

LIVING IN THE SHADOWS OF THE SUN: REALITIES, PERILS ESCAPADES MAN, PLANET AND KARDASHEV SCALE.MAKING THE GREAT TRANSITION

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DEDICATION

In memory of Nelson Mandela. Whose Freedom struggle, revealed the beauty of harmonious human existence.

Taking care of our planet, our environment is something like taking care of our own home. This Blue Planet is our only home- Dalai Lama

INTRODUCTION

In as much as humanity would like to steer the future. The idea noble, and highly plausible can be elusive a concept. Optimism should be fitted into the picture a tinge of pessimism, should garnish the offering to be achievable The proverbial glassful of water as half empty knowing very well its half full, half full when we know its half empty. This paradox enables us to always be on our feet up to something positive guided by hope. Before we embark we ask. What is humanity? What is the future? What is the universe? And our place in it? Which of our obligation in nature should not be deluded by our aggressive conquest? Utterly useless, futile, like furnishing a house whose rooms you know not. It's on that note we answer these questions. The rest lies within.

SECRETS OF THE UNIVERSE

In Astronomy, the telescope is an indispensable optical tool. The refractor when used to view the cosmos magnifies the large scale of the physical universe, reversed – the same telescope suffices as a compound microscope, observes the miniature world in detail. With modern reincarnations, of the concept radio/space telescopes-SKA Hubble. The most powerful microscope to date is the LHC, all we perceive lies in between .These views combined give us undue views of the universe. The physics theory in a Quantum string theory, in particular the gem in the Tiara, M-Theory, describe phenomena complex as nature. Generalizations have been crafted that fit everything including man, planet and its star. It. Our ancestors looked into the skies astronomically and used metaphysics to maneuver their civilizations. Human existence is primarily hinged unto the universe. Understanding metaphysical laws, invoking them practically enhanced sustainable technological advancement. Some ancient societies neglected nature leading to extinction evidenced in the ruins left behind-the Pyramids in Sudan, Egypt & Mayas, leaving in their wake vast man-made deserts. Our current civilization if unbalanced with nature is not exempt.

PHYSICS AFTER THE HIGGS

Physics has leaped 20th Century theoretical physics put forth the Higgs Boson, detected at CERN'S LHC. 20th Century theoretical physics too came across a 21st century venture which describes the universe in detail. Has an anthropic principle within. Ed Witten of Princeton in 1995 described a theory called M-theory the theory is 21st Century physics that had fallen by chance into 20th century view. With advancing technology, Theoretical physicists in the field

can be said to be just horsing around saying it's un-testable, with the cosmos- the largest lab already done so. Though rigid laws of physics have high degrees of freedom if perturbed within the Physical constants nature puts forth. M-Theory is ready to reveal. With a solution in geometry lying unnoticed right under our noses.

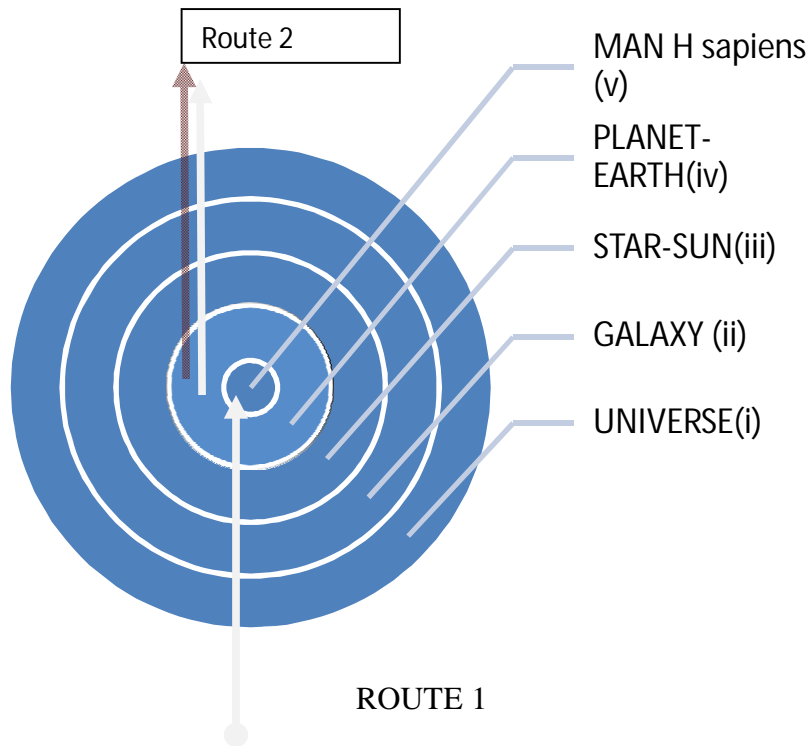
M-Theory works in eleven dimensions, in these the universe is made up of 10^{500} unique Quantum mathematical spaces. We only see $10^0 = 1$ of these due to the processing output of our brain-that is the world we inhabit, a complex mathematical setting down computed by the brain to Biological perception of our five senses, to make life easier. The M in M-Theory may also stand for man, as the theory highly uses anthropic selection in a Quantum scenario, bringing out a highly refined anthropic theory, even Medicine, a fundamental base for analytical evaluation of all complex biological processes at the Quantum level. M-Theory solves complexity in natural 'tight corners' where Ockham razor riddles persist.

