, an unraveled cube is a testimony of art viewed from the fourth dimension. Astrophysicist Dr. Michio Kaku gives the following

explanation in *Hyperspace*: “The shadow of a hypercube is a cube within a cube. If the hypercube is rotated in four dimensions, the cubes execute motions that appear impossible to our three-dimensional brains” (73). These instances clearly demonstrate that painting/art has illuminated physics. Other areas that actualize such interconnectedness are music, acoustics, and cymatics (branch of physics dealing with frequencies and vibrations). Here, again, music and physics do not seem related, but in-depth studies show that music can be utilized to treat diseases and traumas affecting the brain. Indeed, with specific vibratory frequencies, it can help in healing brain injuries by materializing a diligent and fascinating synergy between two epistemic fields: neuroscience and physics/cymatics. That was precisely what happened when Arizona Congresswoman Gabrielle Giffords was shot in the head by a gunman in January 2011. The bullet hit her brain causing a serious injury, but through a brilliant therapy combining surgery and music with specific frequencies, it became possible to cure her. Dr. Sanjay Gupta, a neurosurgeon and journalist at CNN, confirmed the procedure in an interview with Anderson Cooper. In a January 2011 interview, Dr. Gupta stated to Anderson Cooper, “Music can have an amazing effect on the brain. Just hearing or reminding sounds crossing from the left side of the brain to the right side can truly harness the brain.

Another cogent synergy between music and neurology that positively impacts the brain is achieved through a technique called “brainwave entrainment” or “brainwave synchronization,” a practice that aims to cause brainwave frequency to fall into a step with a periodic stimulus having a frequency corresponding to the intended brain-state (for example, to induce sleep), usually attempted with specialized software. The brain itself is a mass of muscles, that is, matter. Since sounds and appropriate frequencies can affect matter, music (essentially organized, rhythmic and coherent sounds) with relevant frequencies can affect the brain as well and any other form of matter. The most common instance of this causality principle (sound over matter) is demonstrated whenever soldiers prepare to cross a bridge. Prior to crossing it, they must stop marching rhythmically to reduce the intensity of the frequencies generated by their march (sound and vibration/frequency and its underlying energy). Failure to do so will cause the bridge to break and collapse. Nurtured by this observation and empirical verification, brilliant minds such as Nikola Tesla and Einstein stated: “If you need to find the secrets of the universe, think in terms of energy, frequency and vibration.”

Today, Superstring Theory, a new branch of physics, has successfully demonstrated that at the core of the universe we do not have atoms, but music, that is, vibrations, energy, and frequencies. Indeed, in his book *Beyond Einstein*, Dr. Kaku explains the Superstring Theory and demystifies the myth surrounding the universe:

“The universe is not made up of atoms, but tiny vibrating strings. The ultimate building blocks of nature consist of vibrating strings [...] the protons and neutrons in all matter, everything from our bodies to the farthest star, are ultimately made up of strings. Nobody has seen these strings because they are much too small to be observed. (They are about 100 billion billion times smaller than a proton.) The atoms and sub-atomic particles are but different harmonics of the superstring: hence the name “Superstring Theory.” (4-

5) He asserts: “This theory is the best candidate in the quest for the unification eminently sought to synergize the two major types of physics: relativity and quantum physics and will explain everything in the universe. Since these strings vibrate, they can generate music at specific frequencies. De facto, they gave birth to our universe and its sister because our universe was primarily a portion of another universe and made up of tiny vibrating strings, but it was very unstable and almost a bubble. Owing to the intense vibration of its strings and instability, it detached itself from the other and exploded (Big Bang).” (12). Such was the status of the pre-Big Bang universe. In *The Elegant Universe*, another astrophysicist, Dr. Brian Greene, validates music as the genesis of our universe. He acknowledges that it is fundamentally composed of very subtle tiny vibrating strings. We can extrapolate this fact to our own bodies because it is also composed of sub-atomic particles, which are essentially different harmonics of these tiny strings. De facto, our body can vibrate as well, and with adequate instruments, such vibration can be translated into music. Therefore, to a certain extent, we can consider that music as the source of the entire universe. It has thus been rediscovered, or reconfirmed, by the pioneers of the Superstring Theory. Pythagoras of Samos, a mathematician, astronomer, and musician (c. 570 – c. 495 BC) and Kepler, an astronomer (17th century), had already discovered it. The former and the latter were already cognizant of the music of spheres. According to Pythagoras’s biographer Iamblichus, Pythagoras (c. 570 – c. 495 BC) believed that planets move at different rates of motion, that they produce sounds, and that sounds vary according to the rate of motions. Because of the way these sounds relate to one another, they have a ratio that leads to the production of sublime harmony. Moreover, Pythagoras and his disciples found that a string stopped at specific fractions of its total length produces harmonious sounds. So, sounds are produced by matter and the universe. They have a mathematical quality and properties. They are really an expression of the divine. Consequently, we find a recurrent pattern in terms of the deep connections between music/vibrations/frequency, mathematics, physics, medicine, neuroscience, quantum physics, painting, and the universe.

