

Sarva Vidya

The Essence of Everything

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What is the ultimate goal of human life? What is the ultimate truth of all existence? The answers lie in a single source - the highest point human thinking and consciousness has ever reached. This is Advaita Vedanta. This is the universal truth for all of humanity.

A complete understanding of our universe - of our experience in its entirety, can be obtained, starting from Advaita, which is called Prajnana, into the knowledge of our universe, called Vijnana, which itself has multiple levers - physical, biological, social etc. This flow of wisdom is the focus of this article, and is explained in the following way. This article is a composite of multiple articles published separately earlier, but now joined as a unit, since each aspect seems to be seamlessly interconnected with every other aspect.

The stages of wisdom and creation are as follows, explained in the context of Bhuvanas:

Parabrahman: The starting point is fundamental consciousness - Atman or Parabrahman or God in Advaita. Just as a dreamer creates a dream world, Atman creates the universe, whereby the universe is as unreal as a dream.

Satya Loka: The first step is to create an escape route - a path for to-be created beings to get out of illusory world called "Maya" back to truth. This path, is the spiritual path, consisting of 16 stages.

Tapa Loka: The Spiritual Path is nothing but changes in one's mindset and perspective as one gradually aligns himself with the truth. These are described as the 16 dichotomies and personality types of the MBTI theory. One then sees clustering of certain MBTI factors, into groups - described by shapes such as triangles and axes. This is the birth of "hypernumbers". Hypernumbers comprise the entire possibility space of the mind, which includes not just physical universe, but also dream, art, fiction, fantasy. It is not restricted by laws of nature or physics or logic, since these aren't created yet. Hypernumbers formed by the MBTI give shapes. One such geometrical shape is the Sri Yantra, formed by nine interlocking triangles.

Jana Loka: As the next stage, the components in the Sri Yantra acquire meaning - on a conceptual level. These are restricted by logic, yet unbound by limitations of space and time. These Concepts define various events, things and incidents in the universe, on a functional level.

Mahar Loka: Arising from Sri Yantra are nine Avaranas or enclosures. These Avaranas give rise to numbers. Functionally, numbers are similar to hypernumbers - all mathematical operations

are possible just as in hypernumbers. The only difference is that numbers have a narrower and more restricted possibility space than hypernumbers. Thus, unlike hypernumbers, numbers describe only physical universe, and not dreams, art, fantasy etc. The 2D shape unravels itself into the E8 shape - the largest simple exceptional Lie Group; ie smooth structure that displays perfection and symmetry, even when rotated or reflected in multiple ways. The 8 dimensional E8 is the largest such shape that can be formed ever. The E8 and Sri Yantra are 8D and 2D views of the same shape.

Swar Loka: The E8 structure now assumes meaning. Particularly, the 8 dimensions are now seen as fundamental charges. All this occurs in an informational space, not physical. The 8 Charges are referred to in Vedic wisdom as the Vasus. Next, the E8 assumes physical form, Particularly, the fundamental consciousness manifests as primordial vibration, called Omkara - this is the universal wavefunction of quantum mechanics, described in probability space. There are 3 components of Om, and these are chaotic signals which act as qubits, which have 8 states. These 3 qubits entangle their 8 states in various ways to give the 240 generators of the E8. Thus, the geometric E8 is now transformed into the primordial signal, which is a weighted composite of the 240 generators. Physical creation starts when the weights corresponding to Higgs Field are made non-zero. This breaks the symmetry of the E8 group; gravity starts behaving differently than other forces, and space-time is born. The universe is created as this big bang. The new-born universe rapidly inflates and becomes huge, all the while new subatomic particles created from the composite signal. These further create ions and atoms, and the fundamental states of matter, including Dark Matter and Dark Energy, are all brought into existence, culminating with creation of stars, planets and solar systems. These epochs of creation are referred to in Vedas as the 11 Rudras. The physical realm of atoms gives rise to chemical reactions forming larger atoms and molecules, and continuing thus, forming biochemical macromolecules such as the RNA. These are capable of dual functionalities of sustenance and signaling - alert and responsive to sources of nutrition and threat, capable of perceiving and processing information regarding sources of nutrition etc. This gives rise to Life, and the sustenance-signaling duality is described by the 2 Ashvinis. In the created stage, the universe is seen in all its diversity and variety. In order to comprehend this, the universe, as seen by us as the sky from earth is divided into 12 regions, with the stars, galaxies and constellations of each region contributing to its unique characteristic nature. These 12 divisions are called the 12 Adityas, and through their energies create a "vision statement" containing the objectives of Dharma, Artha, Kama and Moksha, toward which life on Earth must evolve so that a species capable of these ie human beings, may reach the ultimate spiritual goal.

Bhuvar Loka: The next stage of creation is the biological system. This is a template, following which an organism will function and evolve. This is the basis for the genetic code. This template is nothing but the Brahmanda described by Avaranas earlier represented now as Pindandas or biological systems such as respiratory, digestive etc. With this basis in place, the next step is the genetic code. With a basic set of 4 nucleotides, the RNA and by extension DNA builds into itself a long chain of nucleotides, which in their sequences contain the genetic code - the program written into each cell of an organism. Largely, the genetic code contains 50 components, forming noncoding part of DNA, which binds proteins together, positions them, and

enables or disables parts of DNA. A subset of these, form coding DNA, which generates proteins responsible for various functions running the biological system. These together make up an organism, which evolves over time forming multiple species of plants and animals, and ultimately the human being.

Bhu Loka: The human being completely formed, the next step is to arm him with the ultimate of tools to achieve his objectives - speech. Sound energy requires medium and doesn't exist in outer space. It is a feature unique to life-supporting planets like earth. Modification of basic sound energy to create phonemes requires the highest evolution, and thus is exclusive to humans. This is the basis of Aksharas, which are modifications of sound capable of invoking the concepts of Brahmanda and Pindanda. The 50 non-coding DNA concepts form the 50 Aksharas, with other phonemes represented as fused Aksharas. A subset of these, form the sacred 22 alphabets of Hebrew. The Brahmi writing system represents each Akshara by an image resembling its cymatic signature. It is seen that the 50 and 22 alphabet sets have a geometrical basis in the Nava Yoni Bala Yantra and the Star of David Shatkona respectively. The Aksharas form the Vedic language - the most complete, earliest, most powerful language.

Manvantaras: Human being is most advanced in capability to understand and spiritually progress. To enable this, societies, culture and civilizations need to form. This is explained in the study of genealogy which studies mutations in DNA haplogroups to explain human origin and migration patterns. In Vedas these are described as Manvantaras - 14 races, occupying various parts of the world, yet speaking a single language - the Vedic language, and the 14 are described as combinations of Aksharas by the Maheshwara Sutras. In each race there were seers or Rishis, who spent time exploring higher reaches of truth and spirituality. Through Yogic techniques, Rishis from different parts of the world were in contact with each other, and pooled together their wisdom and revelations, forming the grand corpus text called the Vedas.

Adhara Lokas: As time evolved, different races evolved the language in different ways, transforming it and giving rise to new languages. This slowly lead to loss of touch with spiritual wisdom of the Vedas. In certain regions, namely subcontinent, Rishis were alert and aware of this, and to preserve the knowledge, they distilled the Vedic language to form a new language called Sanskrit. It was used side by side with other languages such as Tamil, as lingua franca between heterogenous groups, as well as language of spirituality. In other parts of the world, the Vedic wisdom was lost. The loss reflected in increase of vices among the world, and describing them are the 7 lower Lokas starting with Atala in India and ending with Patala in central America, as concentric rings when the world is projected as Azimuthal centering on India.

Religions: Out of compassion, to ensure that no man on earth be denied spiritual wisdom and progress, the Divine manifest in different regions at different points of time in different ways. This gave rise to religions of different cultures, mostly with materialistic needs in mind. However, spiritually advanced among the populace used these religions to progress ahead, as portals into the spiritual wisdom, encountered mysticism, and could finally reach the truths of Advaita. These manifestations in different regions are given by the Yuga concept. Today, as the effect of colonization, globalization, internet etc, the world is slowly getting back together. Languages

and diversity is slowly dissolved, heralding an era of global homogeneity. So too, manifestations of the Divine have ceased in recent times, slowly ending the heterogeneous era that separated the globalized Vedic age from today's globalized world. It is thus necessary to once again, pool our wisdom collectively, from various cultures, with various manifestations. Doing this, one sees how the manifestations correspond to the 16 stages of the spiritual path. The end result of this spiritual path is Advaita, which brings us back to the original point of this flow of wisdom, ending the cycle beautifully.

Related stages are explained together as sub articles. We start with the spiritual path as seen with the manifestations across manifestations, leading to Advaita.

Publishing Information: The article is published in open access or archive platforms. Primary location is Scribd (<https://www.scribd.com/document/389246447/Sarva-Vidya-The-Essence-of-Everything>), and Secondary location is vixra (<http://vixra.org/abs/1809.0495>). The article draft is present in Google Drive (<https://drive.google.com/open?id=1Ha6sRYkCBuWXv875aGJVddn-Jul8rTrAwVsgP0gYazY>). As and when major updates are made, the articles will be replaced in all sites. Semi major updates will be replaced only in Scribd and Drive. All updates, major and minor, will be updated in Drive.

The Spiritual Path

Kanchi Mahaperiyava Chandrasekharendra Saraswathi has said that there are records of Vedanta existing in the entire world, divided into 32 geographic regions. Vedic language, He said, is the oldest and universal language, even Sanskrit and Tamil are descended from it, also proving how each letter of Vedic language transformed in different cultures.

By its nature of Truth, Vedanta is called non-dual or Advaita. The appearance of entire world, as distinct objects, is illusion or Maya. It is all just creation in a dream. The Self is in reality the dreamer, not this human with body and mind, which is just one of many characters in the dream.

God is that highest character who is beyond the universe, creating and destroying it. Since the Self creates the universe of illusion like in a dream, the Self is God, or Parabrahma. The objects in universe is not distinct. It is all one consciousness, just as dream with all its characters is one unit. Sarvam Brahmamaya. Characters in your dream are essentially you.

Since the Self is the origin of the world, the Self, which is God or Truth, is the Mother. Spiritual Path is simply, we the children (ego and individuality) going back to the Mother (pure consciousness or truth). This is Vedanta. It is simply, the honored wisdom, Sri Vidya. The Mother is simple Sri Maatha or Amma. Sri Vidya is Vedantic, and is beyond the six sects or Shanmathas of Hindu faith.

Thus, the Self or Amma, who is pure undivided consciousness creates the illusion of this world, and illusion of Self as an individual with ego. Why? Leela or play, says Vedanta. Amma being playful, is called Lalitha. But, why? Bhagavatham 10.32.20-21 says, Krishna often manifests and vanishes, playing so with Gopis. The intention is, absence creates a more intense desire to unite, and when attained, the joy is more.

Varaha Upanishad says human birth comes only after gaining merit in 1000s of previous non-human births. This is in accordance with Evolution Theory, starting with Algae, to plants, invertebrates, vertebrates, mammals and finally human. Human birth alone is capable of intellectual discernment, comprehending the truth and elevating in consciousness.

If I am a human after many many births, Amma's play of our separation through Maya has reached full maturity. Now the obvious goal is to reach Amma as quickly as possible. Yet, as Bhagavad Gita 7.3 says, only 1 in 1000 humans strives to realize truth, and only 1 in 1000 of those finally succeeds. This rarity of humans is on the spiritual path.

Depending on the mindset evolution, 16 stages can be broadly discerned in the Spiritual Path. Further, fine differences within some stages can be enumerated into multiple aspects.

Gita 3.27 emphatically says God's Will alone prevails throughout, and all actions are due to this alone. There is absolutely no question of human free will. Any thought of human having his own will is a clear misconception, an effect of Maya, which will be erased in higher spiritual stages.

Why is Divine Will absolute and dominant? Because, the universe as Maya was created solely so that reunion would be more enjoyable. Our inner Self, as well as Amma, is eager, even desperate for reunion. This is why Amma conducts every action, Herself, toward acquiring or maintaining everything spiritual or material, required for Advaita. This is revealed in Bhagavad Gita 9.22. It is this Grace and infinite compassion, that Amma is eager, that every person from every culture on earth, reaches the ultimate goal.

Just like the infinite rays of sun warm and give life to everyone, saint or sinner, young or old. So too, Amma has manifested time and again in various cultures in various forms, to guide the spiritual among humans towards truth. Amma loves variety. That's part of Her Leela. So, no two of Her manifestations across the world pertain to the same stage or same aspect in the spiritual path.

Mindset evolution is a continuum. So there are infinite stages or aspects essentially possible. However, in an optimal classification, 16 stages with 75 aspects can be discerned. Amma's manifestations for these cover the entire geography of the world, in all major cultures and language families. Each of these pertain to the Global Vedanta, and so are not limited to the cultures of those regions alone.

To avoid redundancy, Amma did not manifest the same aspect, in two different places. None of these manifestations occurred when Vedanta was a global culture. As cultures developed in these geographies, the manifestations were appropriated into the cultures, and were called deities.

The spiritual significance of these deities were also ingrained in the appropriations. The materialistic 999 of 1000 people developed system of worship and rituals around these deities, to yield various benefits. But, the Spiritual rare souls in the cultures, benefited from Amma's manifestations, and advanced spiritually, and reached the truth. In some cases, they recorded their experiences and revelations for posterity, which would be integral to the religious literature of the culture. Examining this literature, would reveal reproductions of the Vedantic Truth.

Some cultures might not apparently exist today, but cannot be written off as extinct. The erstwhile magic of proselytization, colonization, and conversion by force are vanishing rapidly in the current age. Youngsters question the imposed blind faith. More youngsters want to go "atheist" which they define as "spiritual but not religious". Some revive these ancient 'pagan' cultures.

Even the most recent manifestation of Amma of the current list has been quite a while ago. Of course, certain manifestations are 'scheduled' in the future: Messiah, Kalki, Maitreya. But, will these happen? Look at Avalokiteshwara. He will become a Buddha only if every soul attains

Nirvana. But, that can never happen – this is the very nature of the world. So, the promise of these divine manifestations must be taken as the manifestation itself.

There were no manifestations when Vedanta was global. Today, we are again reaching globalization. Information is freely available to share across cultures. In fact, cultures and languages are slowly dissolving in favour of the global oneness. This is why manifestations are going to/have stopped.

What is the need of the hour? We can see a globalized world again. Once, Vedanta remained one global corpus of truth. We need to revive this state. The Maharishis of past had only the Vedantic truth and revelations with them.

We have additionally, the manifestations too across cultures, for which history is proof. We need to recognize the 16-fold path, and the manifestations as various aspects within this cross-cultural Vedantic path.

Whenever any person from any culture decides to go spiritual, he transcends all cultural notions, and adopts this Vedantic path, the timeless path of the great seers. He recognizes the deity of his own native culture, as the Self or Amma, as also the deity of all other cultures, each with unique significance, and appreciates this Abheda or non-distinction.

Irrespective of whether or not a person recognizes Amma's manifestations, he will be lead through the spiritual path till the final goal. However, recognizing the manifestations, from different cultures, will cultivate an environment of peace and tolerance in this world.

History is proof that only the most peaceful of civilizations have attained the greatest heights of thinking. Moreover, the spiritual path will be a joyful one, appreciating Amma's variety and Leelas, Her unbound compassion and love towards all Her children.

The most esoteric, fundamental and powerful Mantra of Amma in Sri Vidya is the 15 syllabled Panchadashi, added with a secret 16th syllable to make it Shodashi, the 16 lettered Mantra. This Mantra contains Bijaksharas or Seed syllables, and is viewed not just as a worshipping means, but as Amma Herself.

Varivasya Rahasya of Sri Vidya exponent Bhaskararaya gives detailed meaning and explanations of this Mantra, letter by letter. Of many layers of meanings in this Mantra, one is the Upanishadic or Vedantic meaning, which is most relevant to the present mission.

The 15 syllables are split into 3 segments or Kutas, of 5, 6 and 4 letters respectively, and these are mapped to Rig, Yajur and Sama Veda, and the last letter of each Kuta is attributed to Atharvana Veda. Each of the 16 letters is seen to be one stage of the spiritual path.

In this context, the first Kuta, mapped to Rig Veda is read as KaE ILa Hreem, the meaning being one proceeds from creation (K), destruction (a), preservation (E) actions towards praising (ILa)

Brahman (Hreem) and attaining spiritual progress. This represents stages pertaining to cultivating interest in Brahman and preparing oneself to attain the highest goal.

The second Kuta, Yajur Vedic, is read as HaSa KaHaLa Hreem, the meaning being Brahman (Hreem) is of the nature of Bliss (HaSa), Truth (Ka), Infinite (Ha) and Wisdom (La). In this stage, one learns about Brahman, comparing the properties with what is observed in materialistic world.

The third Kuta, Sama Vedic, runs as SaKaLa Hreem, meaning that everything (SaKaLa) is Brahman (Hreem) itself. This amounts to completely surrendering to divine Will giving up ego, and merging one's identity in Brahman. This is the state of simply being Brahman, which is one's true, pure and original state.

The three Hreems from the 3 Kutas are mapped to Atharvana Veda. Whatever is the learning of each stage, is consolidated and brought into practice, through these Hreems.

Going by Periyava's statement, we understand that Vedic language was universally spoken throughout the world initially, and then gave rise to the languages of all 32 regions in the world. It is also observed that whenever a language evolves out of an older one, people's identity shifts to the new language, and they do not associate themselves anymore with the older language and literature.

Thus, when Vedic language evolved into each of the different languages, people lost touch with the Vedic roots, and this is what necessitated Amma's various manifestations, each targeted specifically at a culture. The languages that originated thus, grew divergent giving rise to many more languages, and soon, became language families.

This means that, every language family is grown out of a single language, which ultimately grew from Vedic language. As many persistent language families are there, so many manifestations will definitely exist. Occasionally, we can observe that different branches of the same language family might also be mapped to separate manifestations. This happens in large language families, where separate regions started to evolve their own religion and faiths.

Sixteen of the 75 manifestations are seen as "header manifestations", representing each stage of the spiritual path. These names will be seen in bold letters.

<p>Stage 1: Satsanga: Association with the Wise is the beginning of Spiritual Wisdom</p>	
<p>I observe all life traces its source to the sun - a power higher than anything on earth - and the visible 'God', in His creator aspect. I see that everything in the world - animate or inanimate - contains a spirit. That all-powerful God ordains everything on earth. He has thousands of eyes everywhere. This Almighty Ordainer also seems to have thousands of hands and legs, spreading everywhere. As the ordainer, I see God in His Destructive or Dissolving aspect.</p>	

Everything I see, is God's Glory - His Creation, His Ordinance, His Providence, His Perfection - all these are a reflection of His Infinite Glory. This is the nature of the One God - my God, that I worship. Importance is given to the names of God, containing the sacred letters or the Aksharas, that delineate His immanent glory. Thus, God is the Glorious or **Baha Allah** of the Bahais.

Stage 2: Dharma: Nothing purifies the mind more than righteous activity

I get some insight into how God ordains. The ultimate goal being attainment of oneness with Him, there are certain qualities that take me closer to Him, and certain that take me away. He ordains by rewarding the former, and punishing the latter. This is the basic tenet of Ethics - Dharma. I will do my duty or Karma, according to my Dharma. So, apart from creating and destroying, God regularly intervenes, in His preserving aspect. Dharma has now created a duality - a level where I remain and keep performing Karma, gradually purifying myself, and a level of God, where I can reach once I get pure enough.

There are the Do's - Niyamas and Dont's - Yamas, of Dharma, and to enlighten us on these, the Divine came as **Adinatha Rishabhadeva** of the Jains. The restraints are Ahimsa, Satya, Asteya, Brahmacharya and Aparigraha, and the ethics are purity, contentment, sacrifice, self-study and surrender. Dharma removes sorrow and miseries (Dukha) and opens the gates of the Divine Realm of infinity and bliss (Anantha).

God's act of Dharma ultimately pertains to the mind itself, and yields Siddhi or Perfection as end result. Dharma arises directly from God as Mahamaya or Gorgon of the Atlantis culture centered on Goddess worship whose remnants we find in Plato's account of Sardinia, Minoan culture, Etruscan language and Gorgons found in Libya, Morocco, Spain, Greece etc.

On a physical level represented by inert body (Thamas), God as the Kazakh Koyash or Sun supervises creation, providing humanity with wealth or Sampat. On a spiritual level represented by effort (Daksha), God as the Armenian Mithra gives assurance that Dharma purifies the mind leading to auspiciousness or Mangala. This promise of Mithra ensures the Divine manifests physically to take one towards liberation. On this basis, Mithra appears as Maitreya Buddha of Buddhists.

Emotionally, Dharma removes negativity (the way Lord Nilakantha Shiva did by drinking poison) and promotes love and harmony or Priya, represented by God as Inti of the Andeans. Intellectually, Dharma leads to success and fulfillment (Dhatya) of all good intentions or Kama, and this is represented by directional completeness of the rays of Dazbog, Sun God of the Balkans.

In His act of upholding Dharma, God removes all negativity detrimental to human welfare. Internal obstacles which can sometimes be fatal causing Mrityu is removed by the sheer power of God's Will (Iccha), represented as the lightning Hammer or Ukonvasara of the Finns. External obstacles called Vighnas are burnt away by the radiant heat (Athapa) of Boyo, Sun God of the Kalashas and Burushos.

Finally, Dharma is all-encompassing. Its nature and effects pervade space and time. God as Yahweh of the Levant manifests as the 10 Sefirot, as His integral components or Angas, showing how His emanations pervade all of space and consciousness (Chith). So also, as Dela

<p><u>Malx</u> of the Caucasus, God shows how He as the Sun represents constancy and pervasion over all seasons, over all time, always providing auspiciousness (Bhadra or Saubhagya).</p>	
<p>Stage 3: Viveka: Discriminating what is actual and what is apparent</p>	
<p>I notice that the universe is not all that diverse as it looks. It is all the fundamental God Bhuvaneshwari manifest in three levels of existence - the unmanifest spirit, life-force, and manifest creative energy. These are the trinity mentioned in Trika as Avyakta, Mahad, Ahankara. Thus, I now look at the universe in a functional, rather than structural level, and this perspective is much more holistic and different than the usual one. Apparent illusions of diversity are removed. I understand every entity in its functional role as one of three modes - active, passive or pure. These are Satva, Rajas, Tamas Gunas.</p>	
<p>Stage 4: Vairagya: Discard the useless and focus on the real</p>	
<p>What is the ultimate essence of Viveka? It is that God is beyond all limitations of material world. Now I understand firmly that God is beyond all classifications, all qualifications. He is the most Superior, transcendent of all worldly things, which are inferior and subject to qualifications. Since the world is limited, and tries to deceive me with illusions of diversity, I shall turn away from this world, and focus fully on God alone, who is perfect. While the three Gunas are three letters A,U,M of the sacred Aum, Ganesha, who transcends these is the fourth or Thuriya, and He is Aum itself, in fullness. Understanding this opens me to supernormal capabilities (Siddhis) simply by keeping emotions in check.</p>	
<p>Stage 5: Yoga: Acquire the 6 Virtues, and elevate your consciousness</p>	
<p>Having chosen God and discarded the world, I must prepare to attain the ultimate goal. For that, I must put effort or Sadhana to be completely pure. The efforts of Nivritti result in acquiring the sixfold treasure - Calmness, Sense restraint, Forbearance, Faith, Concentration and Dedication. This amounts to destruction of the six enemies - lust, wrath, greed, envy, delusion, pride. This, God as Kala Bhairava symbolises by 8 acts of destruction - Tripurasura Andhaka, etc. With this, and using techniques such as breath control Pranayama, Asanas, and visualization/focus techniques, I can elevate my consciousness and awareness from the material to the spiritual realm. What happens is my life-force, viewed as Kundalini the coiled serpent, rises from Muladhara, the root of my body, crosses 5 energy centers - Svadishtana, Manipura, Anahata, Visuddhi, Ajna - to reach Sahasrara, the crown of the head. Stationed here is Purusha, while Kundalini is Prakriti, and the union gives bliss, clarity, wisdom and progress. The union is depicted as Lakshmi Narasimha, who is the same as Bhairava.</p> <p>Firmly understanding God alone is my focus, I dive deep into concentration, visualizing my favorite form of God, meditating on it, channeling all other thoughts toward the entity of focus. This is Dharana and Dhyana. I do this until all thoughts dissolve - even the sensation that I am doing this. My identity and individuality itself dissolves into the object of focus.</p> <p>By taking me inward to meditative realms, Bhairava destroys the worldly passion or Rajasa in me. Duality, thinking that God and the World are separate is ignorance (Tamasa), and that is destroyed by God as <u>Ququmatz</u> of Mesoamerica. He is a feathered serpent, combining the bird aspect that is Divine and above earthly realms, as well as the serpent, which symbolizes man toiling in the earth birth after birth. Destroying duality, God makes me understand that He is the</p>	

only one there ever is. As the only One, He is the Gye Nyame of Niger-Congo. Understanding this completely removes the impurity of duality in me, and this takes me to purity (Sattva).