THE NUMBER ELEVEN –PHYSICS OF THE 11th DIMENSION

Eleven appears in Newton's Gravitational constant abbreviated $G = 6.672 \times 10^{-11} \text{N/M/K}^2$ as a superscript, Gravity is very important in cosmology. The planet's star- The sun has an eleven year sunspot cycle, a 220 million year cosmic orbit (note 220 is a multiple of 11) about its galactic core. The Great Man Jesus lives up to 33 years His ministry lasts 3 years -one 11th of his life. Initially he had 12 male apostles, at the time of resurrection- They are 11. In climatology the net induced natural temperature by desired levels of green houses, is 33°C -33 is a 3rd multiple of eleven. Nature/universe too is eleven dimensional.

From M-Theory the conclusion holds, the universe and all existences are one large cycle, - a circle, this calls for a moderate lifestyle in-sync to this reality. The universe is self sustaining eternally converts -interconvert's, matter energy and Quantum information. With the second law of thermodynamics bringing out its attribute. It was not created neither can it be destroyed. M-Theory isn't just calculus. A physicist working on it delves into vast applied multi-disciplines in Maths, Biology, Chemistry, and Geography. If any or all of Clarkes three laws of prediction holds. Then in The Grand Design 2010 Stephen Hawking and Mlodinow. Place a high bet on M-Theory as the only fundamental description of the universe. Using available physics M- Theory helps humans draw technical details of universe hence tabulate plans to maneuver within it, Prominent Cosmologists too give credence to the theory. The universe is fully Quantum mechanical,. Explored through the scope of the Big-Bang model, skimpy, has scant detail. The Big- Bang theory though modest, through inflation can only show us only an interconversion process, never a birth Together with all other nascent theories by men violates the 2nd fundamental law of Thermodynamics lurid dream, materialistic even the most graphic accounts have nothing to describe had the universe had not always existed. The reality was not created neither can it be destroyed, within confines of physical law, all else emanates. The universe stands unfazed.

If tuning a radio, the hissing (white noise) background. A large chunk of that comes from the universe. This in M-Theory is the entropy of the M-Brane at 2.73 K hypothetically on a 0-9 metric scale, its peak at 3K.



The arrows dictate energy flow it is easier to use route 1 than route 2 due to entropy. It's logical for lower members e.g. iii to use energy from higher members e.g. ii, directly/indirectly to power needs not vice versa.

WHAT IS HUMANITY ?