Furthermore, since good poetry is fundamentally prosodic (rhythm, meter, imitative harmony, phonic mimologism), it is musical in its true essence. In actuality, poetry cannot exist without music because both are mutually inclusive. A good poem is necessarily endowed with musical qualities and can thus be set to music. Most of Mallarmé’s poems, for instance, were set to music by Debussy. All the symbolist poets (such as Verlaine, Mallarmé, Rimbaud, Rodenbach, Yeats, etc.) valorized music and regarded it as one of the major esthetic canons of their creative endeavor. In his *Art Poétique (Poetic Art)*, Verlaine declared, “de la musique avant toute chose [...]” (“music before everything [...]”). It can thus be inferred that poetry can coalesce with music and synergize with all the above-mentioned disciplines.

On the other hand, the distinction between art and science is spurious. De facto, when art complies with eminently rigorous criteria such as symmetry, higher order, coherence, mathematical accuracy, and lacks any form of randomness, then it becomes science. Similarly, when science complies with eminently rigorous criteria of refinement, complexity, and sophistication, then it becomes art. For instance, Picasso’s *Dora Maar*, Dali’s *Christus Hypercubus*, or

Leonardo da Vinci's *Last Supper* can be viewed either as art or science according to the criteria applied to these three masterpieces. Consequently, art and science are just two sides of the same coin whose combination can help us to comprehend and explain the arcana of the universe. They are truly complementary, not opposite. A common mistake is to oppose them.

Results/findings and discussion

In the light of these considerations, we realize that within the quest for truth there were divisions that did not enable researchers from most epistemic fields to materialize the outstanding leap that mankind deserves to assert its sovereignty over the universe. Each one was busy and singlehandedly working in his/her little area. It has been proven, repeatedly, and even ad nauseam that in the realms of human matters—knowledge not being an exception—division does not catalyze progress; it creates failure and chaos. It can even wreak havoc. This was the case in many areas, especially in physics. In his book *Beyond Einstein*, Dr. Kaku shows that in the course of history most physicists were confined in their small individual areas, and this state of affairs did not spark progress in physics. Einstein, for instance, rejected the field of quantum physics because of its subjectivity, unpredictability, uncertainty (see the uncertainty principle of Heisenberg (Impossibility to predict the place and velocity of an electron), and randomness (quantum entanglement/even if we separate entangled particles by billions of miles, changing one particle will induce a change in the others). He preferred the objective logic and coherence of relativity to the perspectivism, probabilism, and randomness inherently associated with quantum physics. Einstein confessed: “One cannot play dice with God.” As a result, he could not fulfill the dream of his life: to finalize the unified field theory. Today, it has been proven that quantum physics can be unified with relativity through superstring theory, which, according to renowned researchers, will likely hold the best promise to unify the four forces and explain everything in the universe. In a sub-chapter titled “Hostility toward Unification,” Dr. Kaku provides the rationale behind such hostility when he states the following:

Not unlike some professionals in other fields, when physicists have been laboring over a problem for years, they sometimes tend to be skeptical or even jealous of anyone who suddenly proposes the answer to the entire problem [...] this peculiar hostility comes from the unconscious tendency of most physicists who suffer from the mechanistic process of thinking often found among physicists in the West, which tries to understand the inner workings of an object by examining the mechanical motions of its individual parts [...] it blinds one from seeing the overall picture and noticing larger patterns. For decades, this mechanistic thinking prejudiced physicists against thinking in terms of unification. (105, *ibid.*)

There was a very interesting case regarding Einstein, the physicist, and Riemann, the mathematician. The former had almost built the field theory of gravity, but one piece of the puzzle was missing to formulate his theory coherently and cogently: rigorous mathematical formalism. Unfortunately, as genial as he was, he still did not have enough mathematical skills to decrypt this formalism. Surprisingly,

Riemann did have this mathematical talent and was about to decrypt the mystery of gravity, but he still did not have enough knowledge of physics to translate it from a purely mathematical concept to a solid theory nurtured by physics. Einstein spent three whole years endeavoring to find the underlying mathematical principle for the theory of gravity! He mailed a letter to a friend of his, mathematician Grossman, desperately asking him for help. He said: “Grossman, you must help me or else I'll go crazy!” Grossman did some library research and located the work of Riemann on “metric tensor,” which he showed to Einstein. Dr. Kaku reports this case in *Hyperspace*:

Grossman showed Einstein the work of Riemann and his metric tensor, which had been ignored by physicists for 60 years [...]. To his shock, Einstein found Riemann's celebrated 1854 lecture to be the key to the problem. He found that he could incorporate the entire body of Riemann's work in the reformulation of his principle. Almost line by line, the great work of Riemann found its true home in Einstein's principle of general relativity. This was Einstein's proudest piece of work, even more than his celebrated equation $E = MC^2$. The physical reinterpretation of Riemann's famous 1854 lecture is now called the general relativity, and Einstein's equations rank among the most profound ideas in scientific history. (93)

Through this outstanding synergy of three researchers: a physicist (Einstein) and two mathematicians (Grossman and Riemann), we clearly understand the unique advantage that undergirds the transdisciplinary approach of knowledge, a solid and tangible example of how one epistemic area (mathematics) can help solve problem in another (physics) and vice versa. That is precisely the type of epistemological paradigm mankind needs and deserves to achieve the level of progress designed to elevate it to a type I civilization. Unfortunately, this kind of approach was very rare in our last centuries.

In the other sciences there were also divisions. Mathematics, for instance, was cut off from the rest of the sciences. Being abstract by nature and detached from factual realities, it was predisposed to have a status of insularity. Some mathematicians even took delight in working on certain fields that were deemed never to be applied to the realms of physicality, as if they were functioning in a universe fraught with disincarnated platonic essences. Furthermore, they endeavored to refuse to grant to their research any form of applicability to the real world. This especially occurred in the nineteenth century. In *Beyond Einstein*, Dr. Kaku elaborates on this insularity:

“With the development of Lie groups, based entirely on abstract mathematical constructs, mathematicians thought they had finally discovered a branch of knowledge that had no practical use whatsoever for the physicists. (Apparently, some mathematicians delight in producing mathematics so pure that it has no practical application.” (102)

Accordingly, its status of isolation from other disciplines and proclivity to subscribe to sheer abstraction proved to be a recipe for failure in terms of pragmatical contribution to the advancement of progress

The field of medicine also failed to catalyze epistemic synergy. As a matter of fact, those who pursued Louis Pasteur's research could have worked in dynamic symbiosis

with physicists for an exhaustive and diligent study on entropy, for instance; with cellular biologists for a meticulous and diligent study on the mitochondria, the powerhouse cell; with dieticians for a cogent analysis of food and its impact on health; with musicians for designing how to master sounds, vibratory frequency of specific types of music and frequency and their impact on the brain (brainwave-entrainment), (the frequency 528 Hz and its role in repairing DNA, for example); with yogi and experts in meditation (e.g., the role of meditation and its ability to elevate the brain up to Delta waves state). New areas could have been integrated to maximize efficiency within the spectrum of knowledge: harmonization with nature by delving into the role of physical exercise, breathing, waves, frequencies, reflexotherapy, and magnetism in therapy.

It is noteworthy that man is structurally complex because he is both matter (Newtonian mechanics) and energy/frequency/waves/vibration/soul (Quantum mechanics). Modern medicine has failed because of its isolationism and reductionism as well. It has indeed reduced man to matter, an object, whereas he is also energy, frequency/waves/vibration, and soul. De facto, he is a whole. Therefore, futuristic medicine, holistic by essence, must take this wholeness into account to heal the patient. A sick man does not only suffer from a physical pain. Most of the time, such a pain is psychological by nature. When a man is overwhelmed by bills to pay, deadlines to meet, a stressful work environment, or the loss of a loved one to cope with, any or all these factors can severely jeopardize his health and should be taken into consideration to treat him. That is exactly where physics can help (through frequency, brainwave-entrainment) with cymatics, psychology, music, meditation, and relaxation among other adjuvants and epistemic areas. Unfortunately, such tremendous synergy was never considered. If it were, it could have led to reverse entropy or at least increase longevity by a few hundred years. Consequently, the quest for truth has been crippled by a reductionistic and monistic approach to knowledge climaxing into epistemic isolationism. It follows that the epistemological paradigm of our Aquarian age is holistic. It resides in a transdisciplinary approach of knowledge as the panacea that will factually spark our sovereignty over the universe. However, this paradigm will relish its golden letters if we build its five pillars: the critical reassessment of knowledge, prohibition of epistemic imperialism or bullyism, respect for every area of knowledge, heuristic humility coupled with open-mindedness, and funding of research.

I. Critical reassessment of knowledge

Some of the concepts and "facts" that were and are still taught in formal education through schools and universities should be reassessed rigorously because they are intrinsically false. Let us take but a few instances of these falsehoods: inert matter, empty space, speed of light, loss of memory, and Darwin's evolutionism.