Stage 6: Mumukshu: Clarity of vision leading to thirst for liberation

As the result of this Dharana and Dhyana, when all thought, identity and individuality is fully dissolved, there exists only the singular consciousness, whose very nature is pure bliss - this is Savikalpa Samadhi, the experience of trance. It is a blissful state, it is my true state; this is what God really is. This is the only way to directly see and experience God, first-hand. This bliss is pure ecstasy (Unmadini), while also the height of wisdom about God (Jnana).

I see God as pure bliss, called Skanda. I am now qualified, ready and dying of eagerness to understand more about God, the Brahman. A person in search of Brahman is Brahmin, and **Skanda** loves and is the beloved of such people. So, He is called Subrahmanya. He is pure love and beauty as Muruga, and this intense love affair gets a name - Mumukshutva, or yearning for liberation. Skanda appears as Guruguha, the preceptor who lies secretly within the cave of the heart. Skanda shows Himself to me as the qualities of Brahman - pure love, beauty, wisdom and bliss. In Spirituality, this stage is the no-return point. Every stage after this happens, controlled by Divine Will, and it is only a question of time.

This stage also shows me the Supreme and Pure nature of God's love in myriad ways. Physically, I see fourfold manifestations of His love. First, He is the Tree of Life Ajysyt of the Yakuts, converting the elements of nature (Bhuthas) into nourishment for all infusing us with life and enthusiasm (Samkshobhini). Second, He breaks down (Khanda) and liquidates nutrition (Vidravini), forming the channel of energy that will enable life, spirituality and ultimately take us to Him. This is the Path to God of the Romans. Third, He spreads nourishment all over, leaving no place out, just as smoke (Dhumra) pervades everywhere. Saint or sinner, all are lovingly nourished. Thus, He is the controller and attractor (Akarsha) of all, seen as the Rays of Kouros Apollo of the Greeks. The Oracle of Delphi states that all Gods of the pantheon are but manifestations of the One Kouros, and Apollo is that greatest Kouros. Fourth, He purifies, dissolving and removing physical waste, as the river Danu of the Celts. With this He rings the bell (Ghanta) auspiciousness and bliss (Ahlada).

His love is seen in a non-physical realm too, as Afekan of Melanesia, who provides wisdom to all. Wisdom helps understanding the nature of reality (Chhaya) reducing (Jrumbhini) one's worldly desires.

God then brings both the aspects together to create the amazingly beautiful tapestry of the world. He is the fundamental angel Melek Taus of the Yazidis, bringing forth physical existence by His very intensity (Chandi), as well as stopping it (Stambha). This cycle of creation and destruction comes from His cyclic nature represented as the Devla Chakra of the Romanis. This Chakra is based on growth (Ngarna) as well as fascination (Sammohini).

Building from this is the hot-cold duality. As Xucau of Ossetians, He is the warmth giving sun,

making the world bright and beautiful (Ranjini) and full of life (Jhankara). As Allah of Islam, He is the coolness of the moon, radiating peace, mercy and compassion, and through this He controls and ordains all (Vashankari), giving all enjoyment (Bhoga). The Sufi tradition of Islam is the hallmark of spiritual thought and progress, outlining various concepts dixerland as Samadhi and the states of awareness as the three realms of Nasud, Malakud and Jabarath.

These are the precursors to the two main channels of energy - Surya and Chandra Nadis, also called Pingala and Ida. The sun-moon duality is also the sky-earth duality. Sun-sky is seen as physical Pingala, as the Hittite Sun Goddess of Arinna. Moon-earth is seen as non-physical Ida, as the Phrae Mae Thorani of the Austro-Asiatic faith. The Nadis are truly complementary. Physical nutrition and well being gives rise to spiritual progress (Mantramayi arising from the Drum Damari), while intellectual advancement leads to physical well being and wealth (Sampatti coming from Thankara, intellectual activity).

As perfect balance between Ida and Pingala is the central channel of Sushumna, through which consciousness (Dhankara) elevates to the bliss of Savikalpa Samadhi. Here, all duality, earth-sky, sun-moon, man-God, space-time, fully vanish (Dvandvakshaya). This is represented by God as the Persian Ahura Mazda, who is Truth itself, beyond all duality.

Beyond duality, there is completeness - eternity. This is Geno Dundari, God of the Fulani, seen as the symbol of Eternity. God wields the word which is the means (Artha) or sword (Tanka) that can cut asunder the bondage of the world.

Previously, due to Vairagya, I had a distaste for the world. But now, open to and experiencing Divine Love and Bliss first hand, as well as seeing His love in the world, I develop an interest in it again, not for its worldly nature, but thirsting for Divine love within it.

Stage 7: Subheccha - Burning thirst for enlightenment, the Truth

The universe is what results when these qualities of Brahman take the mood of playfulness or Leela. His qualities of love, wisdom and beauty are reflected in the world. He controls space and time. As time, I see Him as the 12 Adityas, representing the months. As space as the eight directions, I see Him as the Ashta Dikpalas headed by Indra. His Chakra represents light, and the wheel of time, and lotus as life - these are the weapons of Aditya aspect. Shankha represents sound and war-cry instrument made of skeleton/bone, similar to Vajra - this and Gadha represent the Indra aspect. Together, controlling space and time, I see Him as **Surya Narayana**. The Leela of God is that of the universe - full of names and forms (Roopa), all showcasing His greatness (Oordhvakeshi).

This stage helps me to appreciate the variety and diversity of God's play. First, I see Him as the 5 elements of nature that make up everything in the universe. As land or Prithvi, He resembles the fertility (Kama) and the creative energy (Amrutha). As water or Apa, He is the free flow of thoughts in the brain (Buddhi) which discriminates, purifies and puts man in a commanding

position (Akarshini). As fire or Agni, He is the passion of ego (Ahankara), which creates self-esteem (Indrani). As air or Vayu, He is the vibration of particles as sound (Shabda), as well as balance and perfection (Eeshini). Finally as etheric space or Akasha, He is the physical touch or gravity framework that keeps things in place, as well as being the source (Uma) of everything.

I see His Leela in various other aspects of the world too. Fixed by nature, He is the land, and its various products and perfumes (Gandha) that can raise us to ecstasy, which is represented by Nlari of the Khoisans. In this context, He is the abode of order (Rutu). As fluid, He is the abode of taste (Rasa), and is the water that nourishes and develops life in its richness (Renuka), seen as trees and forests. He is represented thus as the forest God Tore of the Pygmys.

Next is the inner outer variety. Within He is consciousness Chitta that is eternal as well as assumes the ego within the world of Death. This is seen as the cross joined with circle of eternity in the Ankh of Amun in Nilotic Africa. This is His Inner Leela (Lukara) contrasted with His outer Leela (Lookara) seen as courage or Dhairya when one encounters the World. This courage is the basis for man's adventure and achievement and is represented by God as Nsi in the Bamileke faith, decorated with elephant masks.

His Leela also is in the past and future. As past He is memory (Smriti) represented by the Rainbow Serpent Wuagyl Ngalyod of Australia, which is a reminder of humanity's rich past (Revathi) in the Dreamtime. Contrast to that is future, represented as Nama, identities and notions that will affect actions. Representing this is Avalokiteshwara as Kunzang Gyalwa Dupa of the Tibetan Bons, who represents the future (Aishwarya) with His strong promise to take all to enlightenment. Avalokiteshwara Guanyin, who has a 1000 hands ready to help anyone in need, and refusing to attain Nirvana Herself, until everyone has attained enlightenment. Avalokiteshwara is the Kunzang Gyalwa Dupa, of the Bon faith, which combines the aspects of God as attributeless Brahman as Bumtra, Brahman with attributes as Purusha and Prakriti, as Ohlkar and His consort Chamma, and as the Guru Sherab.

He is the most earthly in His Leelas represented by the Na Dene Deity ǃzil Diyini Diigo Sini, as the four sacred mountains which are seeds or Bijas of ancestral wisdom, represented as Omkara. At the same time He is the most subtle in His Leela as Atma the soul which as Avyaktha or Spirit is the highest amount the triad of spirit Shen, life force Qi and Creative energy Jing, forming the Mitsu Tomoe of Shintoism. This level of wisdom grants fearlessness or Aghora.

In the world of decay He is the mind that controls the body Shareera, and Being Akshara or beyond decay, controls the world as effortlessly as a dream, and this is the concept of Pulga of the Andamanese. In the world beyond decay or Amrutha, He is the Mother Ambika, the Eternal One overseeing creation as the Khokh Mongke Tengri of the Mongol.

While looking at, appreciating and relishing the love of God through His Leelas, a lot of

<p>questions arise too. My curiosity is sparked, and I thirst to know reality, to know the truth of existence.</p>	
<p>Stage 8: Sathya Vicharana - Stunning revelation of Reality</p>	
<p>Answering my craving, Brahman appears in the form of enlightenment, called Buddha. This is not a physical form, but the wisdom itself as Vajradhara in unmanifest nature called Dharmakaya. This Brahman is the same Purusha-Prakriti united, called Samantabhadra, and is also the Kalachakra. Buddha takes physical form as a Guru, first as the Adi Buddha and then as Gautama Buddha. Buddha teaches the eightfold path of right view, resolve, speech, conduct, living, effort, mindfulness and samadhi, as well as the four noble truths of dukkha, samudaya, nirodha and marga. Ultimately Buddha teaches me about Brahman as Three Existences or Trilakshana. Firstly, be it my own body or mind, or the world around me, everything that I see around me is changing, transitory and impermanent. Associating a real thing with transitory thing will only yield misery. As far as physical world is concerned, I cannot associate myself or my identity with anything that is transitory. So, I end up as physically non-existent, called Anatta or Anatma. Understanding this will lead me eventually to liberation, or Nirvana. So, everything connected with the world, being transitory and impermanent, is unreal, while in contrast, Brahman is real. Satyam Brahma.</p>	
<p>Stage 9: Anantha Vicharana - Revelation of Eternity and Infinity</p>	
<p>I understand that Brahman alone is eternal and infinite. Kundalini, in union with Purusha, is Vishnu lying on the serpent Adishesha. Shesha means what is remaining. When Shesha uncoils, creation evolves. When it coils, creation dissolves. Together, Vishnu on Shesha is called Anantha, the infinite. Anantha as Kundalini is seen as Shakti, which is Brahman itself. Shakti shows me the truth that Brahman is infinite, appearing as Adya Shakti Mahakali, . She stands in a cremation ground in midnight, surrounded by corpses, wearing a garland of skulls, a skirt of severed arms and Her tongue dripping blood. Kala is time, and has the quality by which everything eventually decays, dies or is destroyed. And even when everything has met its end in death, Brahman still exists, and this is what Kali shows. Sometimes, Kali is seen standing on a silently reclining Mahakala Shiva, showing that among Purusha-Prakrithi, it is Prakrithi that evolves into creation and dissolves into destruction.</p> <p>The primary manifestation of Shakti is Durga, the one with multiple arms, indicating that She is infinitely capable. She appears as the nine forms or Nava Durga. She is pure Brahman as Shakti, not in the context of void or Shoonya as Kali but in the context of Poorna or fullness and of Sattvic nature. Infinitely existent Kali is best seen in the absence of material world, while infinitely capable Durga is seen in its presence. Durga is a composite of Parvathi, Lakshmi and Saraswathi, representing the threefold power of Work, Will and Wisdom respectively. In the realm of fully created world, Durga symbolizes utilization of all resources, represented by varied weapons in Her numerous hands, such utilization leading to depletion of material energy, returning back to the state of nothingness that Kali represents. This is the aspect of Mahamaya</p>	

giving wisdom or Sarvajna.

Understanding Her might is possible through understanding Her through the five elements of nature. As Vayu She is Nommo of the Dogons, who engenders life into the earth, as well as yields the capability or Shakti to achieve anything. As Agni She is the fire of Jnana, particularly ancestral wisdom represented by Babakoto of Madagascar, and this wisdom is the biggest treasure or Aishwarya. As Prithvi She is Inanna Ishtar of Mesopotamia, representing the descent of Divine into material realm through the Kundalini, and ascent back, through Jnana. As Jala She is the rain Goddess Tannit of the Berbers, who nourishes using water, and cures diseases. As Akasha She is the originator of all creation as Atabey of the Caribbean, as the eternal protector. While Her might is seen as all the elements of nature, She Herself is eternal and above these.

Similarly Her might is seen in the Three energies. As Iccha She is the Power of Will, bringing forth creation as Prajapati, seen as Bu Luotuo of the Tai Kadai, being the foundation or Adhara of life itself. As Jnana or wisdom, She is the Yin Yang of Taoism with its balance and imbalance the underlying basis for all information, whose end result is always bliss or Ananda. Finally, as work or Kriya, She is Atua the God of Polynesia who manifests as seven realms of the body enabling performance of all activity.

All Her manifestations, as the five elements and the three energies adorn Her like Mayamalini or garland of Maya. She, the granter of all desires adorns these in the form of the spoken word comprising of Aksharas, which together make up the word soul or Tupa of the Amazon region.

Stage 10: Jnana Vicharana - The Dawn of Wisdom, and Reality

I must understand how the world is Brahman's Leela. For this reason Brahman appears as the Guru. Ramana Maharshi has said that the Self, or Atman is the ultimate Guru, which Taittiriya Aranyaka says is inside everybody, under whose control all are made subjects, is the master **Sastha**. The paths of Jnana and Bhakti, approached by the head and heart respectively are seen in His form, combining aspects of Hara and Hari respectively.

Nirguna Atman is nothing but the singular Aum, Ek Omkar, which is the name of truth, the ultimate creator, free from fear and enmity, timeless, undescending and self-existent, revealing Itself as the Guru and as the blessings of the 10 Sikh Gurus.

What does the Guru teach? Sastha is called Bhoothanatha, who rules the world, seen as finite and transitory, made of the Bhoothas or five elements of nature. The elements of nature, or the world are Jada or inert, and have no sense of their own. It is Sastha or the Atma that gives life and light to these elements, and experiences them.

Thus, Sastha teaches two things. First, my own Self, the Atman is the Brahman I have studied about all along. While the Buddha tells that I am Anatta or physically non-existent, Sastha says

Tat Tvam Asi, meaning I am that Brahman or Atman. This is my true identity.

Second, the Atman alone is sentient. It gives life to the various inert elements of the physical world, makes them function and relishes in it as its Leela. In other words, the world lacks sentience, while Brahman is pure consciousness Chid. Its sentience delighting in the world is the knowledge acquired by various senses etc. Thus Brahman is the form of pure wisdom Jnana. With this, I have learnt everything there is to know about the nature of Brahman. Sathyam Jnanam Anantham Brahma. Hearing these truths and contemplating within myself is called Shravana and Manana respectively.

Stage 11: Tanumanasi - Contemplation, Concentration and Clarity

Learning intellectually is not enough, until learning translates into experience. I have to assimilate and consolidate all these facets learned. I enter meditation, reaffirming these truths, and fixing my focus on the Nirguna Brahman, as Om. As and when thoughts arise I watch them, without paying heed or responding to them, since I know that mind and hence thoughts are unreal. They pass and drift away. Soon I reach a stage of no thoughts except Om. The Dhyaatru or feeling that 'I am meditating' vanishes. Om alone remains. Soon, Om also slowly disintegrates and vanishes. Now the experience is of intense pure bright bliss, with no other thoughts or interruptions except the awareness that I am experiencing this. This is Nirvikalpa Samadhi, the most intense and best experience that can ever happen to a person. This intense bliss is Brahman, which is what one truly is, and what one can experience, when all thoughts and distractions of unreal Maya are removed. It is the same observed in deep dreamless sleep, in the absence of all sensation or feeling about mind, body or world. But, deep sleep is darkness, as in I am not aware that I experience this bliss. In Samadhi, it is light. I am aware of my experience. The mind is a monkey, restless and naturally untamed - young Hanuman. Initiated into Rama Japam is the taming of the mind, as a consequence, Hanuman merges one with Lord Rama experiencing intense bliss. This taming of the mind is Nidhidhyasana. Controlling the mind and Prana or life breath are the same, since they have the same source. So also, **Hanuman**, the mind monkey, is Maruthi, son of the wind God which is life breath. As the 11th Rudra, He is Shiva with the five faces as aspects of Vishnu, with Anjaneya, Narasimha, Varaha, Garuda and Hayagriva as Prana control, restraint of thoughts, contentment, removal of evil effects, and perfection of wisdom. The two letters Ra and Ma contain the essence of Vishnu and Shiva Mantras, which represent Jnana and Bhakthi. Rama is a Tharaka Mantra which is sure to grant salvation. All this puts an end to desire or Iccha.

In the process of getting rid of thoughts I also get rid of feelings or perceptions of duality. The first is heat and cold. This is made possible on the one hand by the cooling showers of blessings by God as Wakan Tanka Gitchi Manitou the Great Spirit of the Algonquians, and in the other hand by the loving warmth of the Creator God as Waaq of the Somalis.

The other duality is that of pleasure and pain. In pleasure, God is the Motherly affection odd the Turkic Anesa, while in pain God is the soothing Silla Inukshug, as the humanoid pile of

stones of the Inuit, which can give comfort to deserted passers-by.	
<p>Stage 12: Sattvapatti - Removing all blemish and attaining Purity</p>	
<p>With Samadhi. I think I have finally crossed all boundaries of Maya, and open my eyes, only to see all the Maya back. What use is this bliss if it exists only in some meditative state and not in my actual daily life? First, I can experience bliss only if I enter Samadhi. Second, no Samadhi, no bliss. Third, I am Brahman, Sathyam Jnanam Anantham. Fourth, This world is unreal, and I am not the mind and body. These 4 are the obstacles because of which I lose that bliss if I am out of Samadhi. To destroy these, Brahman appears as Vishnu, meaning One who pervades within. My blissful Self is Vishnu. I am very much attracted to that bliss, and want to taste it again and again. Vishnu as Krishna, keeps me enchanted fully to Him, making me know more about Him. I understand how He took the 10 forms or Dashavataras. He makes me understand how everything happens by His Will alone. Humans can do absolutely nothing on their own, as He says in Bhagavad Gita 3.27. In the Gita 9.22 as well as 18.66 He says to leave everything, forget all Dharma and simply signet to Him. He has been working for my liberation. In fact the entire unreal world exists for my liberation, and every action of His Will is always in that direction alone. He will take care of all needs, physical and spiritual, no need to worry of anything. This promise of His is Vachana.</p> <p>As His Will always directed towards liberation, I now observe His various actions. As the solar <u>Swastika</u> of the Samoyeds He gives nutrition and energy. As <u>Apo Na</u> of the Philippines, He comes to us in the form of nature, rivers, mountains etc. As <u>Perun</u> of the Norse and Slavic faiths, He destroys evil and obstacles. As the Iberian <u>Mari</u> He gives nourishment and bliss through the earth and food.</p> <p>As the Baltic solar <u>Saule</u> He literally burns Herself away giving energy to one and all. As the Bantu <u>Mulungu</u>, He takes away all our problems and troubles. Finally, as the Hmong Mien <u>Saub</u>, He resides within us, as our own mind and soul. He guides us towards correct perspective and mindset so that we may progress spiritually.</p>	
<p>Stage 13: Asamsakthi - Culmination of Non-Attachment</p>	
<p>I understand that Samadhi was only by His Will, not because I made efforts. His Will is always for liberation, favourable to samadhi. I don't have to worry saying that bliss is lost. It's not lost. What happens if I surrender? Gita 18.66 says He will liberate me from sins. Sin is whatever keeps me away from liberation. In this case, the 4 obstacles. Central to all this is the "I" or Ahankara.</p> <p>Krishna means attraction; but Krishta means attracted, which is my state right now. Kanchi Mahaperiyava told how Biblical story of Adam and Eve is actually Upanishadic tale of Atma and Jiva as birds sitting in a tree, Atma not involved but Jiva indulging in the fruit representing world of Maya. This led to feeling of individuality or ego or Ahankara which Bible terms Original Sin,</p>	

and says Christ or Krishta will liberate.

Ramana Maharshi explains the crucifixion of **Jesus Christ**. Christ as Son of Man is the ego. Cross is the body. Crucifixion is killing of Ahankara, and Resurrection is gloriously Surviving as the Self. Since Krishta is Brahman as Atman, the world of Maya, which gets life from the Self, is also manifestation of Krishta. Crucifying means punishing the Ahankara, which is the fundamental root for this world of Maya. Ahankara is not killed but is transformed, just as Christ is transformed from Son of Man to Son of God. Because of God's Will, bliss is accessible to me anytime, and not conditional upon effort. The very notion of 'my effort' is nothing but delusion. Because of complete surrender, I am now a sheep, without identity or thoughts of my own, blindly following my Good Shepherd, the Christ, who is leading me to liberation, by transforming the Ahankara. Christian Mystics, including St John of the Cross have described the transformation that lead to this beautiful dawn of infinite love. After the Purgation, ie purifying one's mind, and illumination of Savikalpa, one attains that elevation of the Subheccha stage. But this is hardly the end. Then comes the terrible Dark Night of the Soul. In the first, you are left completely broken, confused and shattered. You understand that you are nobody, that the world is unreal - this is the Sathya Vicharana. In the Second Dark Night, any remaining sense of "I" is clearly wiped off - absolutely nothing can be done by your effort, is what you now understand - this is the Sattvapatti-Asamsakthi stage. Then it is perfect unification, and endless eternal love, forever.

Stage 14: Padarthabhavana - The Phase of Unseeing the Unreal

Two obstacles that are remaining: "I am this" and "I am not this". To remove this, Brahman appears as **Sadashiva** - the eternally auspicious. Sadashiva is the Lingam - the aniconic representation originally from Arunachala. Arunachala is a tall pillar of fire, whose nature as infinite without beginning or end indicates this pillar of fire is Brahman. Among the natural elements, there is a difference between fire and other elements. When water mixes with a foreign entity such as colored liquid, water changes to the nature of that liquid. But when fire mixes with anything, it doesn't transform itself. Rather it burns the foreign entity, making the latter also into fire. Fire is all consuming, dissolving everything into itself. This is called Laya, and Shiva is the Lord of Dissolution or Laya.

This is the teaching of Shiva. I, Brahman am of the nature of fire. I don't have to worry about losing Samadhi and bliss because of encountering the world of Maya. In fact, it is I who give life to Maya. This is best understood by the concept of dream. I am the dreamer. I lie down, and I create an entire world of my own. I also create many characters out of which one I call myself. This dream world is in no way real, and the dream me is in no way related to the real me. Finally, all these are my creations, and thus, my own self.