Humanity is the totality of biological existence of the Hominin Species *Homo sapiens sapiens*, Life is the sustained display of displacement of any existence about its mean position, evidenced by flow of matter, energy or Quantum information. Cosmic fluctuations to ionization any existence having an 'excited' state has life, spontaneously generated by the universe and occupying unique bands in the spectra called life . Man did not evolve from apes, for by now the apes would've invented fire. Man is primary to the planet and co-existed alongside all other Hominids species, outliving them. Man use speech to communicate ideas internally. The male is called man, female is woman, female has a higher pitched voice than the male due to anatomical configuration of the vocal chords, when generating speech. Ideas are thought patterns generated by its brain enabling man relate to others and nature enhancing a species survival in its Biome. Transmission of ideas necessitate need for vocal framework called language. Speech mediated its , brain further conjures these ideas, rhythmically to create music

Living on a planet in orbit around a star called the sun. The star 'calls the shots' on the planet. Man is an entity in the Kingdom Animalia. The planet & contents is a progeny of the sun. So is the entire solar system .The star is a nuclear reactor using fusion/fission processes to power itself from within its core. All in gravitational orbit around the star is made up of these products of a nuclear reaction all elements in the periodic table, are made in the sun. The solar system makes up a meager 0.002% of the 'suns' mass. A whopping 99.098% a –credit goes to the sun. One astronomical unit away from us .It's indecent to say” we are not part of the sun.” if mass, were

anything to go this is sheer denial. Like having a hair on your head refute the claim that is a part of you. All processes 'mimic the sun' in synthesizing copies of their species. Biology employs meiosis and mitosis in both sexual and asexual reproduction. Analogous to the nuclear chain reaction in the sun where Hydrogen is split/fused into complex elements. The female of *H.sapiens* is responsible for replication. Having an oestral cycle coinciding with the orbital period of satellite called the moon, Fertilization is internal. Occurring in a cavity called a womb, akin to a chain reactor biological processes involving gamete formation to fusion with male gametes, cell organization, differentiation and specialization take place. In 7-9 months, the young one is introduced into the planet by its mother. Man is a social animal, the basic social unit is called a family, and parental care to juveniles is norm. Lately inter-species social mesmerisms (memes) have gradually depleted moral ethics of the species at the basic level- The nuclear family endangering life in the Biosphere

AFRICA,ORIGIN, CONFLUENCE OF A TRANSCONTINENTAL SPECIES PALEOANTHROPOLOGY & CONTINENTAL DRIFT

Before Pangaea, all the earth's land mass sat centrally like the iris in the pupil of the eye, Within the land mass were all life forms existent today. Man originated from Eastern Africa. In the highlands about Ethiopia, Mt. Kenya and Mt. Meru. These high lying equatorial areas offered security-vantage views, ambient climate, and provided abundant food needed for species perpetuation. As continents drifted they did so with all life forms within. Cutting off some populations. As numbers grew conflict migrations were norm. Walking over rugged terrain was tedious & inefficient. Travelling inside River & rift valleys solved this in transit until they found a place for settlement. Others moved along the coastlines. The species used either or all these routes to move on the planet then. The Great Rift Valley & River valleys like Nile basin via the Sinai Peninsula gave transit routes into and out of Africa, Interconnecting Africa to Eurasia. Man is homeostatic via skin, the 39th edition of Gray's Anatomy says 'The skin forms a self renewing interface between the body and its environment, a major site for intercommunication between the two. Warm blooded, heat loss or heat gain to environment above 37°C, to compensate migration, mitigate irradiative heat loss/gain, moving to Higher latitudes-cooler areas mutated phenotypically, man got a light skin to reduce heat loss, Tropical men are darker - darker bodies lose heat as fast as they gain it). As chameleon adapts to color, so does *H.sapiens* change to thermals. This explains the diversity in skin hue and tone amongst the species. The migratory hominins interbred with other Hominid subspecies in the new geographical regions creating diversity. Genetically all man is a version of the African species. Man is omnivorous Man is an Apex predator and relates to Biomass to satisfy nutritional requirements. Diurnal has a circadian clock to regulating sleep/wake cycles in sync with sunrise /sunset. Each morning the planet is lit by sunrise over the Eastern horizon. Early man revered the vigor and vitality it bestowed on life. Man invented means of relating to this reality and everything else above, facing East by morning, reverence and awe bred Theism in all scents and flavors, bearing deities whose grandeur man related to what was considered biggest in his limited view of nature. When theism met societies was viral, personally real in large scale due to diverse ideas-opiate.

Polarizing ,source of separation, intolerance and disconnect with reality, providing unwarranted psycho-social support, a leap before you look philosophy. Inflicting psychological trauma& fear, a concept reverse-engineered to inflict pain.