Inert matter is not factually inert, that is, exempt of life, vitality, and motion. Matter is condensed energy and vice versa. The best illustration of this notion is in Einstein's equation: $E=MC^2$, which means matter (M) with appropriate speed (C = celerity, speed of light) can be converted into an astounding amount of energy (E) and vice versa. The fission of the nucleus of an atom (atomic mass-

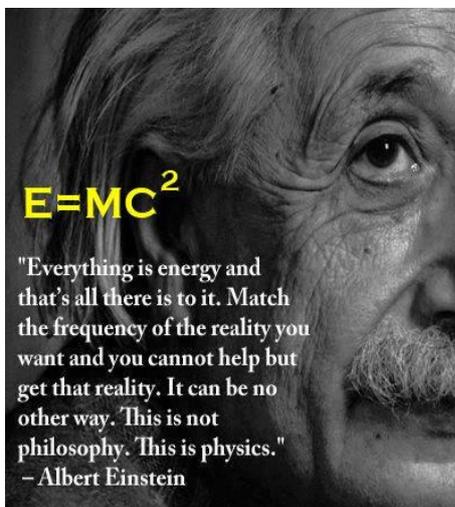
protons and neutrons) of uranium can release a tremendous amount of energy likely to destroy a whole city. Likewise, when the sub-atomic particles of rocks or stones are entangled, they exchange energy and produce electricity or fire. For example, if one constantly rubs two pieces of stones (matter), one against the other, at some point they will exchange their photons and generate electricity/fire (energy).

Empty space is not really empty. Indeed, it is full of energy and motion. Real scientists have demystified (and demythified) the very idea of empty space. For instance, Dr. Hal Puthoff, a brilliant scientist/theoretical, experimental physicist, and university professor, who also collaborated with NASA, states: "So-called empty space isn't really empty at all. It is actually full of energy. So, instead of being an empty lot, it's more like the froth at the base of a waterfall" (*Unacknowledged*, 62). Regarding zero-point energy that can be found in so-called empty space, quantum physicists assert: "The amount of energy in a cubic meter of space/time was ten to the 26th power joules per cubic meter. (10,000,000,000,000,000,000,000,000,000,00). That's enough energy in a coffee cup to boil all the oceans of the Earth completely away into ocean." (62) Brian Greene, another reliable scientist and physicist, and many others concur on demystifying this false notion.

The speed of light was known as the fastest thing in the universe. Einstein himself believed that nothing could exceed it, but nowadays convincing bona fide researchers acknowledge that Einstein was wrong because there are objects and energies endowed with a superluminal speed. Dr. George Sudarshan, a respected researcher from the University of Austin, has found out that sub-atomic particles called "tachyons" travel much faster than the speed of light. We are also cognizant that the speed of thought exceeds the speed of light. We can mentally teleport ourselves trillions of light years to an extremely far galaxy and be there right away with our thought. Since everything is relative, the speed of light can even be very slow. If a supercivilization needs to travel from Andromeda, our next-door neighbor galaxy, to the Milky Way, it will take 2.5 million light years to get here, that is, 2.5 million years if travelling at the speed of light. This can prove to be extremely slow. Therefore, they will need a few options: travelling excessively faster than the speed of light; creating a wormhole, a space-time short cut; distorting spacetime continuum around the spaceship with their mastery of gravity by creating a space-drive and arrive here expeditiously.

Memory loss is another false notion that has been spread through formal education. Memory, the faculty of remembering information (knowledge), can never be lost. Humans always have this faculty as well as the information embedded by it. The laws of modern physics tell us that information can never be lost. It is somewhere there, hidden in our cerebral circumvolutions and, more precisely, in the myriad cells of our hippocampus (the brain organ that controls memory), but we just do not know how to retrieve it. Still, we can retrieve it through associations because of the process of remembering functions through associations. If we associate an object X with an object Y that we forgot, then that association will trigger the remembrance of Y if it is performed meticulously. Those who teach foreign

languages are cognizant that one of the best ways to memorize new words is to use associations, that is, based on specific contexts (semantic field theory), not in isolation or in a vacuum. Additionally, matter houses information because matter is endowed with memory. A gift called psychometry, or vibroturgy, can measure the ability for certain people endowed with this faculty (psychometry) to attune with matter, that is, to be in harmonic frequency resonance or vibratory frequency with matter. Then, they become able to read it just the way we read a book. When they match the frequency of their brainwaves with those of matter, then they just decrypt or download all information contained in that piece of matter with their brain (the best computer). Einstein even testified to it when he stated, "Match the frequency of the reality you want, and you cannot help but get that reality. It can be no other way. This is not philosophy. This is physics." That reminds us of the principle of *harmonic frequency resonance* in physics. Therefore, a new docimology of traditional/formal education is necessary to meet the challenges of the twenty-first century.