Similarly, the physical world is nothing but my own creation, and I am Brahman. Since these get life from me, they are all me indeed. Previously I understood as Brahman is Me, the Unreal World is not Me. Now I understand that Brahman is Me, the Unreal World is also Me. I

understand the profound truth: Sarvam Brahmamayam.	
Stage 15: Thuryaga - Effortless and Natural Bliss	
<p>Thanks to Sharanagathi I understood Samadhi is not through my efforts and thus is always accessible. Statements like “I attained Samadhi” and “I can’t attain Samadhi” have no meaning anymore. Now I also understood that this world, body and mind, though unreal are creations of Me alone, and thus are Me indeed. Statements like “I am this” and “I am not this” are no longer valid, since everything is Me indeed. With this, all obstacles to experiencing continuous Samadhi are removed.</p> <p>The result is that I have entered Sahaja Samadhi: effortless Samadhi which lasts forever. I don’t have to put any effort to consolidate truth and shoo away thoughts of Maya. Truth about nature of Me and the world have been firmly established after sufficient enquiry. All efforts to maintain the state of bliss and Samadhi will happen automatically by God’s Will. All thoughts of this world can no longer affect me, since I now know these are just various entities of my own dream, all unreal.</p> <p>With none of these interfering, I am constantly in the blissful state of fundamental consciousness, aware of the eternal truth, free from thoughts, cares, worries and miseries, always in ecstasy of Samadhi. The waking state or dream state are no more real; they are all just dreams. I don’t care if they exist or do not exist. That is, I am beyond birth, death and life. This is Sat-Chit-Ananda Paripoorna Parabrahman. This is the height of Spirituality and Brahman in this state is the Atman itself. And this is the Guru. This is a state where Sadhaka, Guru and Brahman all merge into One. This is the height and purity of Advaita.</p>	
Stage 16: Lalitha: Joyous Play with the Mother	
<p>The very heights of spirituality has been attained. The ecstatic experience of blissful Sahaja Samadhi is constant and uninterrupted. Amidst the dream world of Maya with all its unreal entities, the bliss of Samadhi gives absolute uninterrupted stillness. But, wouldn’t a corpse experience the same blissful stillness, liberated from and oblivious to the world? Why is it that after Sahaja Samadhi, I am not a corpse yet? I know God’s Will isn’t random. Why am I alive? Here lies a beautiful secret, the ultimate truth of Sri Vidya. In Sri Vidya, Brahman is seen as the Universal Mother, Sri Maatha, who is always sixteen years old. Since Atman gives rise to the world, Atman is the Mother of the World. Also since Atman is the ultimate Guru, who brings me to full Spiritual progress out of compassion that I be one with Brahman, this unmatched Karunya and Vatsalya is the quality of a Mother. The Mother Amma is known as Lalitha Ambika, the playful, since She loves to play or Leela. This youthful childish nature of Amma is why She is called Baalaa.</p> <p>After reaching and constantly tasting Sahaja Samadhi, it is Amma’s Will that I play on, using this world, even though knowing very well it is unreal, as the setting. The scene is like this. I am</p>	

<p>the dreamer. I lie down, dreaming of this world, knowing very well that it is a dream. Beside Me is Me, as Amma, knowing very well that I am Amma. As I blissfully remain in Sahaja Samadhi, dreaming, Amma points to various things in this dream, and we are happily enjoying watching this. This is the play of Amma. Sure stillness is how bliss manifests after death, but while alive, bliss manifests as Amma's love, and to experience this, I as/and Amma play. This is called Jeevanmukthi.</p>	
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MBTI, Possibility Space and Numbers

We shall now explore the 16 stages of the Spiritual Path. Essentially, spirituality is based on the fact that the mind is the keystone of Maya, by which one is deluded into the world of Samsara. It is the same mind that one can use to get out of Samsara and ultimately liberated. Spiritual path is essentially an exercise in changing perspectives and mindsets away from deluded Samsara and towards the Ultimate Truth of Advaita.

Consequently, one sees that the various stages of the spiritual path correspond to different ways in which one perceives himself, the world around, and interacts and processes information. These parameters are the basis of personality typologies, such as the Myers Briggs Type Indicator or MBTI. It is based on the conceptual theory proposed by Carl Jung, who had speculated that humans experience the world using four principal psychological functions – sensation, intuition, feeling, and thinking – and that one of these four functions is dominant for a person most of the time. The MBTI sorts psychological differences into four opposite pairs, or "dichotomies", with a resulting 16 possible psychological types.

Myers-Briggs results are reported as a four-letter personality type (e.g., ESTP, ISFJ). Each letter corresponds to an individual's preference in each of the four pairs of personality indicators (i.e., E or I, S or N, T or F, and J or P). There are a total of sixteen possible combinations of personality types on the MBTI. Letter One: E or I: Extraverts focus more on people and things, introverts on ideas. Letter Two: S or N: Sensing-dominant personalities prefer to perceive things through sight, sound, taste, touch, and smell, while intuition-dominant types look to past experience and are more abstract in their thinking. Letter Three: T or F: The third subtype is a measure of how people use judgment. Thinking types use logic to judge the world, while feeling types tend to view things on the basis of what emotions they invoke. Letter Four: J or P: Everyone judges and perceives, but those who are judging dominant are said to be more methodical and results-oriented, while perceiving dominant personalities are good at multi-tasking and are flexible.



Much like how the nine Avaranas denoting various systems of the human body emerged from the 16 stages, one might rightly infer that the 16 personality types, forming the basis of psychology, also emerge from the 16 stages. These 16 types are more aligned with the bigger spiritual context, and thus differ from conventional MBTI types. For example, spirituality itself being introverted, I or E is all about more or less introverted within this overarching introversion. Thus, one might define the dichotomies within the context of 16 stages as follows:

E or I based on whether one perceives the outside world or one's own thoughts. If one's focus is inward or outward, it is inevitable to decrease or increase one's interaction with the world, since one's mind and actions are intricately tied to one another. For example, stage 1 is an E observing Divinity in the world, whereas stage 2 Dharma is an I, since it focuses on one's own actions.

S or N based on whether one is engaged in particular details, or the big questions and big picture ideas such as existentiality and truth. Thus, Dharma, being day to day activities are S, whereas Samadhi etc focusing on higher truth is N.

T or F based on whether a certain stage transforms a person's intellect mindset or his emotional self. This is the classic Vedic Jnana-Bhakti dichotomy. Love and compassion of stage 8 or 13 is an F, whereas intellect as in Jnana of stages 9 and 10 is T.

P or J based on whether one's actions are in reaction to certain events or are inherent and arising from basic principles. For example, Dharma involves one's action as response to every event and incident, thus making it a P, while process of Viveka and VAiragya in stages 3 and 4 comes from one's own inherent resolve, making those J.

The result of this mapping is that a person's MBTI is not fixed for life. Rather, it undergoes multiple transformations throughout a person's spiritual path, some of which can have profound impact on perspective and behaviour. By the end of the 16 stages, a person is so versatile, that he can choose at his will, an MBTI type corresponding to the situation on demand. Thus mapped, here are the MBTI types of the 16 stages.

Satsanga-ESTP, Dharma-ISFP, Viveka-ESTJ, Vairagya-ISFJ, Yoga-ISTP, Mumukshu-INFJ, Subheccha-ESFP, Sathya-ESFJ, Anantha-ENTJ, Vichara-ENTP, Tanumanasi-INTP, Sattvapatti-ENFJ, Asamsakthi-INFP, Padartha-ISTJ, Thuryaga-INTJ, Lalitha-ENFP.

One can notice interesting patterns in the transition of the 4 factors through the sixteen stages. First, I/E changes as EIEI-IIEE-EEI-EII-IE. Of the 5 sections seen here, Section 1 has rapid IE transitions - this is observation phase, observing both within and outside world. Second stage is analysis, proceeding with slower transitions. Third and Fourth stages represent process - one of Jnana collecting wisdom from outside, followed by one of Bhakti transforming from within.

N/S changes as SSSSS-NSS-NNNNN-SNN. Broadly, the spiritual process is one of finding answers to the big questions of existence, reality and truth. To do that, one spends a lot of time on the smaller details, collecting wisdom through the S, and then transits to the big picture N. 6th and 14th stages provide balances to the S and N dominances.

T/F changes as TFTFTF-FFTTT-FFTTF. The first section is rapid change, again due to observation phase. Shashti is the point of no return. After that stage, transitions are slower. There is a T dominated wisdom section, followed by a F dominant bliss section.

Finally, P/J changes as PPJJ-PJ-PJJ-PPJ-PJJP. Moderate changes are seen in the beginning and ending of spiritual path, signifying good balance and focus on spontaneous reactions as well as informed actions. In the middle, a short burst transitions out of observation phase, and into the analysis phase.

In later sections, we shall see how the universe as studied by physical sciences arises from a geometrical structure, the E8, which represents all the fundamental particles, as well as the 8 charges. We shall also explore how all the spoken languages of humanity arise from a single language, the Vedic Chandas, and we saw how its script, namely Brahmi consisting of 50 Aksharas as well as its 22 Hebrew alphabet subset, can be derived out of fundamental geometrical structures, respectively the Nava Yoni Bala Yantra and the Star of David Shatkona. At this stage, it becomes imperative to understand the mathematical and geometrical foundations of reality, and how it emerged from the primordial Shodashi or the spiritual path.

The ultimate source of all this is fundamental consciousness, which is Amma or Parabrahman, which is the sole reality, full of bliss. The consciousness creates the world, just as a dreamer creates an entire dream world, full of characters and life. In doing so, the first steps of creation are in informational space, the one of concepts and ideas, before physical creation springs forth from this, just like a physical construction comes out of an ideological blue-print.

The very first step of creation is to establish the connection between the reality of pure consciousness, and the to-be created unreal world, so that experience may flow from the unreal to the real. This is the spiritual path seen here in context of MBTI. By their inherent nature, the mindsets of MBTI types tend to group into zones, based on their dominant and inferior functionalities. This is most relevant when one considers the 4 factors as pairs, such as NP, ST etc.

Certain pairs share affinities and distances with other pairs. As the number of entities considered increases, the relationships become multilateral, and one can explain them only using shapes such as triangles, connecting lines etc.

This is the genesis of geometry, and thus of mathematics. Vedas describe the universe as Prakrithi, with its key features being names and forms. Whenever something can be described using forms, of course this involves geometry. The basic shapes give rise to the Navavaranas, or nine enclosures of the Sri Yantra. This happens through the process of sacred geometry.

There is an intricate connection between geometry and arithmetic - one does not exist without the other. It is important to understand here, that numbers introduce the idea of measurement. As the foundations of arithmetic, the nine numbers themselves have inherent in them, the operation of addition, since, using this operation successively on the number 1, yields all the

other 8 numbers. Subtraction is the inverse of addition; multiplication is repeated addition; division is the inverse of multiplication; exponents and powers are repeated multiplication, and roots are their inverse. By basic principles of group theory, one sees how all numbers are created by these operations.

First, we start with the natural numbers: 1,2,3,... They are closed under addition, ie adding 2 natural numbers definitely yields a natural number. However, subtraction, especially in cases such as 3-3 or 5-13, expands the set to include integers - which are natural numbers, both positive and negative, as well as zero. Closure under division demands the creation of rational numbers or fractions.

Next, the operation of roots yields numbers like square root of 2, which cannot be expressed as ratios. These thus manifest as irrational numbers. Together, the entire set is the set of real numbers. Finally, the operation of roots, applied to negative numbers, expand into the overarching set of complex numbers, including the imaginary numbers.

Numbers and arithmetic correspond to geometry. The numbers themselves represent value, as in specifying measurements. Thus, they form a 1 Dimensional axis, called the number line. Next, numbers create 2 and higher dimensional figures. For example, consider the process of multiplication, such as 4*4 and 3*3, where 4 and 3 themselves are represented as 4 and 3 ones.

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1 1 1 1
1 1 1 1      1 1 1
1 1 1 1      1 1 1
1 1 1 1      1 1 1

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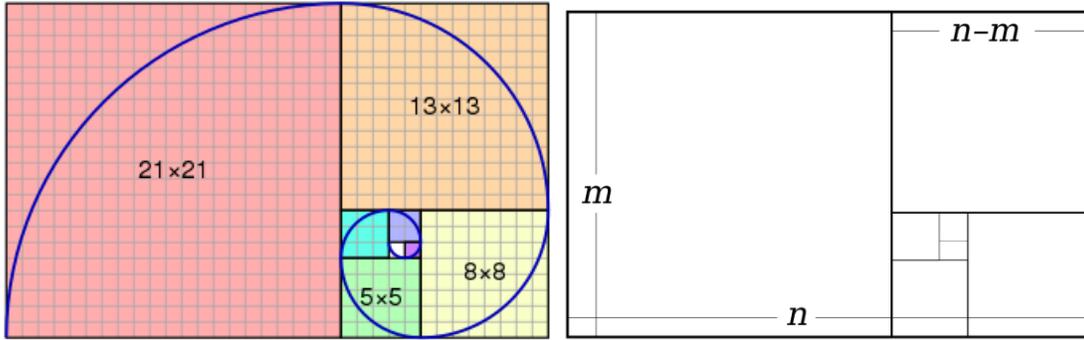
Here we see that collecting four 1s to form a 4, and then repeatedly adding it to itself four times, ie multiplying 4*4 results in a square shape. This is why the operation is called squaring. The same applies to cubes. Other such features of numbers create triangles, such as the Pascal's triangle.

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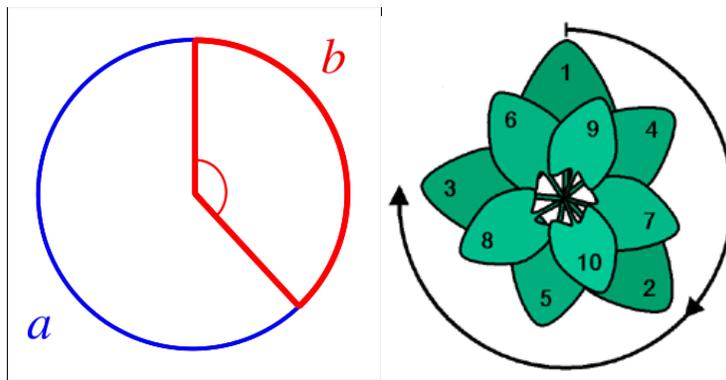
      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1

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There are other special spectacular creations too. For example, consider the Fibonacci series: starting with 1 and 1, obtain each term by adding its last 2 predecessors. Thus, 1+1=2, 1+2=3, 2+3=5, 3+5=8, and so on to get 1,1,2,3,5,8,13.... It is well known that this series when represented as consecutively spaced areas, creates the remarkable golden spiral, found in nature such as conch shells.



Emergent from this pattern is the golden ratio (nearly 1.618) - two quantities are in the golden ratio if their ratio is the same as the ratio of their sum to the larger of the two quantities.



From this, the golden angle (137.508 degrees) is the smaller of the two angles created by sectioning the circumference of a circle according to the golden ratio; that is, into two arcs such that the ratio of the length of the larger arc to the length of the smaller arc is the same as the ratio of the full circumference to the length of the larger arc. In nature, the golden angle is the angle separating the florets on a sunflower.

Having created numbers and basic geometry, the next step involves the created shapes to produce all the multiplicity and variety in the world. However, at this stage one must realise an important concept - the possibility space.

In light of the Absolute Truth of Advaita, we saw that pure consciousness full of bliss, is the only truth and Reality. From this, the world is created, just as a dreamer creates an entire dream world. Consequently, dream world and physical wake world are of the same level of (un)reality. But, there is also a difference between the dream and physical worlds, and that is logic.

In dreams, a person may fly on his own. In physical world, laws of physics, gravity and biological systems prohibit humans flying on their own. In dreams, one often sees acquaintances but in places and situations not possible in physical world. In short, the dream world lacks a sense of logic. This can be stated in another way. In dream world, possibilities are endless. In physical world, logic puts a restriction on possibilities, narrowing down the possibility space through the laws of nature.

However, the dream world is also made up of people, things, sights, sounds and experiences just as the physical world. In both cases, all these arise from names and forms of things. As long as there are names, identities and forms, it is possible to give mathematical descriptions and measurements.

Thus, the realm of numbers and mathematics describe both the physical world and dream world. However, there is a difference of logic and thus possibility space. Particularly, the numbers described above arise from clustering of the MBTI types, from the Shodashi. These consequently describe the mind and its states, since it is the mind that creates the world according to the illusory Maya. The mind and its thoughts are not restricted by physical laws, and may involve things not possible according to laws of nature. This is why the mind produces imagination, art, fiction, and other such out-of-the-world creations. Thus, the numbers denoted by the MBTI clustering denote this infinite possibility space of the mind - these are not physical numbers that describe the universe. For convenience, let us call those "Hypernumbers".

As will be seen, the physical world, which has a narrower possibility space, ultimately arises out of the E8 structure. The laws of nature, of physics and thus chemistry, biology and social sciences, all arise out of the E8 structure. Mathematically, the E8 is a Lie Group - a smooth structure that displays perfection and symmetry when rotated or reflected in various ways. Mathematically, there are very few such shapes, and the largest ever one can possibly get is this 8 dimensional E8. This is analogous to how, when given six line segments, one may create various shapes, with the regular hexagon being only one of them, but the one with most perfection and symmetry.

This restriction on geometrical shapes directly results in a restriction in the possibility space, since the laws of physics ultimately emerge from the geometrical shape of E8. How does one arrive at the E8? It is seen that the hypernumbers described above form the basic geometrical shape which then becomes the E8 - this basic geometrical shape is the Sri Yantra. It is seen that this Sri Yantra gives rise to nine enclosures called Avaranas. Arising from these are the nine numbers, the decimal numbers that describe our universe.

However, unlike the former hypernumbers, these numbers are more "real" and more physical, since it arises from the E8 basis possibility space, and describes our universe which follows laws of nature. Thus, hypernumbers give rise to E8-Sri Yantra, which in turn gives rise to numbers. Functionally, numbers are no different than hypernumbers - they carry inherent operation of addition, and thus subtraction, multiplication, division, powers, exponents and roots, and consequently number types as integers, rational, irrational, real and complex numbers. Thus, numbers and hypernumbers differ in possibility spaces, though in functionality they are the same.

To arrive at Sri Yantra, the basic shape of triangle is taken - this is derived from the Three Kutas that make up Shodashi. Nine such triangles, representing the nine digits of the hypernumbers, interlock with each other. The resultant is a complex shape, which when surrounded by lotus

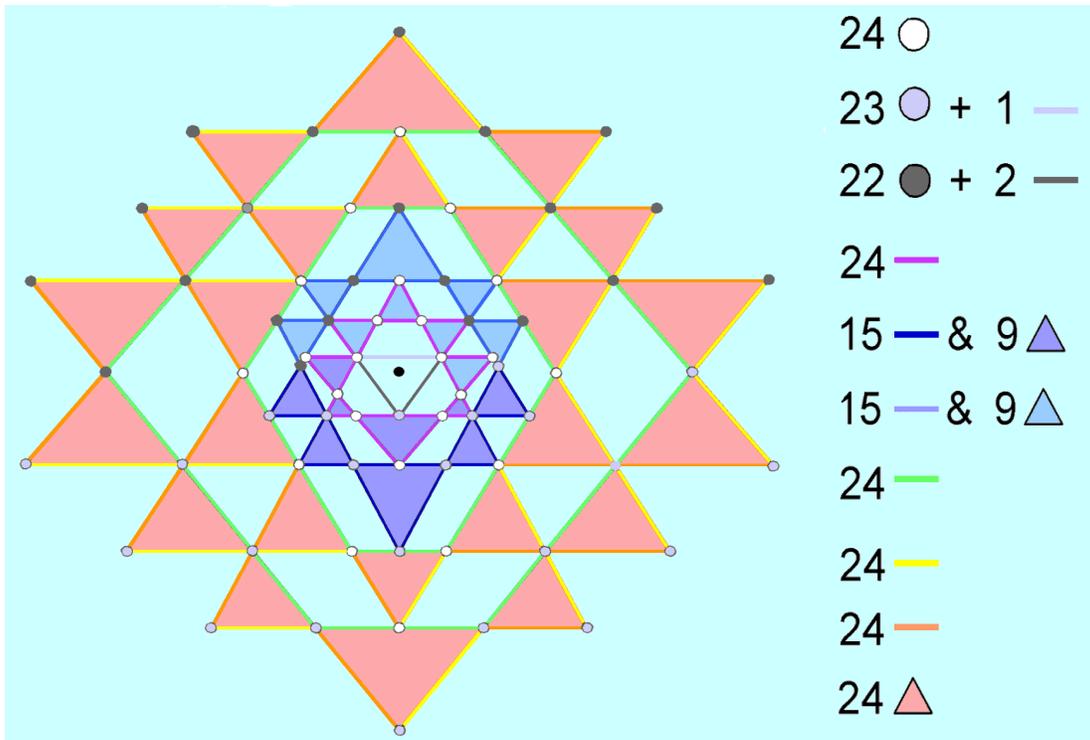
petal resembling layers and outer concentric circles and squares, eventually form what is called the Sri Yantra.

This is the birth of the numbers - the digits 1 to 9 of the decimal number system. This set of 9 covers all 16 MBTIs and thus the entire spiritual path. Hence, the 9 are a complete, self-contained, comprehensive set, and the decimal number system is seen in later stages of creation in various places - the nine celestial bodies whose energies affect earth, the ten fingers and toes in humans.

This geometrical construct of Sri Yantra is the blueprint of all creation. It represents the entire universe, in a conceptual level. It is studied as nine enclosures or Avaranas, each one consisting of a series of triangles or petals. Each of the Avaranas represent component systems that together make up the whole, and this applies at conceptual, biological and cosmological levels. The Sri Yantra, with the concepts it creates and represents, through the Avaranas and their constituent elements, are all explained in following section.

The next stage in creation is to transition from informational space to physical reality. The Theory of Everything discussed in the earlier article outlined how the creation of the universe occurred in the Big Bang, and how this itself was caused by breaking of symmetry in an E8 structure. Thus, the geometric E8 is the basis of all physical creation, and this structure is nothing but a transformation of the Sri Yantra.

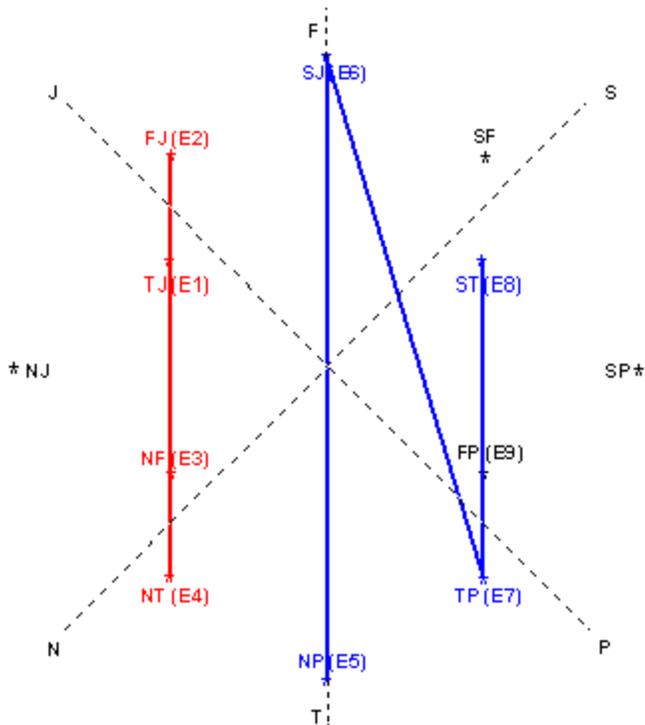
The interlocking triangles form many enclosures, each of which itself contains certain number of smaller triangles. Adding the number of elements in Sri Yantra, where element refers to intersecting points, uninterrupted line segments, Avarana constituent triangles, and the central singularity, altogether yields 240 elements of the Sri Yantra. So too, the E8 structure has 240 roots.