MORAL-ETHICAL VALUES TO UPHOLD

Never kill curiosity, it precedes necessity as the mother of invention. Inventions not bent on destruction to satisfy greed. The future has no room for such characters. A large part of the early 21st century sees collapse of such social structures, no matter their size; they are self annihilating and should harbor no blame for their implosion. Violence in all forms is not the resolution, silent exits- the only means out. Governance will not be about oversight but foresight. With more of men inhabiting same Geo- political regions, demands grow, Systems must intelligently compensate to such effects efficiently. Mandela taught us we are all one. Acceptance of the diversity of Humanity, Truth, Justice, Forgiveness & reconciliation for the basis of our moral-ethical social fabric. Ideals so revered in Traditional African Society. Diversity should not be abused to satisfy greed and ill advised conquest. We must learn from the past, live for the future. Abdicating negative social mannerisms, and ideals employed by ancient localized societies that are hollow & fanatical. Confucius (552-479BC) said “Never do to others what you would not like them to do to you.” A good Man said Confucius “does not worry if his goodness is not noticed, he is more concerned with seeing Goodness in other people. Buddha (560-480 BC) in his Eightfold way stresses the need for Rightness. Right means ethical. Jesus (1 CE) says “love your neighbor as you love yourself.” He lays down love as the cardinal concept of positive (fruitful) human existence. If we thought along the wise words of these Great men adopting ideas personally, All of our social woes will be fully solved or on their way to a solution. We should think about not what society can put into us, but what benefit we put into society as individuals.

THE POTENCY OF THE HUMAN BRAIN & NATURE

Humanity is a stage of existence in the universe, it's prone to technological advancement. Enhancing a species conquest of nature, sometimes the species does this irresponsibly, eating too much into nature if we insult nature she fights back. A gentle treatment extended to nature is likewise returned favorably to the benefit of man if conquest of the universe is our eventual goal. We must first 'secure' our home planet Earth. In nature all life forms interdependently rely on one another Making the grand ensemble. Man is not exempt from the bee, plankton to even a burrowing worm-whose presence we underestimate, play an unequivocal role in physiology of our biosphere. Their absence would impart negatively on human life increasing the risk of extinction. To conquer the universe, we must first conquer our inner self. The most powerful tool nature has granted us is the brain. Abject misuse, disuse or both of this potent resource has put us at crossroads with the Biosphere. Overcoming ourselves is pacification of the ego. We are not masters, nor slaves of nature Nature has everything we can ever need to the benefit of all The Panacea to all our problems; which ironically we are so adept at creating and escalating

THE FUTURE – PROSPECTS, PROSPERITY

No one saves us but ourselves . No one can and no one may we ourselves must walk the path. – BUDDHA

The future lies in our hands; the future is the next moment we dread extinction. In a self sustaining planet the greatest threat to human existence is not a strike by an asteroid, but the human species itself, fond of self inflicting casualties & undue peril to other life. With a clear mind we can take on the climate change, taking the negative effects, eliminating and turning them around into avenues of prosperity for all life. Achieving the goal-Clean healthy planet, and intelligently move higher up the Kardashev scale with minimal risk of extinction inexpensively. Using science .A higher population means a bigger workforce in achieving this.

THE POWER OF INFORMAL-FORMAL SECTOR HARMONISATION

An anthropocene period calls a clear cut balance discarding social notions of formal and informal economies/education. These are mesmerisms that are psychologically employed to condition society, they lock out extremely useful talent that requires very little empowerment to achieve futuristic progress. It is wild to contemplate the fact that one of the greatest 20th century inventions came from the informal sector. Wilbur and Orrville Wright in 1903 were bicycle repairers whose dream forever changed human history through aviation. The computer was once gigantic lab contraption. Members of the informal intellectual sector adapted it for humans starting Microsoft and Apple, these humble men have virtually put the computer in everyone's pockets resorting to increased computing power for the entire human race. Harmonizing informal education/economies with formal ones remains key for effective harnessing of human capital. With the world more connected via the web education from well defined sources should disseminate knowledge to help humanity tackle problems interlinking global focus with local action and global action with local focus I call it "The Galapagos island effect." If a local model flops, the large scale outfit is not prone to effects as such, converse is true. Using the ecology to produce goods and services(eco-communalism) in nature there is no formal or informal, end justifies the means, nothing as a formal/informal life. Life is simply put existence. Any system not intent on adopting the informal sectors is just "clipping its own wings."