Darwin's evolutionism is another misconception enhanced by our formal education. It posits that man as a species stems from the ape after a complex and gradual evolutionary process. If that theory is correct, a woman will first have a little monkey, then the monkey will gradually change into a little baby boy or girl. Another case scenario is that the foetus will, *ab initio*, be a monkey foetus, then overtime become a human foetus. None of these case scenarios happens though. Monkeys continue to be monkeys and humans continue to be humans. Additionally, one of the laws of Nature that provides our existence with logic, coherence, and rationality postulates: *Natura non facit saltum*, which means "Nature does not make any jump." De facto, when we reflect on the phenotype of both beings, the anatomy and physiology of man and that of the monkey, we realize that there is a big gap, just as there are differences. Such differences do not occur in Nature. If they do, that means Nature has no preestablished order, no coherence, let alone harmony. Therefore, Nature is not smart; it is disorganized since it has no intrinsic order and logic. It would follow, then, that God Himself has no sense of harmony, let alone logic because He is, essentially, Nature (*Deus sive Natura*/ "God or Nature"). It can thus be inferred that man and monkey are very different, and that is why

both of them follow their own respective paradigm of evolution with no cross link (men continue to be men, and monkeys continue to be monkeys). Consequently, these considerations show that evolutionism does not withstand scrutiny.

If we consider the immensity of the universe composed of trillions of galaxies, it becomes quite clear that we are not alone in it. Drake's equation (Drake is a scientist and astronomer who developed an equation to calculate and find the number of planets likely to be inhabited in our galaxy and he found millions in our galaxy alone) has confirmed that God is far from being a lazy entity! Similarly, it becomes plausible that there are other types of humans in the universe; they might be similar to us, morphologically and physiologically (other beings existing in the universe might also be dissimilar to us because diversity is one of the laws of the universe). It also becomes plausible that we, as human species, stem from other planets or galaxies, all over the universe. This theory called "panspermia" literally means "seed everywhere/all over." The Greek prefix "πᾶν" (pan) means "all/ everywhere", and the stem "σπέρμα" (sperma) refers to "seed". This theory was developed by an eminent scientist, Dr. Francis Crick, Nobel Prize Laureate for Biology, outlined in chapter 13 of his book *Life Itself, Its Origin and Nature*. It falls within the category of macroevolutionary progress, which requires completely new genes that differ from known predecessors by dozens to hundreds of essential nucleotides. In what is known as Strong Panspermia, the new genes must have been supplied from elsewhere (space). It is certainly the best testimony of our genesis because evolutionism does not provide us with the solution for our origin as a species. It is but one of these clichés passed down to us by formal education or educational systems and woven into our academic curricula in a kind of incoherent noetic ritualistic conditioning.

II. Prohibition of epistemic imperialism, or epistemic bullyism

When individuals become celebrities in the realms of the sciences, arts, or any other field, the aura of authority built around them by the other "experts" and media usually contributes to deify them. It becomes extremely difficult to challenge some of their ideas even if these ideas go against sheer logic, truth and commonsense. Accordingly, an exceptionally brilliant mind who has the misfortune of being unknown will never be validated as long as his/her research does not have the blessing of the celebrities and the parochialism of "experts." This phenomenon is truly epistemic bullyism and can be a lethal flaw to progress and the advancement of knowledge. The epistemic graveyard is sometimes full of victims of epistemic bullyism. Einstein barely escaped from it. Indeed, his papers on relativity were so powerful and sophisticated that the "authorities" of his time could not understand them. Moreover, he was unknown. These "authorities" believed that his papers were only the work of an intellectual charlatan, a pseudo-scientist treating himself with concepts woven into a very weird form of physics and using a proto-Sumerian language. Consequently, his papers were rejected, and he could not even find any job at universities. As a result, he was unemployed for a long time. Subsequently, he received the Nobel Prize for Physics, not for his work on relativity, his magnum opus, but for his much less refined work: The Photoelectric Effect. It took many years for the mainstream

physicists to vindicate his work on relativity. In the nineteenth century, another victim of epistemic imperialism, among many others, was a young French mathematician, Evariste Galois, a prodigy who conceived an eminently fascinating theory to solve problems in the field of mathematics called "Group Theory." It was so sophisticated that the "authorities" of the French Academy of Sciences could not understand it. Therefore, Galois was not admitted to the Ecole Polytechnique, a very prestigious institution of higher education in France. It was fifteen years after his death that the mainstream cenance of mathematicians finally acknowledged the exceptional genius of his theory. As these examples suggest, epistemic bullyism is a real threat to the advancement of knowledge.