We can understand how Sri Yantra map to the E8 by actually looking at it in the reverse direction - how the E8 maps to the Sri Yantra. We start with the concept of Dihedral groups denoted by D_n . A D_n is an n -sided polygon, which is defined to be a regular polygon which does not change if rotated or flipped - this is referred to as symmetry. There are n rotational and n mirror symmetries, giving a total of $2n$ symmetries for a D_n dihedral structure. In particular, D_3 represents an equilateral triangle. One may rotate the triangle through 120 degrees and obtain the same shape one started with. One may also flip the triangle about any of its vertices, and it still remains the same.

As much as numbers make up geometry and thus shapes, the constituent substrate ie the MBTI groupings are seen represented in the structures that arise, and in fact ensure that these are regular polygons and shapes, so that laws of symmetry would hold.

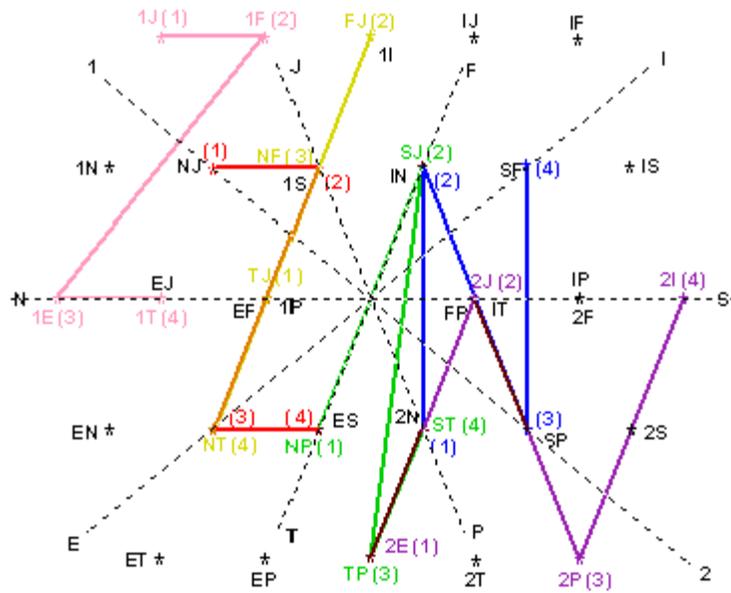
The polygons provide means by which higher dimensional shapes can be projected onto 2D. For example, a 3 dimensional system can be projected onto the D_3 triangle, and representing MBTI dimensions, these are as follows. (<http://tap3x.net/EMBTI/j8gonsowski.html>)



However, one can only represent 3 of the 4 MBTI axes in a 3D system, while 4D can capture all the 4 axes. However, the objective of creation is to maximize multiplicity and variety. Which structure, and what dimensions could do this most effectively?

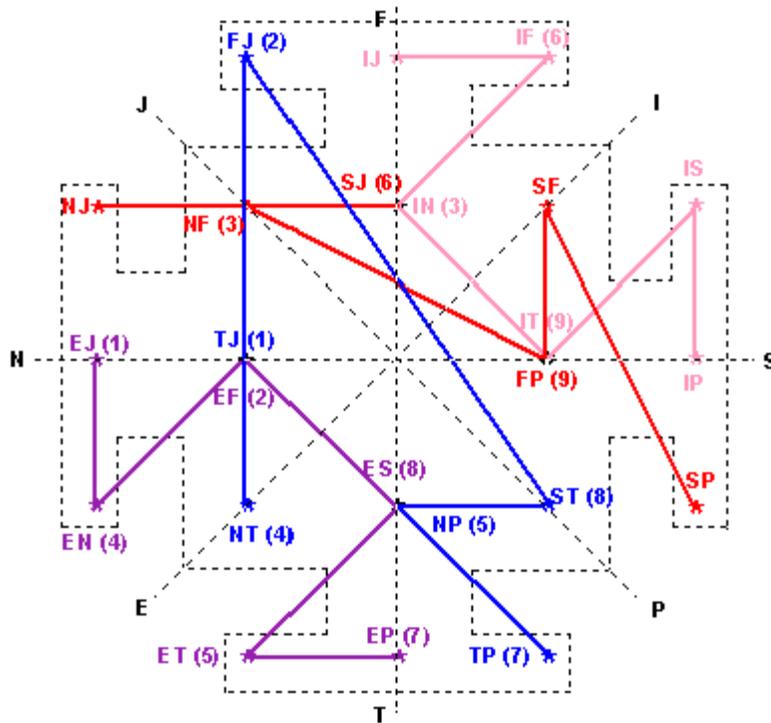
To understand this, one must understand the dihedral group extended to the concept of Lie Group. These are smooth structures called manifolds in multi dimensional space. They are groups defined under rotational symmetry, even including very small angles, with the simplest Lie Group being $U(1)$, a circle. A Lie Group must also render itself capable of being described as an algebra, with a system of generators defined under vector addition, such that adding any two generators within the set must yield another generator within the set. Mathematically it is shown that the largest exceptional simple Lie Group one can possibly get is the E8. This is why the E8 is chosen and described by the Sri Yantra through its 240 elements.

The following is such an 8D group projected into 2D, such that 5 axes are seen in a plane, and 3 axes are not seen, being perpendicular to the plane. The red Z represents where two 7th axis and four 8th axis Zs are superimposed. The blue Z represents where two 7th axis and four 8th axis Zs are superimposed. The pink and purple Zs represent where 5th axis Zs are located. The yellow "squished Z" line and green Z represents where the three axis Z shows up on this projection.



This projection uses the 1-2 axis as the 5th, in addition to the 4 MBTI dichotomy axes. The other 3 axes, perpendicular to the plane of figure, are also such axes, and these can be seen as subtle counterparts of the 4 MBTI axes.

In a similar way, the E8 structure can be seen as a projection in the Sri Yantra. Particularly, the 5th axis NF-SJ-TP triangle shown in D3 is related to the central triangle. The 6th axis interpenetrating triangles of SF-FP-TJ and FJ-NF-ST as seen in D3 are related to the innermost pair of interpenetrating triangles of the Sri Yantra. Outer part of the Sri Yantra interpenetrating triangles maps to 7th and 8th axis Zs. The pair of Sri Yantra interpenetrating triangles just outside of the 6th axis innermost pair represents the 6th axis also but it represents the 6th axis in relation to the 7th and 8th axes instead of the 5th and 3rd axes. The 7th axis pair is just outside the 2nd 6th axis pair and the 8th axis outermost pair is just outside the 7th axis pair. The 8 complex dimensions of the 5th axis and the 16 complex dimensions of the 6th axis are depicted in the ring of 8 and ring of 16 lotus leaves on the Sri Yantra. Finally, a 4 axes projection for the 4 MBTI axes maps to the outermost square shape.



Thus we understand the components of the Sri Yantra as projections of the 8 axes in 2D. In other words, the Sri Yantra, itself formed from the 9 triangles, then unravels in 8 dimensions, representing the 4 MBTI axes and their subtle counterparts, to create the 8D structure of E8.

It has been explained in quoted earlier articles how this E8 dimensions represent the fundamental charges. These charges are encompassed as the 8 states of a three qubit system, where the qubits are chaotic signals, components of the universal wavefunction known as the Pranava Aum. These components entangle the 8 states in various capacities to provide a composite signal which is a weighted combination of 240 entangled states, which represent the 240 fundamental particles, as well as elements of the Sri Yantra. Thus, the Sri Yantra is transformed from a 2D geometrical shape, to an 8D charge space E8 structure, to the entanglements of the Pranava, finally to subatomic particle that make up the universe. Physical creation and thus space-time itself only starts when the E8 symmetry is broken by making the weights of the Higgs field non-zero in the 240 component signal.

In another direction, the Sri Yantra concepts manifest as vibrations called Aksharas. In the manifest world, these vibrations are sound energies, and the Aksharas are phonemes of speech that humans have been blessed with. Particularly, the concepts represented by the Sri Yantra Avaranas fall into 3 categories. The first correspond to simple phonemes, where the concepts can be invoked with Bijas or seeds containing just one phoneme, such as Lam, Gam etc.

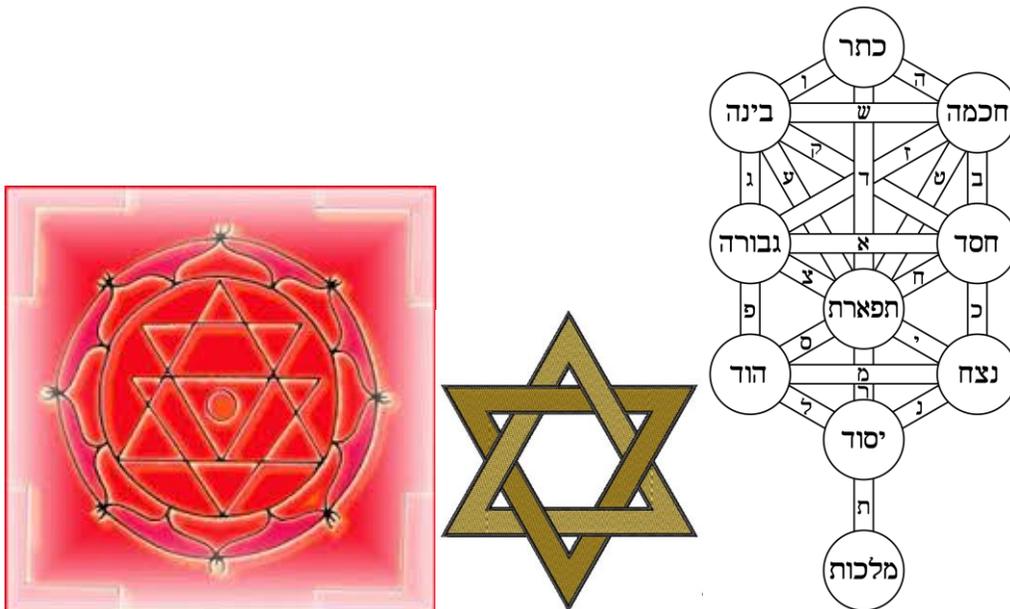
The second category is that of fused phonemes, where the concepts mentioned are the very sources of phonemes, and thus cannot be described by individual phonemes. However, ingeniously, one may combine multiple phonemes to form the Bija to invoke these concepts. Thus, one obtains complex Bijas like Hslyvooom or Kshmreem. Studying the vibration patterns,

one can voice these phoneme combinations as a single synthesized or fused phoneme, and these results in special phonemes such as Zha, the Welsh ll etc. The third category is concepts completely out of scope of Aksharas, which must be invoked using the Pranava alone.

In this classification, one understands that all the concepts of Sri Yantra Avaranas can be represented using the set of simple phonemes, which are 50 in number. These are the Aksharas, the building blocks of the Vedic Language, ancestral to all spoken languages on Earth. Each phoneme is a sound vibration and thus produces a unique pattern of molecule displacement when uttered. These patterns are captured using membranes in studies called cymatics. What results are the signatures of the phonemes, and these shapes form the brahmi alphabet, which is used to write the phonemes.

Just like the Avarana concepts had their basis in the Sri Yantra geometry, the Brahmi shapes of the 50 phonemes have their basis in the Nava Yoni Bala Yantra - a subset of Sri Yantra containing the innermost enclosures, formed by interlocking just 3 triangles. The generation of the 50 phonemes from the Yantra will be explained later in this article.

The set is the minimal possible subset (3 triangles) yet preserving symmetry, as well as comprehensive to generate all Aksharas, corresponding to the Avarana concepts. One can obtain a further subset of the Nava Yoni Yantra, by taking just 2 triangles. This results in a hexagram figure known as Shatkona or Star of David. Subsequently, one obtains 22 of the Brahmi Aksharas from this geometrical basis. This forms the Hebrew alphabet, which is precursor to most modern day alphabets including Roman.



Thus, the Star of David is a subset of Nava Yoni Bala Yantra, which itself is a transformation of the Sri Yantra, which in turn is equivalent to the E8. If the Star of David is subset to Sri Yantra, it must have a geometrical basis of Dihedral group which is subset to the E8. This is indeed true.

Such a geometrical basis is the Kabbalistic Tree of Life, consisting of ten components or Sefirot, with the 22 alphabets arising out of the connections between Sefirot. The D3 system comprises of 12 points with 3 axes, and by removing one axes, one gets 10 points, and this is the basis of the Tree of Life.

To understand this, one proposes the analogy to physics. Specifically, D3 represents 2 axes of gravity with 8 points and one axes of Higgs with 4 points. Removing the Higgs axis yields the 10 points of Tree of Life. These are related to the MBTI in the following way. Axis of Majesty is SN denoting God-Man Duality. Axis of endurance is PJ denoting Old New Testament duality. Understanding and Wisdom is denoted by NP, NJ, while Power and Kindness Sefirot to SP, SJ. In the central column, Kingdom, Foundation, Beauty and Crown map to SF, NF, FP and FJ.

Thus, the Tree of Life has all elements from the D3 except Thinking T. The T adds a sense of 'immortality', which is beyond the scope of 'life' and hence eschewed from D3. Consequently, the eschewed dimensions are FT or final judgement, ST or dominance over death, NT or transforming change, TP or Progress and TJ or Divine Will.

Biologically, there is significance to the subsets of Aksharas as described by Nava Yoni and Shatkona. The former corresponds to noncoding DNA, while the latter beautifully describes the 22 proteins mapped by coding DNA. To perform this, the DNA uses the 4 nucleotide bases of Adenine, Cytosine, Guanine and Thymine or A, C, G, T to create the genetic code. When read in triplets, the code describes the 22 proteins that are synthesized. In the non coding regions, the genetic code creates instructions that turns on or off regions of coding DNA, binds as well as positions proteins. The mapping of genetic code to the Brahmi Aksharas, and its subset the Hebrew alphabet, shall be discussed in later sections.

Numbers

Spiritually, the significance of these numbers 1 to 9 are immense, and seen as not just place holders but representations of the Navagrahas, energy radiations from celestial sources capable of altering every facet of life on earth.

To understand a mapping between the decimal number system and the Shodashi, one need look no further - the nine Avaranas of the Sri Yantra are the source.

Varivasya Rahasya had given the correspondence between the sixteen stages and the nine Avaranas, which formed the main subject of the earlier article.

The nine Avaranas themselves have been mapped to the nine gems or Navaratnas - Pushparaga, Neela, Vaidurya, Vidruma, Muktha, Marakatha, Vajra, Gomedha and Manikya in order from outermost to innermost Avaranas. So also, there's a mapping between these Ratnas and the Navagrahas. This forms the basis of understanding the correspondence between each Avarana and its associated Graha, and in extension, the sixteen stages.

Furthermore, Sangitha Makaranda also gives a connection between the seven Swaras or music notes, and seven of the Navagrahas. Rahu and Kethu must be understood as transitions between the notes. Finally, Navagrahas may also be mapped to Dikpalas based on their traditional positions as seen enshrined in temples.

Number One as Surya is Sarvanandamaya with Manikya. In this Avarana resides Amma Herself, as the source of everything else. So too, the sun is the source of all other planets energy wise. Surya is Atma karaka, and Amma is the Atma itself as Parabrahman. The sun corresponds to centre direction, Madhyama Swara and stages 1, 3, 8 and 13. Of these the stages 1-8-13 represent Jnana, Iccha and Kriya Shakti through the manifestations of Allah, Buddha and Christ respectively, whereas stage 3 denotes the triality of Amma Tripurasundari as Bala Sundari Bhairavi. In the scheme of Dikpalas as Navasandhi, the center position stands for Brahma.

Number Two as Chandra is Sarvarthasadhaka with Mukthaphala. This Avarana houses the ten Prana Shaktis, and as Ramana Maharshi had explained, Prana is synonymous with mind, both having same source. It is through mind power that man achieves extraordinary feats. Chandra the moon is well known as the Lord of the mind. Chandra corresponds to southeastern Agni, Gandhara Swara and stage 2. This stage is denoted by Yahweh with related manifestations such as Tengri, who is visualised as the wind horse and expansive flight bird symbolising the mind. Another name for Chandra is Soma, which refers to fruit of a sacrifice or Yajna. Yajnas are mediated by Agni, and the Yajna referred to here is the Brahma Yajna for which the fuel and offering is the Prana or mind, which is represented by the moon. Thus the connection between Chandra and Agni.

Number Three as Brihaspati is Trailokyamohana with Pushparaga. The root word Brah means expansive, as also seen from the size of Jupiter. Thus the Graha represents one's expansion, be it physically in treasure and progeny, or intellectually through wisdom, that is eventually seen in a person's speech, thus giving the name Geeshpathi. So also, this outermost Avarana is most expansive in size, and houses Siddhis, Matrikas and Mudras, corresponding to control of emotions, afflictions and regulating the elements. Brihaspati maps to the northern Kubera, Daivatha Swara and stages 4, 10 and 14. These correspond to Ganapathi, Sastha and Shiva, who are known in their Guru aspects as Brahmanaspathi, Ek Omkar Guruprasad and Dakshinamurthi respectively. Kubera, the Lord of Treasure represents physical expansion, which is bestowed by Brihaspati as mentioned earlier.

Number Four as Rahu is Sarvasiddhiprada with Gomedha. Rahu is the body of the serpent, and the cyclical and coiling nature represents time. Rahu is a Graha along with Shani and Kethu unfavorable in worldly context but extremely favorable towards Mukti. The black of Rahu represents, similar to Mahakali or Kala Bhairava, the subtle aspects beyond space and time, similar to the Avyakta, Mahad and Ahankara in the Avarana. In essence, Rahu represents the power of Divine Will and fate that makes or breaks a person's effort to achieve something. Rahu corresponds to southwest Niruthi, descending transitions of Swaras, and stage 15. This is the stage of Guru as Nirguna Sacchidananda, completely transcending all space, time and form, as the most subtlest existence ever- as the very Self or Atman. Niruthi means lack of order, or chaos. The order is symbolism of human expectation, and Niruthi represents thwarting of these by Divine Will and destiny, which Rahu represents.

Number Five as Budha is Sarvarakshakara with Marakatha. The Mercury Lord represents intellect and knowledge as Buddhi, and its role in conquering and achieving various tasks. Similarly, the Avarana consists of 10 Agnis which while symbolising Jnana, represent the internalizing and conquering obstacles using various elements and forces of nature. Budha maps to northeast Ishana, Panchama Swara and stage 9. This stage is seen as Shakti, who is of course of the Marakatha hue, and represents understanding Brahman in its truth and infiniteness. Ishana means perfection, and that is the result of Budha Anugraha, using the power of knowledge.

Number Six as Shukra is Sarvarogahara with Vajra. Venus or Shukra is often believed bestowing harmony, pleasures and wealth. However, on deeper insight one understands that the Lord actually bestows what leads to these things - soundness of body and mind with correct perception. Thus the relation with Sarvarogahara, for the curing through Mrida Sanjeevini was the uniqueness and forte of the Asura Guru alone, to the exclusion of even Brihaspati. Shukra maps to eastern Indra, Rishabha Swara and stages 5 and 11. These represent Yoga in the context of Kundalini and Nidhidhyasana represented by Digambara and Hanuman respectively. Both these represent elimination of unwanted desires, thoughts etc. Indra, the Lord of rain is the fundamental personification of prosperity, which as mentioned earlier is bestowed by Shukra.

Number Seven as Kethu is Sarvasamkshobhana with Vaidurya. Kethu is the snake's head, which is famously known for rising its hood, above the earth which is its natural habitat. So too,

Kethu represents the impulse and propulsion to elevate oneself to higher heights. Kethu represents a necessary change from status quo, through actions and efforts directed towards liberation. Such disturbance and excitement is Samkshobhana. Kethu represents the northwestern Vayu, ascending transitions between Swaras, and stage 12. This stage is Vishnu, who represents Sattvapatti or purification and understanding God's Will behind actions. Vayu represents Prana the fundamental life force which is non different from Kundalini. This serpent, and its motion upward directly is represented by the snake head Kethu.

Number Eight, as Shani is Sarvashaparipooraka with Neela. The Lord of Saturn rewards the good and punishes the bad. The driving force behind this is the infinite compassion of Shani that expiates both good and bad effects of Karma as soon as possible, so that liberation may be achieved. The Avarana represents various organs of oneself specialized in various functions, since these are the means through which one may perform Karma and reap the consequences. Shani is mapped to Western Varuna, Shadja Swara and stage 7. This stage is Suryanarayana driving one to Subheccha or the thirst of Truth. Varuna is worshipped in the Vedas as the eternal punisher of evil, surrounding everyone like the vast ocean, from which none can escape. This punishing aspect is reflected in Shani.

Number Nine as Angaraka is Sarvasaubhagyadayaka with Vidruma. The Lord of Mars is also called Mangala, signifying His nature as all auspicious. Auspiciousness essentially means removal of all defects so that went undertaken task may proceed unimpeded to complete fulfillment and bear fruition. So too, the Avarana consists of the Nadis and energy body, which is a circulatory system nourishing and keeping oneself in optimal condition so that no deficiencies arise impeding one's achievements. Angaraka maps to southern Yama, Nishada Swara and stage 6. This stage is Skanda who is popular on Tuesdays and seen in many places in correspondence with Angaraka. Yama, as death, is seen here as the finisher who puts a permanent end to the miseries of life. This same finishing tendency is represented by the all auspicious Angaraka.

Finally the number Zero is to be seen as Samashti of all the nine Avaranas and the nine Grahas, and is mapped to stage 16, which is Amma Herself, and which forms the Samashti or Zero as hexadecimal ordinal position within the sixteen stages.

This concludes the correspondence between the numbers and Avaranas of the Sri Yantra, and by extension to the Dikpalas, the nine Ratnas, the Swaras, the Brahmanda and Pindanda universe, sixteen stages of the Panchadashi, the Aksharas, the four Vedas, cultures of the world and the 48 manifestations.

The decimal number system is neither arbitrary nor a feature unique to humans. The numbers reflect energy sources to the earth through the Navagrahas.

One is fundamental consciousness itself. All mathematical numbers can be constructed from 1 and the operator +. In fact, all operations can be constructed from +, such as inverse subtraction, or repeated addition leading to multiplication, division and higher powers. 2 gives a

sense of creation and multiplicity. 2 gives balance as the 2 points on a given axis. As numbers progress from 1 to 9, their face value increases, but the contribution to growth decreases. 3 is a third more than 2, but 5 is only a fifth more than 4. This affects their intensity of symmetry and asymmetry, nine being the least powerful. Any number beyond nine is too insignificant to be considered, so one moves to the next category, in the tens place.

3 is the first asymmetric number, the minimum required to be non collinear. Thus 3 represents information through asymmetry and entropy, and associated growth. 4 renders a sense of completeness to 3. What 3 started, 4 takes forward - the decay and disorder that entropy can give over passage of time. 4 also denotes the maximal information state ie wisdom. 5 is the exploring of new territory, ie third spatial axis, after the completion given by 4. Thus 5 is about expansion and conquest. 6 denotes harmony and balance. It counteracts the asymmetric triangle 3 with a counter triangle again of 3. Yet, the decrease in growth means 6 is definitely less powerful than 3. 7 denotes asymmetry again, but too weak to contribute to growth as 3 did. Instead, asymmetry of 7 induces activity, a change in status quo. 8 produces balance, just like 4, but also takes the activity of 7 to completion - produces the results of activity. Finally 9 can be rendered as symmetric or asymmetric, but either way is too weak. 9 is best known as the finisher of the number system - signifying auspiciousness, conclusion and death.

These properties of numbers are inherent to the digits themselves and characterize a number, apart from its face value. Since the digit properties only take into account growth and not individual face value, for multi digit numbers, all digits are taken as equal face value, and sum of digits will give the characteristic property of the number. This is the basis of numerology.