HOMOSAPIENS, PLANET & KARDASHEV SCALE

Wikipedia defines the Kardashev as a hypothetical method of measuring civilizations, level of technological advancement on 3 levels- type i,ii and iii.we live in the cosmos. Our beautiful blue planet is a natural spaceship in universe. In this bubble self sustaining fluid cycles involving The Hydrological, carbon and Nitrogen cycles keep us alive using energy from a perfectly spherical G2V star to power life the universe is mostly made up of Dark matter/energy of late Dark matter has been found to peak on earth every March-lets see how the story unfolds. Space is the final frontier of the future. Our spaceship planet is part of space-time. It so follows that we are part and parcel of the future and the future is always with us. Whose control is ours to gain or

lose ?On the Kardashev energy scale we currently lie as a Type I civilization .With higher population the full transition to a type ii is inevitable and in the offing. On the civilization scale the extension put forth by John .D. Barrow to me holds water, currently we are moving from Type IV minus to Type Omega-minus (manipulating the basic structure of space-time).After studying the entire page on Wikipedia all variation postulated on the Kardashev scale(http://en.wikipedia.org/wiki/Kardashev_scale) Resonates to Planetary boundaries. Futuristic scenarios put forth by Dr. Kaku, Dyson, Penrose ,Sagan, and Tipler ,Presently been by nature without our knowledge. The Earth ecology snugly fits the Gaia hypothesis. The finiteness of a planetary system has its ecological limits it's easy to discern that increase in quantity of human population has led to a decline in the species individual life quality. With quantity compromising quality we should rethink the art of making babies, using resources available and their holding capacities as criterion. Minding a prosperous future of one's offspring, it's an abuse of the gift of Procreation to irresponsibly think of filling the planet. A temporal spacing of the gap between parents and offspring is vital .Life is genealogical succession in an infinite chain - cycle of existence. The planet has a peak holding capacity of every Biological population, which if it spirals out of hand it intelligently controls using the fluid cycles, though a nasty experience, Earth has a peak of 11 Billion *H.sapiens*

MOVING INTO THE FUTURE

Facing challenges being accelerated by population growth humanity needs to positively align ourselves with nature, using science we can harness opportunities created by climate change to restore order and intelligently turn around our destiny. The energy transition from type I to ii comes with immense benefits for all .This idea adopts, embraces & accounts ,concepts,concerns,work & findings of the Global scenario group, Planetary phase of civilization, Climate change, Planetary boundaries. Within these bounds I invoke the Kardashev scale on a cosmic footing to mend the current mess.

THE FEASIBILITY OF THE KARDASHER SCALE DRAWING ENERGY FROM A STAR

We are a type (i) transiting to type ii civilization. In fiction a typical type(i)civilization is able to control weather, in the fiction book-Gears of War, Humans of Sera are type i using Adaptive Atmosphere manipulator to generate hurricanes. Back home climate change on earth is caused by anthropocene activities. *H.sapiens s* like the fictional humans of Sera is thus capable of Climate manipulation. By using a type I method-Harnessing renewable energy, converting insolation to other forms of energy. Using a man made structure to coat the surface & capture energy. This by artificial increase of Green Biomass-Plants. They use Photosynthesis & effectively convert sunlight to palatable energy forms. With this we are a type ii civilization using a method- drawing energy from stars.

THE DYSON SPHERE/SWARM-Type ii method.

Earth lies in a Dyson sphere -Heliopause). The solar system (excluding the sun) is a Dyson swarm having gravitationally stable orbits. All planets in the solar system, individually are energy collecting surfaces in orbit around the sun meant to enclose a sun completely and capture

most or all of its energy output. In the near future a type iii method is very probable bearing in mind the proximity of other class G2V stars and the Non- Keplerian orbit of sun around our galactic core. In the Dyson swarm each of the planets use natural means to draw solar energy to satisfy their needs. Earth uses green Biomass to capture and convert solar energy (insolation) to other forms. Earth employs Plankton in sea and plants on land. The sea (water) surface increase effective area ,for growth of Plankton-A Big solar panel .We have made our beautiful planet sick, this has made us ill Hippocrates described Epidemiology in terms of a species environment. He put that the ailment of an individual is a replica of its environment. A clean environment means healthy inhabits. A lot of talking has been done, the walking minimal. We need to develop a global Climate blueprint for the next 100 years. Employing natural processes to hasten the venture converting the scum we have created into use. Green Biomass nurture life and balance the Hydrogen, carbon Nitrogen cycle.