III. Respect for every epistemic area

Some researchers look at others from other fields condescendingly and contemptuously. For instance, some consider poetry and poets useless. They have not yet understood that every epistemic area can contribute to the quest for truth. It can be found intuitively, discursively, or both. Genuine, bona fide poets are close to nature *stricto sensu* as a biosphere, and *lato sensu* as the manifestation of the "Isness", God. They are endowed with the ability to attune with Nature as the Isness, God. Through this medium, they become the channel by means of which the Isness reveals Himself. Accordingly, they acquire the ability to decrypt the truth intuitively instead of discursively, that is, through mediation, logic, or reasoning. What will take six months or six years to a mathematician or physicist to understand and comprehend by using long reasoning, analysis and experimentation might take but a few seconds or minutes for a poet/poetess to understand. Why? Because he/she has a direct and outstanding connection with Nature, the divine intuition which is precisely the best form of knowledge and acquisition of the truth. Plato regarded intuition as the fourth and most refined stage of a process called "dialectic ascension." It is the direct illumination of the soul by/with the Idea, that is, the truth, the absolute Essence. In Book 7 of *The Republic*, he taxonomizes the steps necessary for the acquisition of knowledge and truth. Step I is the simple sensitive impressions (the least perfect form of knowledge). Step II is the preestablished opinions (orthodox knowledge), step III is the discursive thought or discursion (through logic, reasoning, usually a lengthy and arduous endeavor-endless mathematical equations, or scientific analysis), and step IV is intuitive thought or intuition, which is the enlightenment or direct illumination with the perfect Essence. It is the paroxysmal form of knowledge beaming and stemming straight from the Absolute, without any mediation whatsoever. One of the most tangible cases of this exceptional connection with the Isness can be found through a phenomenon and faculty called "synesthesia," the ability to hear colors, taste shapes, see sounds, letters, and number in color (color grapheme synesthesia). Poets have been experiencing and being cognizant of this faculty for eons through intuition. It was only in the last quarter of the twentieth century, though, that scientists started understanding the true nature of synesthesia. In *The World As I See It*, Einstein confessed that he discovered his famous equation: $E=MC^2$ intuitively. We can surmise that, just like real poets, he attuned himself with the Absolute to come up with this equation. Besides, emotion is inherently associated with poetry and creative

imagination. It is not by sheer randomness that the etymology of the word "poetry" is "creation." The word "poetry" stems from the Greek verb ποιέω, poiein, which means "to create," that is, to use one's imagination to conceive and materialize something. Einstein once said, "Logic can take you from point A to point B, but imagination can take you everywhere." It follows that if poets can use imagination, it will therefore take them to the source of everything: the Isness, which will enable them to understand and decrypt/solve mysteries intuitively.

Moreover, reliable contemporary studies also show that poetry can help treat or alleviate the suffering of patients from certain brain traumas because when they read or do poetry, they are then involved in an innovative, unique, and fascinating kind of activity that harnesses their brains. According to credible research, when put into music, poetry can lead to miracles by triggering recoveries. Throughout the years, researchers have used functional MRI and other advanced diagnostic tools, such as Positron Emission Tomography (P.E.T.) to dissect how the human brain reacts to poetry. They have found that the brain is hardwired for poetry. It seems to recognize the different rhymes and rhythms that poets use and distinguish them from normal writing or speech. Researchers have also discovered that pondering poetic images along with the multifaceted meanings in poems stimulates different parts of the brain, parts that help us to decipher our everyday reality. Research suggests that reading or listening to poetry is useful for numerous things besides simply arousing our emotions and elevating our souls. The mental skills we exercise when we struggle to understand the plot of a movie, the mystery around an investigation or when we figure out the odds for winning a game are the same skills that help us navigate unpredictable occurrences and make better choices in our daily lives. These mental skills are flexible thinking and the ability to contemplate multiple meanings. If people read poetry and became accustomed to contemplating hidden meaning, analyzing its linguistic clues, their ability to think with more alertness about what they experience would be noticeably enhanced. Besides, certain Renaissance, symbolist (Baudelaire's, Mallarme's), and Negro-African poems (Cesaire's *Return to my Native Land*) are endowed with algorithmic patterns, which factually challenges and harnesses our brains when we read and try to decrypt them. Research also shows that poetry stimulates the brain in the same way as music does. It is triggered by the amygdalae, a brain structure of the limbic system that oversees emotion. It is prone to send you into a meta-reflective, memory-enabling state, particularly when reading poems that you love and are familiar with. Poetry also lights up the areas of the brain that concern memory and switch on when you are relaxing. This state is called the "poetry trance" and is close to the level of the mind in a deep form of meditation that elevates the brain to Delta waves area.