Implicit in this big all-inclusive image is a connection between the Aksharas and numbers. Such a numero alphabetic connection forms the subject of Numerology. In the present world one may dismiss this as a pseudo science, but one can see the solid correspondences between various mappings, as explained in this and earlier articles. Also it would be far too naive one one's part to turn a blind eye to the radiations of planets reaching earth and the fundamental vibrations of sound energy, both of which are very observable factors affecting human life.

Various schemes of Numerology exist in today's world: one based on English alphabets, one based on Hebrew alphabet called Gematria which provides for interpretation of the Bible, and the Katapayadi Sankhya of Sanskrit.

One can safely say that all these systems, while a good start, are essentially incomplete, simply because they lack all the phonemes extant in human usage. It is natural that different cultures interact, and names and words of any language are borrowed into other languages. Incompetence therein to represent the borrowed phonemes has direct bearing on the numerology.

Vedic language in contrast, is a timeless, truly global language. Periyava has repeatedly iterated that there is no phoneme spoken by any human that is not included in this language, and one can see this in the Avaranas of Sri Yantra. Sounds not found even in Sanskrit can also be found

here - the throaty guttural, the tongue rolling zha, the Khoisan clicks, the trilling Ra, the Welsh lla, and more.

Furthermore, as Periyava has said, every language spoken on earth is ultimately a descendant of the Vedic language, formed out of the 32 regional modifications of the Vedic Aksharas, which in turn are sanctioned through injunctions in the Vedas.

This means the Vedic numerology is the only accurate method which will work universally, for all words in all languages in their native forms, without the need to "Sanskritize" or "Anglicize" them.

Hebrew is known as an Abjad, where vowels are seldom represented. The Katapayadi scheme also assigns zero values to vowels. However, in the Vedic system, the sixteen vowels are mapped to Sarvashaparipooraka Chakra and thus to Shani, which is number 8. The inherent A sound of each consonant should be counted as long as it is pronounced. However the end A sounds may be omitted, since they can be regarded as silent or modified to ah or e sounds based on grammar rules. Example only one a sound will be counted in Hari, as also in Hara.

A few examples are: Shiva and Rama both yield 9, the very essence of auspiciousness. Vishnu yields 1, Krishna 5, Sai 3, Venkatesha as 7, and the endonymic names of languages as follows: Samskrutham 3, Thamizh 2, English 8, Francais 7.

However there is a caveat in using Vedic numerology. It will not apply to Bijaksharas like Hrim, Shrim and Aum. As Bhaskararaya clearly states, the ending M sound in these leads to a number of subtle states like Bindu, Ardachandra, etc til Unmana. These cannot be included among the numbers, and doing so would be as inaccurate as describing a complex number such as $4+7i$, as just simply 4.

With this discussion, one understands that every bit of human speech in the planet irrespective of language, invariably invokes the sounds of Aksharas, and thus one or other of the nine modes of energy. Although lexically the words spoken contain the meanings within their language, as have been the result of linguistic evolutions over centuries, there exists parallelly another kind of dialogue generated - one based on sounds, numbers, and thus energies.

Given a language, what kind of energies are being generated when spoken? How does it affect culture? To understand this, here is presented a small exercise - computing the Vedic numerological values of the most often spoken words in the language. For this, Zipf's law is used, which states that given a large sample of words used, the frequency of any word is inversely proportional to its rank in the frequency table. So word number N has a frequency proportional to $1/N$.

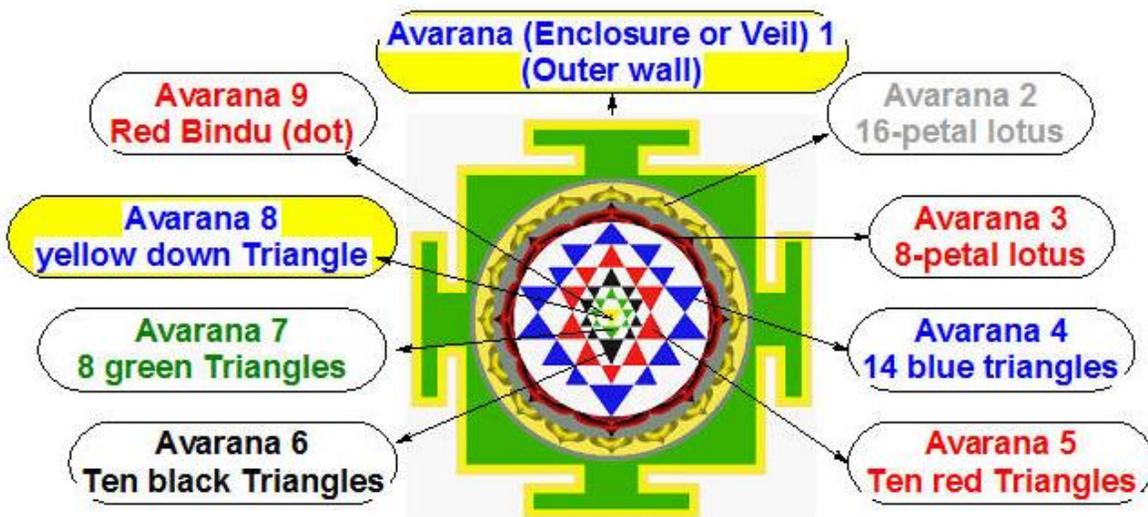
The most often generated numbers and thus energies for each language can thus be computed. Here is the resulting list for some popular languages. More than one digit indicates that multiple energies are dominant, even among top 5 most spoken words. Portuguese 38 punjabi 85

Georgian 4 Turkish 54 Thai 1 Vietnamese 64 Yoruba 43 Korean 4 Indonesian 58 Hungarian 61
Sanskrit 83 Japanese 54 German 48 Russian 84 Latin 1 Greek 49 kannada 27 malayalam 35
bengali 93 English 18 French 4 hindi 3 Hebrew 34 Arabic 39 Chinese 4 Telugu 82 Tamil 278
Spanish 8.

The Sri Yantra

The Sri Yantra. This is a complex geometrical pattern of interlocking triangles, which is a form of Amma Herself. It is the most complete map of the universe ever drawn. The tradition of viewing the Sri Yantra is as layers or Avaranas, going from outward to inward, each enclosure going more subtle than the outer. There are nine such Avaranas, and traditionally worship is done in an order from outer to inner, known as Samhara Krama, or inner to outer, known as Srishti Krama.

However, the formation of the Sri Yantra is explained as the interlocking between 9 triangles, five downward facing and four upward facing, such interlocking creating a number of smaller triangles which constitute each enclosure. This means that the Yantra is simultaneous in nature, rather than progressive. For example, smaller triangles as components of the 7th and 4th Avaranas can both be traced to interlocking of the same big triangles. This means, 7th Avarana is in no way more or less progressive than 4th.



The Sri Yantra is Amma Herself, and captures Her essence both in the transcendental Sacchidananda form, as well as the world and worldly forms as Her Leela. How is this possible? Understanding that the world is Maya, it is akin to a dream. Ramana Maharshi explains how in a dream, the moment you enter the dream, the entire dream world is created - there are no stages of creation. You see it and it is there - this is called Drishti Srishti. So it is, with the physical world, which is an illusion of Maya. However, for those not advanced enough to grasp this truth, the hierarchical order of creation is given, as a way to satisfy their curiosity - such an order is called Krama Srishti.

In essence, Krama Srishti is an illusion, whereas the world is in reality Drishti Srishti. Reflecting this, in Sri yantra, the simultaneous interlocking of triangles is the reality whereas Srishti and Samhara Kramas are simply illusions. All Avaranas exist at the same time.

How to understand the Sri Yantra? In essence the entire Yantra represents an individual, a unit, with the various Avaranas being various components. For example, take a human being - this is an individual unit of creation. What are its components? On first glance, one might apportion the body into face, hands, legs, torso etc - structural way. But, such a view is primitive and highly lacking in knowledge, and one cannot perform any function such as medicine based on this view. For example, the inner organs and their functioning are not sufficiently captured, and some inner systems, for example digestive may involve more than one of those structural components listed.

A better way to do this would be functional, based on various functions performed within the body, and grouping those related organs. This would be circulatory, respiratory, digestive, nervous etc. The success of such grouping is seen in today's medicine and healthcare - we see specialised practitioners pertaining to each of these systems. The Avaranas of the Sri Yantra are similar - they describe the universe in functional roles rather than structural.

At the cosmic scale, the Sri Yantra describes the universe as Brahmanda - not as stars, galaxies and nebulae, but as various functions that are performed in nature and the cosmos, as a result of Divine Will. What is in the Brahmanda, the macrocosm is also in the Pindanda, the microcosm. This is nothing but the human body, which by itself is a miniature reflection of the universe. The components of Sri Yantra explained in the context of Pindanda, forms the contents of the Bhavanopanishad.

In the Varivasya Rahasya, Bhaskararaya has explained how the various Avaranas of the Sri Yantra may be derived from the Panchadashi Mantra. This article explores and elaborates on that mapping. The connection between the Avaranas and Panchadashi is studied in context of the corresponding spiritual stages, as well as the manifestations covered therein. In conclusion, one can understand that the manifestations not only provide a complete picture of the spiritual path, but also form a complete picture of the entire universe, both in macrocosmic and microcosmic respects.

Traditionally, the Sri Vidya Avarana Puja Vidhis for the Navavaranas invoke the various Devatas of each Avarana, each of the invoked through their Bija Mantras or seed Mantras. The innermost two Avaranas simply use the Sri Vidya Bija, while the outermost uses Pranava Om. Avaranas 2, 4, 5 and 6 are seen using the 50 letters of

the Sanskrit alphabet, or Aksharas to invoke each of the Devatas. However, the eight Devatas of Avarana 3 are invoked using Akshara vargas, and the eight Devatas of Avarana 7 are invoked using seemingly unpronounceable Bija Mantras.

It is here that Mahaperiyava's talk is reinforced, where He clearly emphasises that the Vedic language is the source language for Sanskrit and Tamil, and that all languages of humanity evolves from the Vedic language (See appendix 1). He also mentioned how certain letters not seen in Sanskrit, but in Tamil and other languages, such as zha, f, q and the Aytha Ezhuthu, were all present in the Vedic language.

Sri Vidya being the Vedic essence, it is only natural that when Aksharas are invoked, they would cover all Aksharas of the Vedic language, and not just the 50 of Sanskrit. Of course the Vedas mention how the extra Aksharas may be seen in various Sandhi and pronunciation rules pertaining to the 50. Thus, one might presume that the Bijas of the 3rd and 7th Avaranas also invoke these extra Aksharas. Thus, in this article, while giving Aksharas for each of the Avarana Devatas, these extra Aksharas are given pertaining to the two Avaranas. Also, each of the Akshara Vargas may be pronounced as clicks, rather than voiced alphabets, and these form the substance of the 3rd Avarana. Once in Vedic language, one can find them today mostly in KhoiSan languages of Southern Africa. In this way one derives the total number of Aksharas to 66. Excluding some variants, one gets 64, which is an often mentioned number for the number of Shakti Peetas.

As Periyava has mentioned, Chandas, the Vedic language was essentially a collection of sounds which facilitated physical and spiritual well being. This is the science behind the Aksharas identified by the Rishis globally, giving birth to the Vedic language. In other words, just like the Sri Yantra is the ultimate cosmic map of existence, the set of Aksharas is the ultimate periodic table, and the significance or meaning behind each Akshara is understood from the mappings given in the below tables.

Amma Herself is the form of the Aksharas, as the Akshara Devatas from Amrita, Akarshani etc. Fifty such Devatas are mentioned in Tantras, corresponding to the 50 letters in Sanskrit. The other Aksharas are identified as variants or Sandhi rules involving these 50.

Aksharas are normally arranged with respect to their pronunciation mechanisms, such as alveolar, palatal, dental, labial, plosives, voiced, nasals etc. If viewed so, then one might get a feeling that Aksharas are not symmetrically assigned to Avarana Devatas. On deeper insight however, one would understand the real significance of the assignments, which are given and meticulously followed in the Sri Vidya Puja Agamas.

The most significant observation superficially would be how Avaranas or groups of related Devatas are assigned to groups of Aksharas, but beginning with nasals belonging to the

previous group. For example the fifth Avarana is mapped to dental Tha Varga and labial Pa Varga Aksharas, but the starting Devata is mapped to Retroflex Na Akshara, whereas the other Ta Varga Retroflex Aksharas are mapped in the fourth Avarana.

One must understand this in the following manner. Ta Varga by and large represents the Nadis in the 4th Avarana, namely Saraswathi, Ida, Pingala and Sushumna Nadis. Retroflex Na as the concluding Akshara of the Varga represents the first of the fifth Avarana Pranas, which is functionally nothing but the summary of the effects of the above four Nadis. Similar understanding must be applied to other such cases.

The Avaranas are generally elaborated in their order from innermost to outermost, in the following sections. However, for the sake of convenience, the Bindu or singularity, which is the ninth Avarana, is explained last.

Sarvasiddhiprada and Sarvarogahara Chakras

The eighth Avarana consists of the central triangle in the Sri Yantra. The three vertices are three Avarana Devatas Kameshwari, Vajreshwari and Bhagamalini. According to the Bhavanopanishad, these represent Avyaktha, Mahad and Ahankara, which are three levels of existence as unmanifest, glory and individualized respectively. This also represent the stages of desire, planning and materialization toward achieving any given objective. The end result is successful accomplishment of objectives, and hence the Avarana is named Sarvasiddhiprada. This Avarana is mapped to the Akshara श्री (Shreem), also in its triple form as the Bala Mantra. So also, the three components of Pranava, A U and M also correspond to the three Devatas.

As much as proper planning and materialization is important, it is also equally important to weed out the negativities while attempting to achieve something. This is the scope of the seventh Avarana, which consists of 8 triangles representing 8 Vak Devatas. These pertain to various dichotomous notions such as Pleasure-Pain. This is known as distinction or Bheda, and is the result of the mind perceiving things in a certain way.

This Bheda creates the notions that conditions are favorable or unfavorable, and these preconceived notions affect the thoughts and actions. This can be an impediment to success. For this reason, these dichotomies are termed Rogas, and removing of these is why this Avarana is called Sarvarogahara Chakra.

These two Avaranas together consist of nine triangles, and Bhaskararaya maps them to the three Maya Akshara Hreems, in the Panchadashi as the 5th, 11th and 15th letters. The syllable Hreem consists of three Yoni Bijas, namely the Saparardha Kala 'H', the Kamakala 'Ee' and Nada-Bindu-Kala 'M'. Thus in total, the three Hrimis contain 9 Yoni Bijas, and these are the 9 triangles.

Of these, the three Devatas in the 8th avarana triangle, and first two triangles in 7th Avarana consist of cold-heat duality represented by Surya-Chandra Nadis, and three levels of manifestation of the Self or Atman. These 3 triangles are therefore mapped to Nirguna Sacchidananda manifestation in the 15th letter, representing the SadGuru Paduka.

The next three triangles in 7th Avarana correspond to mind as desire, pleasure, pain. These pertain to the mind, which as Ramana Maharshi says, is the equivalent to Prana, both having the same source. Consequently, the 11th letter in Panchadashi is mapped to these 3 triangles, where the manifestation is Hanuman, the monkey God, monkey representing the mind, and who is son of Vayu, representing life-force Prana.

The final 3 triangles in the 7th Avarana correspond to three modes of operation, called Tri Gunas, which are related to the threefold operation of creation, preservation and destruction. These are mapped to the Yoga manifestation as the 5th letter, represented by Digambara as Kala Bhairava, and Adinatha Rishabhadeva.

Each of the triangles in the seventh Avarana is mapped to certain Bija Mantras, which are seen as unpronounceable, such as Kihreem, Hslvyoom, Nvleem etc. However, these are simply Sanskrit approximations of certain Aksharas, which were once there in vedic language, but was deleted in the later Sanskrit. However, other languages, also descended from Vedic, such as Tamil preserve these Aksharas.

Devata	Concept	Akshara
Vashini	Sheetha (Cold)	/l/ॐ Bloom
Kameshi	Ushna (Heat)	/r/ॐ Ksh mreem
Modini	Sukha (Pleasure)	/z/ Jmryoom
Vimala	Dukha (Pain)	/d/ॐ Hslvyoom
Aruna	Iccha (Desire)	/e/ॐ Jmreem

Jayini	Sattva (Purity)	/o/ॐ Yloom
Sarveshi	Rajasa (Activeness)	/n/ॐ Nvleem
Kaulini	Tamasa (Passiveness)	/4/ Klhreem

The Aksharas listed here are seen in Sanskrit as variant versions of some of the 50 Aksharas; the latter will be explained in their corresponding sections. Of these, the cold is represented zha as variant of Prithvi Akshara Lamboshti denoting coolness and stability. Heat is represented by variant of Agni Akshara Raktha. Similarly in the pleasure pain duality, Za symbolising transcending of pleasure is a variant of Jaya, which is an Ida companion Nadi. Transcending of Pain is seen by Zha, a variant of Damari, which is the Pingala Nadi. These correspond to left and right, or Vama and Dakshina side energy channels respectively. Vama of course carries the meaning of pleasure, and Dakshina represents effort. Beyond this duality is desire, represented as variant of Ekapada, highlighting the necessity of all three Shaktis together to transcend desire. Rajasa Guna is seen as variant of Narya, and Tamasa as variant of Lamboshti. These represent on broader scales, the Pranas and Agnis - fundamental energy in creative aspect of achievement and destructive aspect of obstacle removing respectively. Beyond both is Sattva, symbolised by Omkara variant. Om is of course the Pranava, which is Bija or the essence of all creation, and aligning towards this is Sattva.

Sarvarakshakara Chakra

The sixth Avarana consists of the 10 Agnis. These are internal fires related to various kinds of combustion, including what is viewed as the digestive system. But, from a broader perspective, the combustion involves absorbing and internalizing various objects outside one's self, thus adding it to one's value and system. A special case of this is appropriate handling of obstacles, converting them into favorable entities and internalizing them. For this reason, the Avarana is known as Sarvarakshakara, or protection, from factors outside oneself, which are the obstacles.

A concept highlighted in such handling is the fact that obstacles cease to exist as such, whereas the system internalizing them outlives it. This is a representation of the concept of "eternity" or Anantham Brahma, seen in Panchadashi as the 9th letter Ha by Shakti manifestation. The most famous form is Durga, meaning impenetrable fortress, which again highlights the Rakshakara aspect.

In Sri Yantra, the Avarana is the enclosure seen as the inner set of ten triangles, similar in appearance with the 5th and 4th Avaranas seen as outer 10 triangles, and 14 triangles respectively, and the Panchadashi Aksharas for the three are the 6th, 9th and 2nd namely Ha, Ha and E. Bhaskararaya says these are the Akasha or Vyoma letters. This is because, the three enclosures represent the three major systems - digestion, respiration and circulation, which provide the framework for operation of the body, just like Akasha as etheric space is the framework for the other elements of nature.

Within the Avarana, the 10 Agnis are mapped to various manifestations within Shakti. The first, Rechaka, corresponds to exhalation, ie life breath Prana itself, which is the very sign of eternity, as Gorgon or Adya Shakti Maha Kali. The next four denote handling of obstacles using progressively denser methods, corresponding to Kali progressively manifesting in worldly aspects of creation, as Atabey, Wuagyl Ngalyod, Inanna and Earth Goddess Thorani. The last 5 Agnis represent breaking down in densities progressing from high to low. This corresponds to Durga, who in the fully manifest world, represents immense capabilities in utilization of such resources, so that one moves forward from states of everything back to states of nothing, which is again Kali, seen as the Tenth of the Agnis.

Devata	Concept	Akshara
Sarvajna	Rechaka (Exhalation)	/m/म Mahamaya
Sarvashakti	Pachaka (Digestion)	/j/य Yashasvini
Sarvaishwaryaprada	Soshaka (Absorption)	/r/र Raktha
Sarvajnanamayi	Dahaka (Burning)	/l/ल Lamboshti
Sarvavyadhinivarini	Plavaka (Filling)	/w, u/व Varada
Sarvadaraswarupa	Ksharaka (Hard Food)	/c, j/श Shridevi
Sarvapapahara	Uddharaka (Soft Food)	/s/ष Shhanda

Sarvanandamayi	Kshobhaka (suckables)	/s/स Saraswathi
Sarvarakshasvarupa	Jrumbhaka (Lickables)	/h/ह Hamsavathi
Sarvepsitaphalaprade	Mohaka (Liquids)	/kṣ/क्ष Kshamavathi

Mahamaya is the summary of the four Pa Varga Pranas in fifth Avarana, which are life sustenance Vayus. By itself, the veiling and unveiling of Mahamaya gives Jnana, hence Sarvajna, and this is the fundamental form of Jatharagni, called Rechaka.

Derived from Rechaka are the next 4 Agnis, corresponding to Ya Varga. Ya, Ra, La and Va are respectively the Bijas of 4 of the Panchabhutas, respectively Vayu, Agni, Prithvi and Jala. These represent the states of matter with non negative pressure, namely gaseous, plasma, solid and liquid. These four Avarana Devatas symbolize the uniqueness of removing or internalizing obstacles when each of these are used in conjunction with Agni, which by itself is synonymous with Jnana.

Gases are often used in their unique ability to alter pressure, volume and temperature according to universal gas laws. Thus, Yashaswini represents such capability of transformation of the obstacle as digestion or Pachaka, just as one transforms Shakti or energy from one form to another, thus the name Sarvashakti. Raktha, also called Rechika, is Plasma, which by itself is indeed Agni. Removing obstacles by purely fire alone as Soshaka has uniqueness in exposing hidden or absorbed content, just like heating sea water exposes and isolates the salt content. This "discovery" adds one's material wealth, hence Aishwaryaprada.

Solids, by their density are the most capable fuels. Lamboshti, meaning long lip is suggestive of outgrowth, such as the branch of a tree, used as firewood. Burning of solids or Dahaka signifies fully internalizing it by converting their nature to fire or energy, representing Jnanamayi. Liquids are the most efficient in cases where holes and deficiencies are to be filled without leaving any gaps, called Plavaka. Varada, also known as Narayani represents this, with Naara also meaning water. Nutritionally this aspect of filling deficiencies leads to the name Vyadhinivarini.

The next five Devatas correspond to Sha Varga, and these represent removal of obstacles using forms of energy unlike the above states of matter. Dark matter or Akasha, the fifth of the Panchabhutas, is grouped along with energies, by virtue of its negative pressure. Also the 5 Agnis represent removal of obstacles in successively decreasing densities.

The hardest obstacles need strong determination and persistence to be broken down. This is the domain of Iccha Shakti, or Shridevi. By virtue of their nature, Ksharaka or internalizing such

obstacles adds to one's foundational strength, thus Sarva Adharaswarupa. Uddharaka, or Soft obstacles can be broken down only by relentless work and brute force, represented by Shhanda or Anukriya, which represents force of action Kriya Shakti. In broader terms, performing action or Karma is the only way to expiate one's sins and purify oneself, thus the name Papahara. The next class of obstacles, Kshobhaka represented by suckables are too soft to use brute force. Here smart work rather than hard work is key, calling Jnana Shakti or wisdom represented by Saraswathi. The very nature of Jnana is bliss, hence Anandamayi.

Progressing beyond this amounts to transcending the three Shaktis. The remaining ones, Jrumbhaka or lickables, are removed by Vairagya or discrimination, represented by Hamsavathi, or the swan that separates milk from water. The state beyond the 3 Shaktis is closest materially to the primordial pristine state, thus the name Adyayini. In this state, all obstacles are dealt with and complete protection is ensured, thus Rakshaswarupini.

Even beyond this, the only obstacle that exists are Mohaka or liquids, which technically aren't obstacles, since they are fully fluid and thus internalized, by simply adopting an inclusive perspective such as Sarvam Brahmamayam. Thus, successfully, one internalizes all of this Maya world, adding feathers to the cap, or as a garland, called Mayamalini. Fully satisfied, there's no external object or phenomenon to cause irritation, fear, anger etc. Thus one becomes tolerant of everything, or Kshamavathi. All of one's desires are fulfilled, which is why the name Sarvepsitaphalaprada.