CLIMATE CHANGE AND THE SOLUTION

Abrupt global warming / cooling is mainly caused by water vapor 36-70%, CO₂, 9-26%, CH₄ 4-9%, O₃ 3-7%, accelerated rise is due to human activities By not replacing, gaseous oxides of Hydrogen, Carbon and Nitrogen back in their sources as fast as we exploit them, they end up in the Atmosphere creating a 'greenhouse' effect to micro climates. Wind & water currents are fluid patterns moving from High (cool) to Low pressure (warm) regions .Green house effect make pressure gradient between low and high pressure regions larger warming the low pressure regions and cooling high pressure. Making fluid (mechanics) intense-Higher velocities (gusts these mete untold grief, such was the case in the recent Typhoon Haiyan. Presently we are experiencing a Maunder minimum (lowest solar sunspot activity) Note how sensitive our planet is to feeble solar energy variations of the order -0.05 – 0.1 % to surface temperatures on planet. Last experienced in the 17th century in the higher latitudes -“a little ice age.” With Green house gases having a 'lensing' effect winters get colder, summer hotter. Human culture in the 21st century will be determined by Global climate trend effects.

FORGING ON

The global climate model is self sustaining. Pine island glacier a large ice stream is proof to this. Nature entirely or in bits can remedy such threats itself. The greatest risk is warming in seas, causing glaciation due to high CO₂ ,unchecked melting glaciers may abruptly release CH₄ they'd safely locked within in the past. CH₄ a product of digestion in ruminants, its high levels in ice sheets/permafrost tell the story of planet once highly populated by such animals. Abrupt release of CH₄ is catastrophic, unchecked present CO₂ levels at 400 ppm – highest ever in 4.5 million years, projected levels at 541-970ppm by 2100, Lowering PH levels below Biological optimums, cell physiology is severely impaired or impaled. It is said “Mundu mugi ,ndamiaga kiraro.” Translated it means a wise man does not soil his habitat. High levels of green houses gases are waste products of our lifestyles, toxic, they've upset our Biosphere, time to act is now or else we have other planets- (Venus & mars) as models to tell our fate. The planet at present is a greenhouse; the ugliness can be converted to beauty. With ecology -A natural resource, the 7+ Billion hands (human capital) can positively and effectively turn round the climatic scenario

and its adverse effects. Increasing terrestrial green Biomass is the only way out. In a natural system, chipping in one cycle has a domino effect on all others. Using(greens) to tune the carbon cycle lowers CO₂ signature. Feedback mechanisms in the ecosystem also help us control all other cycles effortlessly. With immense payback services, the ecology gives back much more than expected. Plants participate in the Hydrological, carbon Nitrogen and more cycles so modify microclimates intelligently and on a large scale the macro (Global) climate, putting to decent levels all environmental challenges. Green Biomass occupies the Producer level in ecosystem, we get more food, create suitable Biomes enhance diversity. Increasing terrestrial green cover eases stress on ocean systems ,reduce warming ,acidification and polar glaciation. Having two as opposed to one carbon sink is very efficient. The green Biomass cover needs to be permanent-all year round .Adopting such methodologies calls for reduction in nocturnal activities, for man is naturally diurnal. While plants clean up gases we generate by day- During photosynthesis plants require CO₂ giving us O₂ .Programmed by nature, at night they require O₂ giving out CO₂ as we sleep. It is polite to reciprocate the kind gesture by resuming high CO₂ generating activities by day break ,avoiding high CO₂ generating activities at night, eliminating unnecessary competition for respiratory gases. The greatest gift we can bestow upon our offspring is a clean, beautiful planet. Transforming the planet Earth into a heavenly abode where all life exists resiliently beneath the shadows of the sun.

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