Finally, poetry can be viewed in different ways, but it is fundamentally an outstanding form of language, quasi-supernatural because of its ethereal origin, density, and its eminently refined formalism. Linguists characterize it as a meta-language, a language that transcends common language ("meta" in Greek means "beyond"), subsequently formalized by linguists and poets as well. True, bona fide poets can use the power of words to change the world and bridge the gap between the signifier (s) and the signified (s). That was the goal of symbolism as a poetic school inspired

by the concepts from Cratylus, one of Plato's teachers. He believed that such a goal can be achieved through a special type of language. Precisely, poetry is that language. It is apt to subsume such power since it also bears music and prosody (rhythm, sound, intonation). With these, we return to physics and frequency because sounds have vibratory frequencies. It follows that a meticulous choice of words (collision of words/poetic shocks) having specific types of sounds and frequencies can generate miracles. The best illustration of this power can be found in that of mantras. Let us remember Tesla's reflection: "If you need to find the secrets of the universe, think in terms of energy, frequency and vibration." Most sacred texts (Bible, Koran, Upanishads, Vedas, etc.) emphasize the power of words or the word. God used it to create the world. Genesis starts with "Ad principium verbum erat." ("In the beginning there was the word"). De facto, poets more than any other experts prove to be the very ones who can tap into the power of the words to produce amazing effects, to contribute to the advancement of knowledge and progress. It follows that every epistemic area deserves respect, validation, and recognition.

IV-Heuristic humility buttressed by open-mindedness

There are two types of researchers. Type I refers to all those who are confined to the gospel according to textbook X outside of which there is no salvation. These researchers can never contribute to the advancement of knowledge. Their field is psittacism, that is, the flawless maniac recitation and memorization of textbook X concepts with the inability to think by themselves to find their own way. These lyrical parrots would be intellectually destroyed if they were driven away from their little epistemic comfort zone. They strongly believe that knowledge is limited to textbook X, the alpha and omega of any quest for truth. Type II stands for all those who have the audacity to think outside the box by using the most scientific faculty to solve enigmas: imagination. Tesla and Einstein were among this type. In *The World as I see it*, the latter confessed: "Imagination is more important than knowledge [...] Logic can take you from point A to point B, but imagination will take you everywhere." Thus, we should encourage all the researchers who belong to type II because they are the real builders of the future, the golden age of knowledge. These researchers are also humble and open-minded, fully aware that we have not discovered everything yet, and continue to learn. Knowledge itself is constantly evolving, complying with a *natura naturans* perspective. Accordingly, when they are confronted with a new scientific theory, a new epistemological obstacle, they do not sweep it away from the noetic academic rug. They just adopt a posture that Egyptian and Greek scientists and thinkers used to call "epochê," that is, the suspension of the judgment. This posture is strategic, provisional, and lucid. It galvanizes a good researcher's epistemological curiosity and can be summarized thusly: Never deny or accept blindly but keep your mind open and continue to search until you find whether a new theory is valid or not. That posture is the very essence of heuristic humility and open-mindedness. We cannot claim to know everything. That is why we need to be open-minded and humble. Heuristic humility can even be a sign of genius since it coerces us to continue to search and come up with brilliant findings. As Einstein observed, "The genius is limited while human stupidity is unlimited. There are two infinities: the universe and human stupidity, but

human stupidity . . . I am not sure; it might even be more infinite than the universe."

V. Funding research

Funding is the last pillar of the transdisciplinary approach in the twenty-first century. We live in a world where funds are indispensable to many projects. Research is one of them. Money has been unquestionably emblematic of power and can open many doors. Still, we strongly believe that it should be used to serve noble ideals rather than be limited to purely materialistic needs. On our planet a few individuals are extremely wealthy and constitute an island of quasi-incommensurable assets within a vast ocean of poverty and misery. One of them can have a cornucopia of assets superior to that of several countries combined. All of us and especially those who are wealthy should subscribe to the philosophy of service to others (STO), a Promethean ethics (soulfulness and selflessness) rather than that of the service to self (STS), a Faustian ethics (soullessness and selfishness). Precisely, within a Promethean framework, it would be enthralling if the wealthy were willing to assist mankind by funding research so that our civilization can evolve from its present status to status I or higher.

Conclusion

All these considerations attest to the fact that the division within the community of researchers has prevented mankind from materializing the type of progress it deserves. Apart from a few exceptions, most researchers have been functioning from their little separate epistemic field. It follows that their epistemological paradigm was monistic and did not come to fruition because the approach taken was irrelevant. In the twenty-first century we need a synergy of researchers given that each area of knowledge can bring a highly significant contribution to the whole body of research. This does not mean that each researcher must know everything but should, at least, be a bit acquainted with other disciplines and work with other researchers in symbiosis, in harmonious teams. A college of experts committed to creating a unique future for the greater good is what we need in the twenty-first century. It can thus be inferred that epistemic unity through a transdisciplinary approach of knowledge is the ideal epistemological paradigm for our quest for truth. More and more minds are being driven by this paradigm, which undergirds the fact that we are on the right path despite the crises that affect Terra. One of the most powerful illustrations of this paradigm can be found in a very fascinating device called "Holographic Regenerating Medical Bed" with a holographic projector overhead. It is an enthralling symbiosis already existing on our planet. It is a form of therapy involving genetics, cellular biology, physics, cymatics, and technology conceived to regenerate and regrow an amputated limb and cure all diseases. Therapists use a blood sample to get your genetic code. A computer reads your DNA and forms a complete 3D copy of your body, with a very high cellular resolution, a perfect blueprint of your body. This computer is connected to a projector which looks like a camera with a big lens. This high resolution 3 D copy of your body is projected onto your amputated limb. Water, biological materials, basic proteins, amino acids are piped in to dramatically speed up the healing. Through a physics principle called *dominant harmonic frequency resonance*, your cells, fluids, and