Sarvarthasadhaka Chakra

The fifth Avarana consists of the Ten Pranas. These are life-forces, which includes what is known as breath. Thus, this is the respiratory system, including not only the breath that sustains life through the lungs, but also various other gaseous movements responsible for digestion, decomposition etc. Ramana Maharshi has emphasized how Prana and mind have the same source, and controlling one amounts to controlling the other. Thus, this Avarana must be seen not just as respiration, but also regulating various thoughts of the mind. History is proof that it is through the mind power alone, that man has outperformed every species in this world, and has conquered land, water, air and even space. Thus, the Prana and mind are seen in the context of accomplishment and achievement, which is why the Avarana is named Sarvarthasadhaka Chakra.

While accomplishment is in general a good thing, the end objective of human life must always be kept in mind - it is to get liberated from the world, which is nothing but a delusion. This can be done only through Jnana or wisdom, and the mind can grasp this only if it is unblemished and pure. Purifying the mind comes through one's deeds or Karma, performed aligned to Dharma or righteousness, ethics and morality. In the

Panchadashi, the second letter E, being an Akasha or Vyoma letter as mentioned above, is mapped to this Avarana. The manifestation for this letter is indeed Dharma.

This manifestation is characterised by four forms - Yahweh, Kukumatz, Tengri and Atua, each depicting a different facet of Dharma. Yahweh denoting the Sefirot, which are emanations of God as righteousness - He rewards “good” ie deeds that take one toward Him, while punishing “bad” - deeds that make the mind impure, taking one away from Him. Atua represents the duality thus created, between a material realm ‘earth’ characterized by rebirths, and a spiritual realm ‘sky’ of liberation. The feathered serpent Kukumatz combines these aspects and represents movement upward or downward in these realms. Finally, Tengri is the overarching supervising God, looking down at the man in the center of the latter’s world, which ultimately is an expansion of the mind. So also, the ten Pranas are mapped to these based on their quality.

Devata	Concept	Akshara
Sarvasiddhiprada	Prana (Respiration)	/ॠ/ण Naarna
Sarvasampatprada	Apana (Downward, Excretion)	/ॡ/त Tamasya
Sarvapriyankari	Vyana (Circulation, Muscles)	/ॢ ^h /थ Sthanvi
Sarvamangalakarini	Udana (Upward, Sleep)	/ॣ/द Dakshayani
Sarvakamaprada	Samana (Digestion, Equality)	/। ^h /ध Dhatya
Sarvadukhavimochini	Naga (Belching)	/॥/न Narya
Sarvamrtyuprasamani	Koorma (Blinking)	/०/प Parvathi
Sarvavighnanivarini	Krukara (Sneezing)	/ॠ ^h ,ॡ/फ Phatkarini
Sarvaangasundari	Devadatta (Yawning)	/ॡ/ब

		Bandhini
Sarvasaubhagyadayini	Dhananjaya (Decomposition)	/b ^h ,β/ॠ Bhadrakali

Naarna, or Anantha represents the fundamental creative aspect, corresponding to Prana or alternatively the mind, which is the primordial aspect of Maya which then expands into creation. Prana itself is a summary effect of the principal Nadis or energy channels, fully functional. Since everything can be accomplished through the regulation of thoughts, it is Siddhiprada. Arising from Prana are the other 4 primary Vayus, represented by dental Tha Varga.

Of these Apana and Udana are downward and upward Pranas respectively. Tamasya represents the former, symbolising passiveness, cooling effect, also helping in elimination of wastes and retention of good, this eventually accumulates one's worth, hence Sampatprada. Udana also symbolises spiritual elevation and all Sadhanas towards progress, represented by Dakshayani. The result is Shivam or auspiciousness, thus Mangalakarini.

The other two primary Vayus are Vyana and Samana. A saying in Tamil translates as: even nectar, in excess, is poison. Medically, nothing explains cancer better than this. Thus, excess concentration of Prana in any particular area is dangerous, and the task of distributing Prana is done by Vyana, which is why it gets the name Sthanvi or Neelakanta Saraswathi. Non physically, distributing one's thoughts evenly removes prejudice, thus the name Sarvapriyankari. Related to this concept is unevenness, which is also not good. Samana takes the task of balancing and bringing evenness, and in digestion, it represents eliminating waste. This is represented by Dhatya, also called Amala. Also, unfinished desires are completed to give evenness, thus Sarvakamaprada.

As the summary of the primary Vayus is Naga Vayu, which ensures all the channels are clear of blockages, symbolised as Dukha Vimochini. This state of full capability or Artha Sadhaka is represented by Narya, or Anantha Shakti.

Derived from Naga, the other 4 secondary Vayus sustain life, and are represented by Pa Varga. The first two represent temperature regulation and the other two represent space time regulation.

A cold body is a dead body. Life is warmth, and life itself is power of the Divine Will ore Parvathi called as Iccha Shakthi. Life averting death or Mrityuprasamani depends on adaptivity to change, Koorma represented as blinking of the eyes. However, excess heat is harmful as well. Best example is common cold, pus etc by excess body functioning, removed by Krukara through sneezing. These internal cleansing is symbolised as Vighnanivarini, and cooling down as Phatkarini, also called Aathapa Komala.

Bandhini, also called Chitshyamala represents the fundamental Consciousness Chit as vitality, which Devadatta rejuvenates by proper sleep. Of the five Bhutas, sleep regulates Akasha, hence this is a space regulation, and since it is all pervasive, it's called Sarvangasundari. Finally Dhananjaya Vayu regulates the heart valves, preventing arrhythmia, and represents the time aspect of life sustenance, while also responsible for decomposition upon death. This time aspect is Bhadrakali. Regulating Dhananjaya is considered a huge asset in spiritual Sadhana, hence Saubhagyadayini.

Sarvasaubhagyadayaka Chakra

The fourth Avarana consists of the 14 Nadis. These are channels in the body for circulation of energy. Thus, this includes the modern parlance of circulatory and lymphatic systems, while also including within its fold, the energy body, seen as Kundalini in the Yoga, traversing from the root or coccyx to the crown in the head, through Sushumna the spine channel, as well as its companions Ida and Pingala, commonly called Chandra and Surya Nadis. Scientifically, energy is the capacity to do work. Thus, it is seen as stored capability, or treasure or fortune that can be called on demand to achieve intended objectives. Thus, the Avarana gets the name Sarvasaubhagyadayaka.

The Avarana is mapped to sixth letter Ha in the Panchadashi, corresponding to Skanda manifestation. Various called in Eastern medicine as Prana and Qi, is the fundamental life force, that circulates through these Nadis. This Life-force is of the nature of Brahman itself. Thus, it has all the characteristics of Brahman, such as Truth, Bliss, Love and Beauty. Among the 16 stages, one sees this quality highlighted in the Skanda manifestation, as the first-hand experience of God through Savikalpa Samadhi, driving one towards Mumukshutva or intense Thirst for Liberation.

Among various manifestations of Skanda mapped to the Nadis, Nlari represents the very bliss and ecstasy of the Samadhi as a neural euphoria, while Subrahmanya represents the primary life-force of the Sushumna, flowing through the three pairs of Ida and Pingala companion Nadis, represented by His six faces. Ahura Mazda represents the mental clarity that one gets after Samadhi, determining one's way forward through correct perspective and correct decisions.

Devata	Concept	Akshara
Sarvasamkshobhini	Alambusha (Assimilation)	/k/क Kalaratri
Sarvavidravini	Kuhu (Retahskhalana)	/kʰ/ख

		Khandita
Sarvaakarshini	Vishvodara (Distribute Prana)	/g/ग Gayatri
Sarvaahladini	Varuni (Excretion)	/g ^h /घ Ghantakarshini
Sarvasammohini	Hastajihva (Ida cross aid)	/η/ड Ngarna
Sarvastambhini	Yashasvini (Pingala cross aid)	/c, ५/च Chamunda
Sarvajrumbhini	Payasvini (Cranial Nerves)	/c ^h , ५ ^h /छ Chhayartha
Sarvavashankari	Gandhari (Ida self Aid)	/j, ८/ज Jaya
Sarvaranjini	Pusha (Pingala self aid)	/j ^h , ८ ^h /झ Jhankarini
Sarvonmadini	Shankhini (Vata circulation)	/n/ञ Jnanarupa
Sarvaarthasadhini	Saraswathi (Speech)	/t/ट Tankahasta
Sarvasampattipurni	Ida (Chandra Nadi)	/t ^h /ठ Thankarini
Sarvamantramayi	Pingala (Surya Nadi)	/d/ड Damari
Sarvadvandva-kshayankari	Sushumna (Kundalini)	/d ^h /ढ Dhankarini

The first four Nadis, all Ka Varga, represent physical processes. Kaalaratri called Bhutavinyasini represents extraction of nutrition from nature, assimilating it, causing concentration. Since it's natural tendency to disintegrate and increase entropy, this Alambusha represents going against status quo or Samkshobhini. The assimilated Prana is distributed as function of Vishvodhara.

This ensures nutrition or Bhogada, or Gayatri, as well as control over various organs or Sarvakarshini.

Equally important is appropriate dealing of unwanted elements. Impurities are liquefied or broken down by Kuhu, hence the name Vidravini. Khandita means breaking down. Downward energy Varuni enables expelling the waste, which removes misery and gives happiness, hence Ahladini. Ghantakarshini represents the heaviness aspect of this energy.

While these 4 represent physical activities, their corresponding intellectual equivalent is Payasvini, representing intellectual activity of the cranial nerves. Traditionally physical and intellectual are mapped to Surya and Chandra representing active and passive tendencies. Here the passive or decrease in activity is named Jrumbhini, whereas Chamunda symbolises destruction aspect.

The summary effect of these are the 2 Nadis, Hastajihva and Yashasvini. The former summarizes the 4 Ka Varga Nadis as Ngarna. This is a companion to left side Ida, however originating from right side, absorbing the physical properties of Pingala. It makes the excessively dark and passive Ida adorable by infusing activity into it, hence the name Sammohini. Yashasvini is derived from Payasvini as Chhayartha or Nirjara and does the converse, infusing coolness properties of the Ida into the fiery Pingala, and called Stambhini.

Building upon these two are the next two Nadis, Gandhari and Pusha. These are Ida and Pingala companions but running in the same side throughout, building upon the properties of Hastajihva and Yashasvini respectively. They give rise to a capable Ida or Vashankari giving rise to victory or Jaya, and a palatable Pingala or Ranjini giving rise to purity or Jhankarini, also called Nirjara Nadi.

As the summary of all these Nadis is Shankhini. It ensures proper Vata circulation throughout, and since Prana is mind, this leads to Jnana, hence Jnanarupa. Jnana leads to Ananda or ecstasy, hence called Sarvonmadini.

The Ta Varga Nadis represent Prana in various levels. The most physical level is visible as external communication or speech, represented by Saraswathi Nadi. It's all achieving nature earns the name Sarvarthasadhini, represented by Tankahasta also called Dharini.

Thankarini and Damari denote the all important pair of Nadis, Ida and Pingala. The cool and fiery nature respectively leads to material accumulation or Sampattipurani, and spiritual elevation or Mantramayi. Eventually, both are summarized by Dhankarini, representing the most important and central Nadi, Sushumna. The Kundalini traverses this path achieving Abheda and Advaita, hence the name Dvandva Kshayankari.

Sarvasamkshobhana Chakra

The third Avarana consists of eight petals, representing eight actions. These are various actions performed by the physique and psyche. In medical parlance, these involve various systems, such as muscular, skeletal, as well as psychological thought processes. The common factor to all of these is that actions cause change in status quo. It is a disturbance from inertia, and thus an excitation. Thus, the Avarana is named Sarvasamkshobhana Chakra.

On the one hand, when actions are performed, it must be performed aligned to making oneself pure, technically called Sattvic or Sattvapatti. At the same time, one must understand the scope of actions, as completely within the overarching dominance of Divine Will. Ultimately, the notion of freewill is a delusion, as much as the notion of the physical world as a reality, both being the effect of Maya. Among the 16 stages of the Panchadashi, the one highlighting Divine Will and Sattvapatti, is the 12th letter Sa, which is the manifestation of Vishnu.

There are three manifestations of Vishnu - Dashavataras represented by Krishna, Apollo and the Amun's Ankh, which highlight various facets of Divine Will. Krishna, the divine enchanter is the attraction of mind as an addiction toward Nirvikalpa Samadhi, which is slowly channelised towards understanding the nature of Divine play. Apollo represents the dominance of Divine Will in the physical world, while Ankh represents an assurance, a promise of liberation once one surrenders to the Divine Will. Accordingly, the actions in the Avarana are mapped to these three.

This Avarana and the 2nd, are both similar in appearance, with 8 and 16 petals respectively. In the Panchadashi, Bhaskararaya maps these to the 2 Shakti Aksharas or Sa, seen as the 7th and 12th letters. This is because, these Avaranas describe an individual in the physical realm, using the various circulatory, respiratory systems etc to perform tasks operating on the physical level.

For 8 petals of this Avarana, Puja Agamas mention the 8 Vargas of Aksharas - A, Ka, Cha, Ta, Tha, Pa, Ya, Sha. These are in reality, the 8 click and unvoiced sounds that were originally in Vedic language, but non-existent in classical Sanskrit. But, since as per Maha Periyava, Vedic language is the mother language of all languages in the world, one can see the clicks in the KhoiSan family of languages in Southern Africa. It is noteworthy that the distinction between plosives, aspirates, voicings and nasals does not exist clicks. Thus dental plosive ऌ, aspirate ॡ, or voiced ऍ when converted to clicks, all result in the same /|/ dental click. This is why these are mentioned as clicks, each for the 8 Vargas, rather than for individual Aksharas.

Devata	Concept	Akshara
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Anangakusuma	Vak (speaking)	/f/ A-VArga
Anangamekhala	Pani (grasping)	/x/°: Ka-VArga
Anangamadana	Pada (Moving)	/‡/ Cha-Varga
Anandamadanatura	Upastha (procreation)	/!// Ta-Varga
Anangarekha	Payu (excretion)	/ / Tha-Varga
Anangavegini	Thyaga (giving up)	/0/ Pa-Varga
Anangankusha	Grahana (adopting)	/ / Ya-Varga
Anangamalini	Upeksha (anticipating)	᳚᳚᳚ Sha-Varga

The clicks are representations of the 8 Vargas of Aksharas and have corresponding significances. The vowels as will be explained later pertain to identity. Excitation of one's identity reflects directly in one's communication or speech. Such blossoming is Kusuma.

Ka Varga represent physical energy, disseminating them is Mekhala, done through actions of the hand or Pani. Cha Varga represent intellectual aspect, excitation of which is love Madana, bringing closeness, the distance symbolised by Agamana.

An extension of this pair is Ta Varga representing primary Nadis. Excitations of these bring fourth Jnana where the unreal is eliminated or Visarga, resulting in ecstasy or Madanatura. Extension of this is Tha Varga, the primary Pranas, which symbolise the mind as bliss and procreative aspect, represented as Rekha.

Complementary to this are the secondary Pranas represented by Pa Varga, symbolising life, which as individuality must be given up or Hana for liberation. The vitality is represented by Vegini.

Extending this, Ankusha represents Jnana as Ya Varga, which symbolise internalizing objectives through the fire of Jnana. Such internalization and bringing into one's fold is Grahana or Upadana.

Finally, extending this even further, one reaches the secondary Agnis, which bring one to the state of pristine primordial existence. The Mayamalini of this Sha Varga is represented as Anangamalini, and the pure perception here is seen as Upeksha.

Sarvashaparipooraka Chakra

The second Avarana consists of 16 petals. Bhavanopanishad says that these represent the five sense organs (eye, ear, nose, tongue, skin), the five action organs (speech, grasp, locomotion, excretion, procreation), the five elements of nature (earth, water, fire, air, space), and mind. Thus, one can see that, in contrast to systems such as circulatory or respiratory spread throughout the body, this Avarana is the collection of specialized organs, each with its own purpose and task. Appropriate use of these facilitates achieving desired objectives. For this reason, the Avarana is named Sarvaashaparipooraka Chakra.

The essence of this Avarana is how an individual, built up of many systems, manifests the life-force in specialized organs, for special purposes. In Divine parlance, this can be seen as God's play, where God, of the nature of Truth, beauty, love, bliss and compassion, involves in certain circumstances, enacting various deeds of play called Leela. Among the Panchadashi, the letter that represents this Leela aspect is the 7th, Sa which is the manifestation of Surya, and that is mapped to this Avarana.

The manifestations of Surya are seen in various levels. Suryanarayana represents the Leela aspect transcending space and time. Inti represents Sun as fire of truth and love in the heart, a non-physical level. Ukko, Mari and Saub represent Leela in the aspects of Ishwara, Jagat and Jiva respectively.

Devata	Concept	Akshara
Kamakarshini	Prithvi	/ə/अ Amrutha
Buddhyakarshini	Jala	/a:/आ Akarshini
Ahankarakarshini	Agni	/i/इ Indrani
Shabdakarshini	Vayu	/i:/ई Eeshini

Sparshakarshini	Akasha	/u/उ Uma
Rupakarshini	Srothra	/u:/ऊ Oordhvakesi
Rasakarshini	Thvak	/r,ṛ/ऋ Rittidhayi
Gandhakarshini	Chakshu	/r,ṛ:/ऌ Rookara
Chittakarshini	Jihva	/l/लृ Lukara
Dhairyakarshini	Ghrana	/l:/लृ Lookara
Smrityakarshini	Vak	/e:/ए Ekapada
Namakarshini	Pani	/əi/ऐ Aishwaryatmika
Bijakarshini	Pada	/o:/ओ Omkara
Atmakarshini	Payu	/əu/औ Aushada
Amritakarshini	Upastha	/əŋ/अं Ambika
Shareerakarshini	Manas	/əh/अः Akshara

It is important to note the distinction between various manifestations while mapping the Aksharas. The fundamental Brahman, transcendent of space and time, is in reality the Atma. However because of Maya, a limited identity is assumed, the Dehatma Buddhi.

The mind, its identity as the individual are common to both a Jnani and Ajnani. Thus, psyche, mapped to Inti, is seen as the element of truth, even though within the realm of Maya.

However, the thought I am the body alone and no more, is a characteristic of Ajnani and not Jnani. This identification restricted to name and form is the physical body, is the essence of Jiva. Jagat therefore is seeing the surrounding world also with restricted perspective, determining one's interactions with others.

The psyche or Antahkarana has 4 components - Mana, Buddhi, Ahankara and Chitta. Controlling the mind symbolised as desire is Kamakarshini, accordingly the creative aspect is Amrutha. Doing this makes one productive, fertile without distractions, represented as Prithvi. Controlling Intellect or the Buddhi is Buddhyakarshini, and this gives Jnana symbolised by Akarshini called Atharvani. This makes one pure of impurities like clear water or Jala.

A summary effect of these is Ahankarakarshini or controlling ego, represented as sense of power by Indrani. Doing this merges the self in Brahman just as Teja or fire consumes all distinction. Ahankara is the thought that answers what I am, and it's complementary is what I am not, which represents the external world, which is interfaced through the senses.

The most primordial sense as any vibration, as Nadabrahmam itself, is sound, and this represented by Eeshini. Controlling sound, ie oscillations or thoughts through Japa or Dhyana, takes us to the realm of pure Prana or Vayu.

The next pair of senses are energy based. Mechanical waves lead to Sparsha or touch, and non mechanical such as light lead to sight or Rupa. Sparsha as marker of love is denoted by Uma, while sight by Oordhvakeshi. Controlling touch means bringing everything in contact within control, resulting in infinitely expanding as Akasha. Controlling sight amounts to getting over physical distinctions which are the play of Maya. This results in perceiving Brahman in homogeneity, or "hearing" Brahman as all pervading Om.

The last pair of senses are matter based. Rasa or taste and Gandha or smell arise from chemical compositions of substances. These are denoted by Rittidayi or Rutudhama and Rookara or Renuka, alluding respectively to the variety and earthly aspects. Controlling Rasa also means controlling emotions, result being that one can relish divine play in everything one experiences. This is the actual feeling or touching God. Controlling smell mens controlling the nose as Prana or equivalently the mind. This leads to see God directly, as in Pranayama or Nidhidhyasana leading to Samadhi.

Next is the fourth aspect of psyche, Chitta represented by Lukara or Luthumbara. Chitta is the aspect of Chit or Chaitanya representing Divine Will and Consciousness, and thus Chittakarshini leads to tasting the blissful divinity.

Complementary to the internal nature of Chitta is its external nature, Dhairya. This has three different connotations. Dhairya is courage arising from physical valour. It is also wisdom in cases of adversity. Dhairya is also patience, which comes from endurance, an effect of will power. Thus, Dhairya represents the Chitta's expansion as threefold Iccha, Jnana, Kriya, which

forms how an individual interacts with the world. Physically, this leads to performance of various actions or Karma, by which one becomes purified and "smells" God, ie activates Kundalini, the fundamental Prana.

The result of worldly interactions is one's vast treasure of experiences, making up memory or Smriti. This treasure is represented by Ekapada or Revathi. This reflects the purity one has gained gradually, and this wisdom is reflected in one's speech or Vak. Conversely, great communication and oratory skills are efficient in capturing audience minds as memories.

What gets collected gradually as memory forms one's perspective of oneself and other individuals. This identity is Nama, and is a distilled form of Smriti as Aishwaryatmika also called Sushka Revathi. Clearly the biggest factor in this identity is what an individual does and performs, thus the reference to Pani.

The next pair is transcendental. Bija is one's seed or core essence as Brahman, represented by Omkara. Pada, apart from feet also represents surrender to this Brahman. Atma is the Self as Brahman indeed, and can be attained only by eliminating identity with the non self. This elimination or Visarga is denoted by Payu, and results in a state of fearlessness, denoted by Aushada or Aghora.

The result of these two is the deathless state of liberation, Amruthakarshini. This is denoted as Amma Herself as Ambika, and Upastha alludes to Ananda, as the very nature of Mukti.

The complementary state of liberation is the bound state of Samsara, and this is primarily caused by body or Shareera, through the mind. Overcoming this is conquering death, as denoted by Akshara. The body and mind are the very tools through which this can be achieved, and this control is Shareerakarshini, as the essence of Sadhana.

Trailokyamohana Chakra

This Avarana, the first, consists of three concentric square shaped enclosures, called the Bhupura. The threefold nature of this Avarana represents the emotions, afflictions and elements of nature respectively. Together this represent the individual's position in the visible physical world, interactions with other individuals, as well as inanimate things like various components of nature. The objective of all these is that one brings circumstances under control, conducive to achieving one's objectives through interactions with animate and inanimate entities. For these reasons, the Avarana is named Trailokyamohana Chakra. The Akshara mapped to this Avarana is ॐ (Om), the Pranava Mantra, though the Avarana represents gross concepts as manifestations of the Aksharas. Bhaskararaya maps the three layers of this Avarana to the three La letters in Panchadashi - the 4th, 10th and 14th letters. These three are Prithvi Aksharas, as in they represent down-to-earth involvement in materialistic level, unlike other Aksharas such as the Akasha ones.

The outermost layer consists of the 10 Siddhis - Anima, Laghima, Mahima, Ishitva, Vashitva, Prakamya, Bhukti, Iccha, Prapti and Sarvakama, which as per Bhavanopanishad denote the nine emotions or Navarasas, plus Niyati. On the one hand, Siddhis are supernatural powers that are used to make circumstances favorable, while on the other hand, emotions denote states of mind at given moments of time, that affect the entire physical and psychological setup and associated actions. It is a well known fact that Ganesha is the Lord of the Siddhis, and so this manifestation, the 4th letter La in Panchadashi is mapped to this layer. There are three manifestations of Ganesha - as Vinayaka, Dzil Diyini Diigosini corresponding to aspect of the 4 Vedas and Bu Luotuo as Prajapathi Brahma. These are mapped to the first 4, next 4 and last 2 Siddhis respectively in the above mentioned list.