biological materials conform molecularly to this 3D holographic projection. All this occurs as they are being piped in. Overtime, molecules, and cells reorganize themselves very fast and completely regrow the missing limb in four to five days! This is not science-fiction, but science fact! A former US Marine Corps Super Soldier captain gives an account of this medical technique on his website (see “Holographic Regenerating Medical Bed”). Another outstanding illustration of the transdisciplinary approach of knowledge has been attested to in France with Dr. Montagnier’s case. As a matter of fact, Dr. Montagnier, a scientist and Nobel Prize Laureate for Medicine, has been working in a team composed of a mathematician, Dr. Perron (DNA sequencing, mathematical analysis) and a university physicist (stationary waves and coherence domains). Their insightful symbiosis enables them to bridge gaps between biology, mathematics, and physics or, precisely, find out the latent connections between these fields. Dr. Montagnier has discovered a means by which one can perform DNA teleportation through water. He has found out that that water has memory (can carry the genetic code of a patient), which creates the possibility of healing with waves and frequencies instead of having recourse to surgery (form of therapy that gives good results but may also lead to tragic accidents and deaths usually due to cases of iatrogenesis (1)). Additionally, through “repeated sequences of DNA”, they have found a “redundant message” that needs to be decrypted. The genius who will decrypt it will provide the solution regarding how to help regenerate organs, make a liver, heart, etc... Consequently, adopting the transdisciplinary paradigm of knowledge is a noble decision since it will factually enable us to sublimate nature by harvesting happiness and eradicating misery and poverty on earth. Then, we will walk on our planet but dine in the stars and soar *sub specie aeternitatis*.

Notes

1. Iatrogenesis: stems from the Greek “iatros” meaning “healer”, and the word “genesis”: “origin”. The word “iatrogenesis” refers to a death or accident caused by the doctor, not by the disease itself. *The Biology of Belief*, a cogent book written by a brilliant researcher, Dr. Bruce Lipton, substantiates the recurrent pattern of iatrogenic deaths in the US. In it he says: “When a healing profession works in agreement with science and nature, then it becomes a benefit to the patient; when it does not, it becomes detrimental to him/her.” He adds numbers: “seven hundred and eighty-four thousand people die every year (784000) not from the disease, but from the treatment of the disease” (#1), followed by cardiovascular diseases (#2), and cancer (#3). (Lipton Bruce, 7). It may be due to several causes:

- side effects of possible drug interactions;
- medical errors;
- extreme negligence;
- use of contaminated instruments;
- anxiety or annoyance in the patient, physician or treatment provider in relation to medical procedures or treatments;
- unnecessary medical treatment resulting from a physician's decision; we can add this:
- lack of creative imagination resulting from the inability to think outside the box (inability to think beyond what was taught by textbooks and professors at medical

schools as if textbooks and professors had a monopoly of the absolute);

- reductionism: inability to consider the patient as a complex and sophisticated whole, that is, matter (Newtonian mechanics) and energy (Quantum mechanics: frequency, waves, vibration, and soul), but only as matter, object that can be broken into bits and pieces (Newtonian mechanics) and a merchandise through which one makes a lot of money; Soullessness of certain physicians in their unwillingness to regard patients as human beings entitled to dignity, respect, and attention even if they do not have medical coverage, attitude leading to recklessness and contempt in the way they treat them as if some were precious merchandises because they have medical coverage, and other were not because they do not have it

2. Taxonomy of civilizations in the universe by Nikolai Kardashev pp. 277-278 in Kaku’s book *Hyperspace* – chapter titled “Masters of Hyperspace”

Type I Civilization

The one that controls the energy resources of an entire planet. This civilization can control the weather, prevent earthquakes, mine deep in the earth’s crust, and harvest the oceans. This civilization has already completed the exploration of its solar system. We can consider that it has mastered the cure of all the diseases or even eliminated them.

Type II Civilization

The one that controls the power of the sun itself. This does not mean passively harnessing solar energy; this civilization mines the sun. The energy needs of this civilization are so large that it directly consumes the power of the sun to drive its machines. This civilization will begin the colonization of local star systems.

Type III Civilization

The one that controls the power of an entire galaxy. For a power source, it harnesses the power of billions of star systems. It has probably mastered Einstein’s equations and can manipulate space-time at will.

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