Conquering norms or Niyati is the gateway for supernatural capabilities, represented by Anima. Shringara is fascination and hence bondage; getting rid of it gives lightness or Laghima. Hasya is worldly mirth whose conquering gives greatness Mahima. Karuna or compassion leads to perfection Eeshitva.

Conquering anger leads to attraction Vashitva. Courage and determination leads to fulfillment Prakamya. Getting rid of fear means eradicating all impediments to Bhukti or enjoyment. Disgust if eradicated leads to Iccha.

Getting above surprise and impulse reactions lead to attainment Prapti. Conquering all emotions as Shantha leads to complete fulfillment of desires Sarvakama.

The middle layer consists of the 8 Matrikas - Brahmi, Maheshwari, Kaumari, Vaishnavi, Varahi, Mahendri, Chamunda and Mahalakshmi. These denote the removal of the eight afflictions respectively as lust, wrath, greed, delusion, pride, envy, and notions of merit and demerit. These are the qualities that characterise the various deities, whose energies are represented by the 8 Matrikas.

On the one hand, these afflictions lead a person to unrighteous actions and sin, or Adharma, while controlling these would lead one to have firm mastery over the circumstances, whereupon right decisions can be taken and success achieved. Both these aspects are seen in the manifestation of Dharma Sastha, which is the Nirguna Guru as Ek Omkar. Thus, this layer is mapped to the 10th letter La in Panchadashi.

The innermost layer contains the ten Mudras - Samkshobhini, Vidravini, Akarshini, Vashankari, Unmadini, Mahankusha, Khechari, Bija, Yoni and Trikhanda, which the Bhavanopanishad states, represent the wheels of energy or Chakras - Muladhara, Svadishtana, Manipura, Anahata, Visuddhi, Ajna, Akula Sahasrara, Kula Sahasrara,

Indrayoni, and their Samashti. Mudras are various worship and healing gestures performed with the hands. The fingers are said to represent the five elements of nature - earth, water, fire, air and space. Consequently, the Mudras are seen as regulations of the five elements within oneself and the immediate surroundings. This is another aspect of making conditions conducive to achieving objectives. Shiva, in His five-faced form, is seen as Bhooteshwara or Lord of the five elements. Accordingly, Lord Shiva, the manifestation of 14th Letter La in Panchadashi, is mapped to this layer.

Sarvanandamaya Chakra

The ninth Avarana, which is the innermost singularity, called the Bindu, is the very residence of Amma as Lalitha Maha Tripurasundari. Her very nature is bliss, hence the name Sarvanandamaya. This Avarana is beyond the scope of Aksharas, and is simply Mauna, silence as the eternal Divine eloquence.

Particularly, this Avarana represents the bliss of Lalitha Ambika in Her pure, Nirguna form as Sacchidananda, as well as in Her Leela aspect of playing with the world. This can be experienced fully only in the Jeevanmuktha stage of a person. Though beyond all Aksharas and all stages of spirituality, for purposes of Leela alone, Amma manifests certain aspects in the world. In this connection, Bhaskararaya maps this Avarana with four letters in Panchadashi - the three Ka as 1st, 8th, and 13th letters, and Ee as 3rd letter.

The explanation is that the three Ka letters are taken from the three Kutas or components of Panchadashi and stand for Jnana Iccha and Kriya respectively.

Of these the 1st letter Ka denotes Jnana Shakti aspect, in the manifestation as Allah. Primarily, this amounts to knowing about the nature of Brahman, which forms the basis of spiritual progress. Allah as the Samashti manifestation of Jnana, can also be seen as seven individual manifestations, known as the seven Saraswathis - Neela, Ghata, Jnana, Kini, Antariksha, Chintamani and Maha Saraswathi. These correspond respectively to Dela Malx, Silla Inukshuk, Gitchi Manitou, Afekan, Pulga, Ogun and the Baha.

The second Ka, ie the 8th letter denotes Iccha. This is God's Will as the sole driving force behind all Leela and creation, whereas the same Iccha as compassion, is the driving force by which the Divine descends to reveal the truth, taking a person out of Maya and into liberation. This is seen as three manifestations of the 8th letter. Buddha Dharmakaya is the very form of truth and enlightenment in Karana Sharira. Kunzang Gyalwa Dupa Avalokiteshwara is the Karunya or compassion in Sookshma Sharira, leading towards enlightenment. The actual physical process of enlightenment is the

result of fulfilment of a Divine Promise, and this is Mitra or Maitreya Buddha in the Sthula Shareera.

The third Ka, ie 13th letter denotes Kriya. Understanding that God's Will alone prevails, will result in understanding that every action from the beginning of time was done by God alone. So too, the entire spiritual progress is made by God alone through Divine Will. This is what Jesus Christ, the manifestation of the 13th letter symbolises. Surrendering to Divine Will, one sees that Ahankara or ego is killed, which is that the crucifixion actually signifies, as explained by Ramana Maharshi.

The 3rd letter Ee as the Kamakala Bija denotes Lalitha Ambika as the union of Purusha Prakriti principles as Kameshwara and Kameshwari. This is the manifestation of Tao Yin Yang. However, the manifestation of this 3rd letter have 4 more forms, each signifying one aspect of Lalitha Ambika.

The Brigid Danu Triskele represents Amma in triple manifestation as maiden, lady and crone ie Bala, Sundari, Bhairavi. So also, the triality in Mitsu Tomoe represents Amma's Lila in three realms - Jiva, Jagat and Ishwara.

The Tupa manifestation as word soul, represents Amma as the Aksharas or fundamental modes of energy. This in essence is the concept of Mantra, representing Mantrini or Raja Shyamala Mathangi, who is the Counsellor in Amma's court.

The Babakoto manifestation represents Pitrus or ancestors, as the carriers and disseminators of wisdom. Also, the most primordial of these, the king of Pitru world is Yama, the God of Death who is also the maintainer of Dharma. He is the punisher or Dandana for the unrighteous. In these respects Babakoto represents the parental father-mother figure in Sri Vidya as Varahi-Kurukulla, seen together as Dandanatha Maha Varahi, who is Commander in chief of Lalitha Ambika's court.

Mantrini and Dandanatha have deeper significances too. They represent the sugarcane bow and flowery arrows respectively seen in Amma's hands, which in turn represent controlling the mind, and the five senses.

The E8 and Science

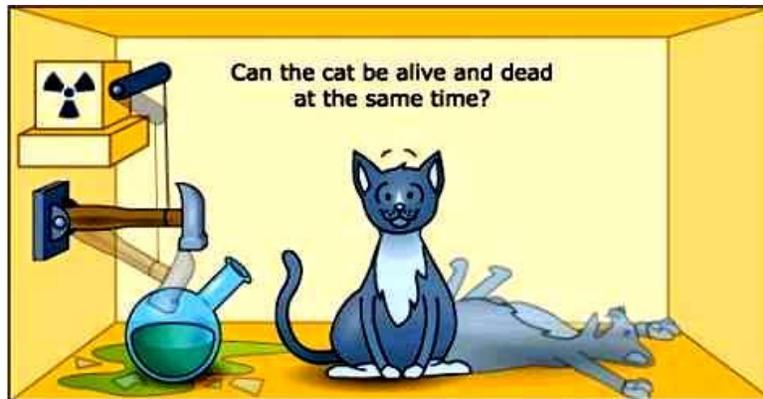
A single unified “Theory of Everything” or ToE has been the elusive Holy Grail of Science, from the days of Einstein to the present day. Such a model would bring into its fold, all the four fundamental forces - gravity, electromagnetic, nuclear strong and weak, the fundamental states of matter - solid, liquid, gas, plasma, the fundamental particles of the Standard Model, and also have an explanation for Dark Matter and Dark Energy.

In the mainstream, the most viable contender for such a theory in recent times has been String Theory, which has also been subject to an equal amount of criticism. In terms of observable practicality, this is nothing more than a fancy mathematical construct expanding upon 25 and more dimensions, which will in all likelihood remain out of human validation and observation till the end of time. Other theories too have been proposed, such as Loop Quantum Gravity. Geometrical approaches too have been proposed such as the E8 by Garrett Lisi. The discovery of new particles predicted by the E8 will either validate beyond doubt, or completely disprove the theory. This article will outline very generic concepts of interpretation and mapping, and while it will refer to the E8, the concepts can easily extend to the other aforementioned models too. The general idea here is developing a signal based perspective to quantum physics, and taking it forward from there. The result is that we get a ToE unifying all above mentioned aspects of nature, and we find that such a Theory is not new - it simply follows the ancient Vedic model of three Shaktis - Iccha, Jnana and Kriya, and the five Bhutas or elements of nature,

Basis to the ToE is the Chaotic Interpretation of Quantum Mechanics, published as a separate paper in viXra:1510:0438. A brief overview of the article follows:

Quantum Mechanics is the discipline centering around describing the universe, particularly subatomic particles as wavefunctions and state vectors, containing all information necessary to completely describe a system, and centers on the uncertainty or probabilistic aspect of exactly determining basic properties such as position and momentum.

Arising from this concept is the concept of a Quantum Bit or Qubit, as the basic unit of information. While a classical bit is capable of holding the smallest unit of information in either of two states as a 1 or a 0, a quantum bit has the additional capability of holding information as a 'superposed' state, having both 1 and 0 as probabilities. This is best explained by the famous Schrodinger Cat Thought Experiment, where a veal of poison kept in a box with a cat is closed, and until it is opened at a later time, one does not know whether the cat has succumbed to the poison or not, and representing its dead and alive states as 0 and 1, one says that before observation, the cat is in a superposed state containing both 0 and 1. The act of observation, termed measurement causes this superposed state to 'collapse' to either 0 or 1, thus reducing a qubit to a classical bit.



In a system with more than 1 qubits, it is possible that these qubits are simultaneously in superposed states, and that the state of any qubit is completely impossible to describe independent of other qubits – this phenomenon is called Quantum Entanglement.

For example, in a 2 qubit system AB, if both qubits are in superposition state with equal probabilities of collapsing to 00 and 01, then one knows that whatever be the outcome, A will collapse to 0, independent of B, whereas B might collapse to either 0 or 1.

On the other hand, if A and B are in superposition with equal probabilities of collapsing to 01 and 10, it is impossible to surely tell whether any of the bits A or B will collapse to 0 or 1. But, what is known is that if A collapses to 0, B necessarily collapses to 1, and vice versa. Thus, the state of A or B cannot be determined independent of each other.

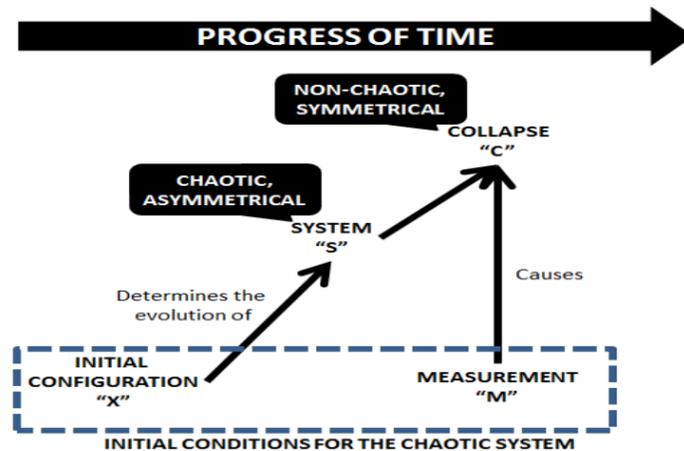
Also, the entangled relation holds instantaneously, no matter how far A and B are separated from each other, physically – a phenomenon Einstein had famously called 'spooky action at a distance'.

Extending this to a 3 Qubit system, one finds that there are 8 basic states possible – 000, 001, 010, 011, 100, 101, 110 and 111, with entanglements as combinations of these states in various proportions. Similarly in a 4 qubit system, as four, three, two or one qubits can be determined independent of the others, one observes classical case, superposition, minimal or maximal entanglement respectively. Mapping matter content or mass with information content, these states of entanglements have been seen in physics as equivalents representing high gravity systems and singularities such as black holes.

Chaos Theory is the discipline connected with nonlinearity in mathematics and physics, and the fundamental crux is the concept of sensitivity. Here, a certain system is seen to be chaotic when it is seen to be sensitive to the initial conditions that determine its evolution over time. In other words, even extremely small differences seen in the initial conditions quickly amplify into gross and massive differences in the course of time, due to the sensitivity of a chaotic system, with the consequence that it is extremely difficult to predict the value of a

chaotic system at any given instant of time, unless the initial conditions are known perfectly well without any error at all. This is comically described as the Butterfly Effect, where a butterfly flapping its wings, in succession of events gives rise to a huge tornado, miles away in another part of the planet.

As such, the Chaotic interpretation of Quantum Mechanics dwells on positing the equivalence between the qubit and a chaotic signal, saying that superposition increases the degree of chaos in the signal, and this is reflected in entropy, a measure of uncertainty. Subsequently, entanglement between two or more qubits is seen as interaction between the chaotic signals, in such a way as to maximize the information content or entropy. As a verification of this equivalence, in 2016, UCal scientists have obtained experimental proof to this entanglement- chaos equivalence: Nature Physics, 2016, Vol 12, Pages 1037-1041.



A Chaotic Interpretation of Quantum Mechanics, complete with discussing various features of this interpretation and where it stands on explaining many observed features, properties and phenomena of the quantum system forms the basis for extending this interpretation to the E8 ToE proposed by Garrett Lisi. The article is in viXra:1510.0437.

The E8 ToE is one of many candidate theories that promise to unite all known particles and forces into a single framework, and while simpler than other theories such as string theory and loop quantum gravity, the E8 ToE essentially postulated that the universe is a 4 Dimensional Space Time framework, where at each point in this fabric, one sees the E8 Polytope, which has 248 roots seen as its vertices.

As an over-simplified model, consider the spacetime as a 2D fabric, with the only force acting as the electromagnetic force. The electric and magnetic parts of this force are interconnected. Mathematically, this connection is seen as a circle $U(1)$. This implies that, at every point in this fabric is a circle, a vector (marking) on its topmost point. As long as the mark stays on top, the value of electromagnetic force (EM) is zero. If the mark moves from the top, caused by rotation of the circle, the EM force acquires a value. The rotation represents a charge – the electric charge. Thus there are two representations of the EM force – a “geometric space” (circle on a fabric) and a charge space (the value of electric charge at every point).

Now, along the same lines, consider a 248 dimensional structure moving along a 4 dimensional spacetime fabric. This is the E8 structure. This structure has not one, but 8 useful “markings”. Thus the geometric space of this is a 248 dimensional E8 on our 4 dimensional space time, whereas the charge space has 8 charges.

This means that the 248 roots are represented by a Charge Space, which contains 8 elements representing various types of charges such as spin and color, giving rise to properties such as mass.

<i>E8</i>	$\frac{1}{2}\omega_T^3$	$\frac{1}{2}\omega_S^3$	U^3	V^3	w	x	y	z	<i>F4</i>	<i>G2</i>	#
 $\omega_L^{\wedge/V} \omega_R^{\wedge/V}$	± 1	± 1	0	0	0	0	0	0	$D2_G$	1	4
 $W^\pm B_1^\pm$	0		± 1	± 1	0	0	0	0	$D2_{ew}$	1	4
 $e\phi_+ e\phi_- e\phi_1 e\phi_0$	± 1		± 1		0	0	0	0	4×4	1	16
 $\nu_{eL} e_L \nu_{eR} e_R$	$\pm 1/2 \dots$	$\text{even}\# > 0$			$-1/2$	$-1/2$	$-1/2$	$-1/2$	8_{S+}	l	8
 $\bar{\nu}_{eL} \bar{e}_L \bar{\nu}_{eR} \bar{e}_R$	$\pm 1/2 \dots$	$\text{even}\# > 0$			$1/2$	$1/2$	$1/2$	$1/2$	8_{S+}	\bar{l}	8
 $u_L d_L u_R d_R$	$\pm 1/2 \dots$	$\text{even}\# > 0$			$-1/2$	$\pm 1/2 \dots$	$\text{two} > 0$		8_{S+}	q_I	24
 $\bar{u}_L \bar{d}_L \bar{u}_R \bar{d}_R$	$\pm 1/2 \dots$	$\text{even}\# > 0$			$1/2$	$\pm 1/2 \dots$	$\text{one} > 0$		8_{S+}	\bar{q}_I	24
 $\nu_{\mu L} \mu_L \nu_{\mu R} \mu_R$	$\pm 1/2 \dots$	$\text{odd}\# > 0$			$-1/2$	$1/2$	$1/2$	$1/2$	8_{S-}	l	8
 $\bar{\nu}_{\mu L} \bar{\mu}_L \bar{\nu}_{\mu R} \bar{\mu}_R$	$\pm 1/2 \dots$	$\text{odd}\# > 0$			$1/2$	$-1/2$	$-1/2$	$-1/2$	8_{S-}	\bar{l}	8
 $c_L s_L c_R s_R$	$\pm 1/2 \dots$	$\text{odd}\# > 0$			$1/2$	$\pm 1/2 \dots$	$\text{two} > 0$		8_{S-}	q_I	24
 $\bar{c}_L \bar{s}_L \bar{c}_R \bar{s}_R$	$\pm 1/2 \dots$	$\text{odd}\# > 0$			$-1/2$	$\pm 1/2 \dots$	$\text{one} > 0$		8_{S-}	\bar{q}_I	24
 $\nu_{\tau L} \tau_L \nu_{\tau R} \tau_R$			± 1		1	0	0	0	8_V	1	8
 $\bar{\nu}_{\tau L} \bar{\tau}_L \bar{\nu}_{\tau R} \bar{\tau}_R$			± 1		-1	0	0	0	8_V	1	8
 $t_L b_L t_R b_R$			± 1		0	-1	0	0	8_V	q_{II}	24
 $\bar{t}_L \bar{b}_L \bar{t}_R \bar{b}_R$			± 1		0	1	0	0	8_V	\bar{q}_{II}	24
 g			0		0	1	-1	0	1	$A2$	6
 $x_1\Phi$			0		-1	± 1	0	0	1	q_{III}	6
 $x_2\Phi$			0		1	± 1	0	0	1	q_{III}	6
 $x_3\Phi$			0		0	$\pm(1 \ 1)$	0	0	1	q_{III}	6

In the E8 Theory, the eight charges in the charge space are represented by wT, wS, U, V, w, x, y and z. Among these, x, y and z and derived from three quantities namely g3, g8 and B2. Among these, the first two pertain to the color or flavor of a certain particle, characterized by red, green and blue gluons and their anti-colored counterparts, all of which mediate the strong nuclear force, which is responsible among other things, for maintaining protons and neutrons compact within the nucleus.

Defining the 3 colors and their anti-colors with 60 degree intervals in a 2-axes system with g3 and g8 as the horizontal and vertical, we get rg' and r'g gluons as (1,0) and (-1,0). The lower half denotes b' and upper denotes b, and by this, we get the other 4 gluons as (+/- .5, +/- 1.73/2).

$$\begin{bmatrix} B_2 \\ g^3 \\ g^8 \end{bmatrix} = \frac{1}{\sqrt{2}} \begin{bmatrix} \frac{-1}{\sqrt{3}} & \frac{-1}{\sqrt{3}} & \frac{-1}{\sqrt{3}} \\ \frac{-1}{\sqrt{2}} & \frac{1}{\sqrt{2}} & 0 \\ \frac{-1}{\sqrt{6}} & \frac{-1}{\sqrt{6}} & \frac{\sqrt{2}}{\sqrt{3}} \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$$

Also characterized by x, y and z are quarks and leptons, characterized by positive and negative 1/2 values, unlike integral values of +1 and -1 characterizing the gluons.

B₂, termed the Baryon minus Lepton number is related to the hypercharge, and $\frac{1}{\sqrt{2}}B_2$ characterizes colored and anti-colored quarks by negative and positive 1/6 values, whereas matter particles leptons, such as electrons are seen with - and + 0.5 values.

w_S and w_T represent spatial rotation and temporal movement respectively. Right and left chiral particles are represented by unlike or like signs of these two. Spin up and down are given by positive and negative values of w_S. All this forms the spin field.

Fundamentally, spin or angular momentum is a quantum property by which rotation of particle by certain angle brings back to its original state. A spin of 1 such as Bosons indicates that one must rotate by 360 degrees. Fermions, which have spin ½ means, a rotation of 720 degrees is required. The direction of spin in relation to direction of motion, is termed spin up or spin down. This can resemble one's thumb and curved fingers of right or left hand, and accordingly is designated as such. Thus "handedness" is the helicity of a particle.

A massless particle (like the photon) travels at the speed of light and one can never catch up to it. There is no "rest frame" in which a massless particle is at rest. On the other hand, a massive particle travels at less than the speed of light so that one *can* (in principle) match its velocity. One can move *faster* than a massive particle so that it looks like the particle is traveling in the *opposite* direction. The direction of its spin does not change. Thus, flipping only the particle's direction—and not its spin—changes the particle's helicity. This was a consequence of merely switching reference frames.

(Courtesy: <https://www.quantumdiaries.org/2011/06/19/helicity-chirality-mass-and-the-higgs/>)

By this understanding, mass is a property that indicates whether or not helicity is an "intrinsic" property of the particle. If a particle has any mass, then helicity is not an intrinsic property since observers in different frames of reference can measure different values for the helicity.

A more intrinsic property is chirality. A massive left-*chiral* particle may have either left- or right-*helicity* depending on reference frame. Chirality explains the direction of spin in both real and complex planes, the latter indicating its phase. Rotating an electron by 360 degrees, will give the same quantum mechanical state up to a minus sign, which is related to quantum interference. A fermion's chirality tells the path to this minus sign in terms of a complex number.

Denoting left and right chirality as e_L and e_R, spatial and temporal coefficients w_S and w_T are formulated such that w_L = w_S-iw_T and w_R=w_S+iw_T, i denoting imaginary number. Thus, with

in-phase or out of phase relationship established between spatial and temporal rotations, one formulates $wT/2i$ and $wS/2$ as the charge spaces.

The mass of a particle can be described as the interactions with a Higgs field, where particles like the top quark or Z boson undergo lots of interactions and so are observed to have larger masses, ie Higgs has a vacuum expectation value (vev) and that these particles are bumping up against it.

The understanding of vev comes from the fact that vacuum is in reality full of Higgs bosons. The quantum field for normal particle species like electrons or quarks is zero everywhere except where there are particles moving around. Particles are wiggles on top of this zero value. The Higgs is different because the value of its quantum field in the vacuum is *not* zero - the vev. The vev is the result of something called electroweak symmetry breaking and is related to the unification of the electromagnetic force and the weak force.

Physically one observes that a particle such as “left chiral electron”, is in reality a superposition of left chiral electron and right chiral anti-positron. For convenience, suppose that electron meant “left chiral” and positron “right chiral”. W bosons will only interact with electrons (left-chiral electrons and right-chiral anti-electrons) and refuses to talk to positrons (left-chiral positrons and right-chiral anti-positrons). The ‘anti’ term here indicates opposite charge and chirality. The “electron” (interacts with the W) is called e_L , or the left-chiral electron and the “anti-positron” (does not interact with the W) is called e_R , or the right-chiral electron.

The Higgs carries weak charge. When it obtains a vacuum expectation value, it “breaks” the conservation of weak charge and allows the electron to mix with the anti-positron, even though they have different weak charges. Or, in other words, the vacuum expectation value of the Higgs “soaks up” the difference in weak charge between the electron and anti-positron.

The force particle for electromagnetism is the photon, and for the weak force are the W_+ , W_- , and Z bosons. There are 4 Higgs bosons in the Standard Model. Three of them are absorbed by the Z and W bosons when they become massive.

Given that polarizations are different ways a quantum particle can spin, a photon can’t spin in the direction of motion (longitudinal polarization) since this would mean part of the field is traveling faster than the speed of light. A Polarization state can be thought of as an independent particle, or an independent “degree of freedom.” In this sense there are two photons: one which has a left-handed polarization and one with a right-handed polarization.

The difference between massless force particles (like the photon and gluon) and massive force particles (like the W and Z) is the longitudinal degree of freedom, which can only come from a spin-less (or scalar) particle - in essence, the W and Z seem to have an “extra particle’s worth of particle” in them. The particles that can be combined with massless force particles to form massive force particles are called Goldstone bosons.

These are the Four Higgs bosons: H^+ , H^- , H^0 , and h , where the former 3 are absorbed by the correspondingly charged W and neutral Z particles. These four Higgses are manifestations of a redundancy called gauge symmetry - an overspecification of a physical state such that distinct 4-vectors may describe identical states.

“The Higgs Boson”, the h particle gets a vev. everywhere in spacetime there Higgs field is “on.” However, the Higgs carries weak charge—so if it is “on” everywhere, then something must be ‘broken’ with this gauge symmetry - the preference to Higgs’s weak charge.

To understand electroweak symmetry breaking, one starts with the fact that the W^+, W^- and Z are in essence made of 3 W particles and one B boson, all massless. In the electroweak theory are two massless gauge bosons (2×2 polarizations = 4 degrees of freedom) and two charged Higgses (2 degrees of freedom) for a total of six degrees of freedom. In the broken theory, we have two massive gauge bosons (2×3 polarizations) which again total to six degrees of freedom.

The W^3 and B combine and eat the neutral Higgs/Goldstone to form the massive Z boson. Meanwhile, the photon is the leftover combination of the W^3 and B . There are no more Higgses to absorb, so the photon remains massless.

The Potential is a function that tells you the energy of a particular configuration. The Higgs potential is termed a “Mexican hat” potential, whose concave relates to its mass. Because of this, the minimum value is no longer at the origin but away from it, and rotating operations will change the configuration.

In the unified theory where electroweak symmetry is unbroken, these four Higgses can be rotated into one another and the physics doesn’t change. However, when we include the Mexican hat potential, the system rolls into the bottom of the Mexican hat: one of the Higgses obtains a vev while the others do not. Performing a “rotation” then moves the vev from one Higgs to the others and the symmetry is broken—the four Higgses are no longer treated equally. This is the electroweak symmetry breaking spontaneously.

One then understands that the electroweak gauge field, denoted by W , (combining the aspects of the electromagnetic force mediated by photons and responsible for electricity and magnetism determined respectively by electric charge and spin orientation, as well as the radioactivity inducing weak nuclear force), acts on left-chiral pairs of quarks and other particles. By introducing a partner B_1 acting on right chiral doublets of fermions, which are matter particles such as electrons, one observes part of B_1 acting along with B_2 to give electroweak B .

W and B_1 acts on the Higgs doublet, which is responsible for the mass property, and in essence, just as w_L and w_R yielded w_T/i and w_S , one obtains charge spaces U and V from W and B_1 , since $V=W-B_1$ and $U=W+B_1$. Subsequently, electrical charge is given as $Q = U + (x+y+z)/3$. From B_1 and B_2 , one obtains the weak force hypercharge Y , and the positive

combination of the quantum numbers B1 and B2 yield a new quantum number partner to the hypercharge X.

At every spacetime point, we can imagine three perpendicular rulers and a clock, called a frame of reference. Without the frame, spacetime would not be “spacetime” but just a four-dimensional fabric with no sense of orientation or distance. As we move to different points in spacetime, there are different sets of rulers and clocks, related to our original frame by a rotation. This rotation can be an ordinary rotation in space or, because Einstein showed that space and time are unified, a rotation of space into time. How the frame rotates from point to point is determined by the spin connection, more commonly known as the gravitational field. We feel the force of gravity because the gravitational spin connection field is rotating our frame as we move through time, attempting to steer us toward Earth’s center.

The frame, e , is denoted by integral w_S and w_T values, and half integral w_R - w_L values. Each of the 4 Higgs Boson fields H_+ , H_- , H_0 and h , are combined with the 4 frames e_S up/down and e_T up/down, to give 16 fields.

Understanding fundamentally that particles are just excitations of their corresponding fields in localized regions of space time is key in quantum field theory. Starting with a hypothetical particle completely massless and spinless, interacting with the w_S and w_T would give it an inherent spin and thus chirality. It would then interact with the frame Higgs Field of corresponding S/T would render curvature of space time corresponding to the vev. Interacting with the frame Higgs n number of times would account for n times this space time curvature and hence gravitational strength.

From this, one bundles together the connections pertaining to spin, electroweak, the frame of coordinates (the acceleration and curvature in which denote gravitational force), and the Higgs into a single “graviweak” group, represented by charge space of w_L , w_R , W and B_1 .

One observes here a triality relation, where rotating the system by $2/3$ of π leave it invariant. In other words, denoting the triality operator as T , one sees $TTT w_R = TTB_1 = Tw_L = w_R$. Thus, three generations of fermions are obtained by appropriate use of the triality.

Putting these charge values together as an 8 -tuple creates the E8 charge space as mentioned earlier, along with a new quantum number w , related to generations.

One presumes that the X and w have large masses, causing impediments to their measurement. The quantum number X is the Pati Salam partner to weak hypercharge. The B_1 field interacting with right chiral fermions is also non-standard. Correspondingly, the E8 includes mirror Fermions, which are right chiral particle-left chiral antiparticle pairs. Since the weak force acts only on left chiral particles, the mirror fermions would be inert to it, and could be detected only using gravity.

Also included in the E8 model are axions, potential candidates for Dark Matter, originally proposed by Peccei-Quinn for resolving the strong CP problem - that is, when charges and chiralities are reversed, Quantum Chromodynamics, or the strong nuclear force still holds, and Charge-Parity or CP symmetry is not violated, which contradicts CP violating terms found in the QCD Lagrangian.

The resolution to this problem is to understand the CP violating term θ as a field, by virtue of the Peccei Quinn symmetry, which becomes spontaneously broken. This would result in the formation of a particle, the axion. Axions could change from and to photons in magnetic fields, while interacting minimally with ordinary matter, having zero spin and charge.

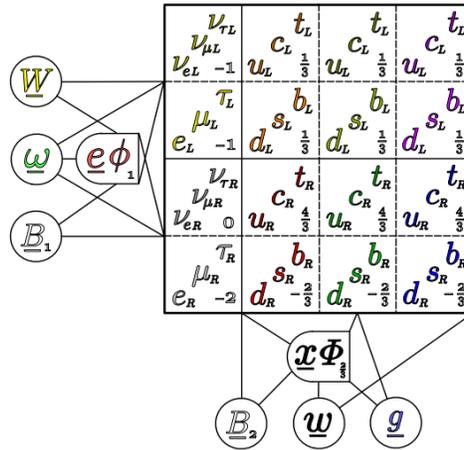
It is presumed that axions were created abundantly during the big bang, but with the field having an initial value not near a potential minimum, the axion fields dissipates energy, decaying to other particles until the minimum is attained. This is called misalignment mechanism, and due to dynamical friction creates significant loss of kinetic energy. Being low mass, the universe would be filled with a cold Bose-Einstein condensate of primordial axions. Furthermore, axions would explain and also be a possible origin for the luminosity and wavelength of Fast Radio Bursts.

A Bose-Einstein condensate (BEC) is a state of matter of a dilute gas of bosons cooled to temperatures very close to absolute zero. Under such conditions, a large fraction of bosons occupy the lowest quantum state, at which point microscopic quantum phenomena, particularly wavefunction interference, become apparent. A BEC is formed by cooling a gas of extremely low density, about one-hundred-thousandth the density of normal air, to ultra-low temperatures.

Using these quantum numbers forming the 8 valued charge space, one is able to identify the 222 known particles and their weights, out of a total set of 240.

The remaining 18 particles pertain to the new field $x\Phi$, that carries weak hypercharge and color, has three generations depending on the w value, and couples leptons to quarks. Just like Higgs scalars for e_S and e_T , the there are Φ Higgs Scalars for each color and anti-color.

The interactions between the w and new Higgs fields are analogous to those between the gravitational spin connection (w_L, w_R) and the frame--Higgs product. A periodic table of the E8 highlighting all the interactions mediated by the E8 Lie Structure is as follows:



In the E8, the coupling constants are unified at high energy, and the cosmological constant and masses arise from the vevs of the Higgs Fields.

Thus, using the eight valued charge space, one is able to understand the mappings between various particle properties and fundamental forces of nature to the eight charges. For any given particle, the 8 charges, which form a generic 8 Tuple set of values are then seen as proportions or weights of the 8 fundamental states of a 3 Qubit system. These 8 fundamental states form the representation of how the 3 Qubits entangle to manifest as the particle in question.

To start with, we understand the three qubits as chaotic signals. These are the 3 components A, U and M of Om. The classical and superposed states correspond to regions of order and chaos on the signals, corresponding to low and high entropies respectively. The nature of the signals as qubits rather than as analog signals determine the inherent discreteness of quantum mechanics.

In Vedic parlance, the three components are alluded to their nature of creation, preservation and destruction, and together represent Bha, Ra and Va in the name Bhairava. There are 8 Bhairavas, and these represent the 8 states of the 3 qubit system.

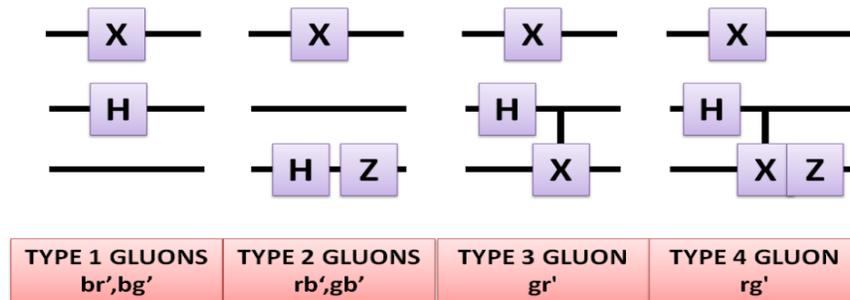
Specifically, the 8 tuple (z,y,w,x,U,V,wT/2i,wS/2) is seen as the equivalent of the eight states (000,001,010,011,100,101,110,111) of |AUM>.

By weighted combinations of the 8 states, any of the 240 particles can be constructed. In doing so, one will observe that merging certain combinations of the states will bring about entanglement of the 3 qubits.

For example, consider the case of a particle where charges corresponding to states 001 and 111 have values of 1, all other charges remaining zero. The particle would be represented as 001+111. In this configuration, the third qubit is a definite 1, while the first two qubits are in the entangled state 00+11. On the other hand, Configurations such as 001+110 would entangle all three qubits.

A fundamental experimentally verified aspect of chaotic interpretation of quantum mechanics is that entanglement is a state of high chaos and thus high asymmetry and high entropy. Thus, going from basic qubits to the 8 states to the 240 particles increases entropy systematically. This would align well with the second law of thermodynamics.

For simplicity, suppose that the 8 states 000 to 111 represent the charges of E8 in the order from w to z, as originally proposed the model. For example, six gluons can be prepared from the $|000\rangle$ vacuum state as shown below. The fundamental operations required to construct the various elementary particles and their interactions from a vacuum state are the quantum gates such as Pauli X Gate or “Bit-Flip”, Pauli Z Gate or “Phase-Flip”, Hadamard Gate converting pure states into superposed states and vice versa, and the Controlled NOT or CNOT Gate.



While these discussions revolved around the E8 Theory, one must note that this concept holds good for other theories, including String Theory. The essence here is simply representing a charge space of finite number of charges by entangled states of qubits, and by extension chaotic signals. This will work for other models too, albeit with a different number of charges, qubits and hence signals.

A unifying theory similar to the E8, uses the Spin (11,3) Lie Group. This Lie group allows for blocks of 64 fermions and, amazingly, predicts their spin, electroweak and strong charges perfectly. It also automatically includes a set of Higgs bosons and the gravitational frame. The curvature of the Spin(11,3) fiber bundle correctly describes the dynamics of gravity, the other forces and the Higgs. It even includes a cosmological constant that explains cosmic dark energy. Everything falls into place.

But skeptics object that such a theory should be impossible. It appears to violate a theorem in particle physics, the Coleman-Mandula theorem, which forbids combining gravity with the other forces in a single Lie group. But the theorem has an important loophole: it applies only when spacetime exists. In the Spin(11,3) theory (and in E8 theory), gravity is unified with the other forces only before the full Lie group symmetry is broken, and when that is true, spacetime does not yet exist.

Our universe begins when the symmetry breaks: the frame-Higgs field becomes nonzero, singling out a specific direction in the unifying Lie group. At this instant, gravity becomes an independent force, and spacetime comes into existence with a bang. Thus, the theorem is always satisfied. The dawn of time was the breaking of perfect symmetry. (<http://li.si/SciAm.pdf>).

What does this mean? This means that prior to the Big Bang, in informational space, the 3 chaotic signals exist in the 8 states. One can look at the 8 states as independent signals in their own right.

The mathematical perfection and symmetry of the E8 Lie Group and its various subgroups are brought about by the specificity of interactions between the states, and thus the charge values of the 240 particles.

Genesis of the Universe

At the core of Vedic faith are the 33 Gods, long before the Puranic era of Shaiva Vaishnava sects etc. They are sometimes mentioned as 33 crore Gods, but the word Koti is used here in a sense of qualitative greatness rather than quantitative. The 33 Gods are often split into groups: the 12 Adityas, 11 Rudras, 8 Vasus and 2 Ashvinis. All these have scientific significance through their mapping with the Panchadashi, which is the first 15 of the 16 stages, since the 16th is considered to be Amma Herself, in Samashti.

Of these, In the Panchadashi, the 11th stage Ekadashi as Hanuman represents the 11 Rudras. The Hanuman stage denotes the realm of Will or Iccha Shakti.

There are two prominent lists of Rudras. One from the Mahabharata is a generic list, while the other is particular to the present Kalpa, given along with the names of consorts. The latter eleven Rudras are versions of the former specific to the present age. Thus, the mappings are given, with consort names in parantheses.

Mrigavayadha-Mahadeva (Dhee)
Sarpa-Hara (Dhruthi)
Nirrti-Maharudra (Ushna)
Ajaikapada-Shankara (Uma)
Ahibudhnya-Neelalohita (Neeyut)
Pinaki-Eeshana (Sarpi)
Dahana-Vijaya (Eela)
Iswara-Bhima (Ambika)
Kapali-Devadeva (Airavathi)
Sthanu-Bhavodbhava (Sudha)
Bharga-Adityatmaka (Diksha)

To understand the Rudras scientifically, one must understand the cosmology of the universe in its timeline starting with the big bang. We understand that the “dawn of time” essentially is the instant where the Higgs field is non-zero. This follows from the fundamental fact stated by General Relativity: Spacetime tells matter how to move, and matter tells spacetime how to curve.

From the quantum chaos equivalence seen earlier it follows that more chaos is synonymous with more information, more entropy, and also more asymmetry. One can extend this understanding to Seth Lloyd’s Computational Universe models, [arXiv:quant-ph/0501135v9](https://arxiv.org/abs/quant-ph/0501135v9), where one finds information mapped to matter and hence mass. Through this, one can infer that more mass is synonymous with more information, and more chaos/asymmetry. Thus, one can see creation of the universe the journey from nothing to something, and this means increase in matter, or asymmetry, or entropy. This is consistent with the second law of thermodynamics: entropy is always on the rise in a closed system.

Thus in summary, the following is how one would explain the creation of the universe:

We start with a primordial vibration called Pranava Om, which is the Universal Wave function, and the Grand Field of all of the particles. Prior to Big Bang, this remains homogenous, and exists only in the non physical informational space. We understand the three qubits of E8 as chaotic signals. - These are the 3 components A, U and M of Om. The classical and superposed states correspond to regions of order and chaos on the signals, corresponding to low and high entropies respectively. The nature of the signals as qubits rather than as analog signals determine the inherent discreteness of quantum mechanics.

Consequently, one can see the 3 signals in 8 states from 000 to 111. These correspond to the 8 Charges explained later as the 8 Vasus.

Next, in a move increasing the chaos and asymmetry, the three signals entangle their 8 states to create 240 combinations, representing the fundamental particles.

Consequently, the three signals now exist as a composite signal consisting of weighted combination of the 240 entanglements.

The birth instant of the universe is the breaking of E8 symmetry - the transition from symmetrical zero Higgs Field to asymmetrical E8 with non-zero Higgs field.

This is done through the weights, particularly because of the non zero weights for the Higgs Field. Thus, there are two factors increasing asymmetry - first by increase of chaos through entanglement of the 8 states, and second by breaking the E8 symmetry by the Higgs.

This symmetry to asymmetry is fundamentally the play of Chaos, as explained above. Chaos, or Disorder, is the literal translation of the word Nirruti, Nir meaning lack of, and Ruti or Ruta translating as order. Thus, the third Rudra, Nirruti or Maharudra, corresponds to the Divine play of Chaos, by making the Higgs field non-zero, thus 'birthing' the universe.

Immediately, what ensues is the 'Singularity', what is popularly called the Big Bang. The name Ajaikapada is made up of three components, Aja meaning unborn, Eka referring to the singularity, Pada meaning foot, alluding to the universe brought into existence or 'standing up' as a physical entity. Clearly, of the 11 Rudras, Ajaikapada or Shankara is the most crucial, and Lord Krishna affirms this in Bhagavad Gita. Also, Ajaikapada is Hanuman, who is the consolidation of all 11 Rudras.

It is very important to understand that the symmetry breaking of Nirruti is in the informational space of the E8. There is no physical space, and the size of the universe is simply zero. As Stephen Hawking said in "A Brief History of Time": 'At the big bang itself the universe is thought to have had zero size... the total energy of the universe is zero. Now twice zero is also zero. Thus the universe can double the amount of positive matter energy and also double the

negative gravitational energy without violation of the conservation of energy... as the universe expanded, the temperature of the radiation decreased'.

General Relativity, when extrapolated to the Big Bang predicts an infinite density, and infinite temperature. This is possible since size and volume of the universe is zero. Before Nirruti, the density would be an indeterminate 0/0, since the Higgs field is zero. However, making the Higgs non-zero would mean that mass/volume or mass/area values would now result in non-zero numerators but zero denominators, resulting in infinite density etc.

To summarize, this state of the universe, the big bang, brings the universe into physical existence by virtue of non zero Higgs. At this stage, the universe is the size of Planck length, which is the smallest length possible. Thus, the universe transitions from unborn Aja to physically existing Pada with unit size Eka. This is Ajaikapada.

This state, the Shankara Rudra represents the earliest stages of the universe from the Big Bang, until 10^{-36} s after the Big Bang. Because of the inherent discrete nature of quantum mechanics, the smallest indivisible unit of time is the Planck time, at 10^{-44} s, and this is the time light takes to traverse the planck length at 10^{-35} m.

Thus, earlier than 10^{-44} s, the universe is a singularity, as discussed above. Next, the Higgs symmetry breaking separates gravity from the other three fundamental forces - electromagnetic, strong and weak nuclear, which are still united as one force. This time period until 10^{-36} s is called the Grand Unification Epoch.

The E8 explains Unification of Strong with the Weak and Electromagnetic forces through B1 a hypercharge which favors right handed particles mirror to the conventional weak hypercharge Y. B1 works in tandem with baryon-lepton number B2 and color charges g3 and g8, to give electric charge Q. Consequently, there are mirror fermions as part of the 248 particles accounted for.

To understand what happens next, it is necessary to understand the implications of General Relativity, written as the Friedmann Equations with the cosmological constant Λ .

$$H^2 = \left(\frac{\dot{a}}{a}\right)^2 = \frac{8\pi G}{3}\rho - \frac{kc^2}{a^2} + \frac{\Lambda c^2}{3}$$

$$\frac{\ddot{a}}{a} = -\frac{4\pi G}{3}\left(\rho + \frac{3p}{c^2}\right) + \frac{\Lambda c^2}{3}$$

An alternate form of these equations is the FRW form as shown below.

$$\dot{\rho} = -3(\rho + p)\dot{a}/a$$

$$4\pi G(\rho + 3p)/3 = -\ddot{a}/a$$

$$8\pi G\rho/3 = \dot{a}^2/a^2 - k/a^2,$$

a is the scale factor representing the size of the universe. Thus, a' is the rate at which the scale factor changes ie, expansion of the universe. One can also characterize this as the Hubble Parameter $H=a'/a$. Moreover, a'' is the rate of change of a' , ie a'' is the rate at which expansion occurs. The ρ denotes energy density, which is a measure of the amount of matter or equivalent radiation energy within a given volume, matter and energy related by the famous relation $e=mc^2$. p denotes pressure, caused by rapid movements of particles, which causes mass dilation by special relativity. This relativistic increase in mass, as well as mass and energy described in ρ , all contribute to the stress-momentum energy tensor of general relativity, ultimately resulting in the spacetime curvature. k denotes the curvature, and thus the very shape of the universe. Values of +1, -1 and 0 for k denote positive curvature (spherical universe), hyperbolic negative curvature and flat universe. Measurements have beyond doubt confirmed that the universe is indeed flat with $k=0$.

Further, taking on-diagonal and off-diagonal parts of the stress momentum energy tensor as Kinetic Energy K and Potential Energy U respectively, we have $p=K/3-U$, and $\rho=K+U$. Also, comparing the Friedmann and FRW forms, it is easy to understand U as representing the Cosmological constant Λ . Using all this, one obtains a simplified set of equations involving just K and U in relation to inflation parameters a and H .

$$-16\pi GK/3 = \dot{H} \quad (3.4a)$$

$$8\pi G(K + U)/3 = H^2 - k/a^2. \quad (3.4b)$$

In the first instance following big bang, clearly there is no matter or radiation, and $K=0$. This sets H' as 0, making H constant. Therefore, there is inflation at a constant rate.

This is a very significant stage in the creation of the universe and explains many observed facets of the universe such as among others, its nature to be isotropic and flat, and the lack of magnetic monopoles.

What does inflation mean? It means that the spacetime itself expands. In other words, the region in which one would find the E8 composite signal increases in chunks of size Planck length, correspondingly increasing the relevance of mass and thus matter and spacetime.

The composite signal now present for every space-time forms the Universal Field, which is the basis of quantum field theory. Included in this field are the 240 entangled components, which are the 240 particle fields. Variations in the weights represent the field variations or quantum fluctuations, with particles popping in and out of existence from this base field..

From the Heisenberg uncertainty principle, one knows that there is no way to exactly pinpoint both momentum and position of a particle simultaneously. Similarly, there is no way to pinpoint the exact energy of a system at an exact instant of time, and all this follows from the inherent uncertainties of Quantum Mechanics. This is in turn due to very minute changes in initial conditions of the chaotic signals, blowing up to vast variations in course of time.

This energy-time uncertainty has a very significant implication. At any precise instant of time, the energy of a system is never a fixed value, but a vast compilation of fluctuations, called quantum fluctuations. These create 'virtual particles', such as photons seemingly out of nothing. The Feynman diagrams describe how these virtual particles can mediate various particle interactions through the four fundamental forces. As the universe expands, in various regions, one finds these quantum fluctuations giving rise to various particles. These are in essence, "local inhomogeneities".

At this stage, owing to formation of some particles, the strong nuclear force starts behaving differently to the other forces, and the grand unification breaks, giving rise to an 'electroweak' force, and a color based strong nuclear force. This period is known as the "Electroweak Epoch".

The electroweak force is characterized by photons. However, the inflation of the spacetime ensures that the wavelengths of photons are continuously stretched as they travel through space. This is called "Redshift", and because of this phenomenon, we observe that photons in visible and higher regions of Electromagnetic spectrum have been stretched over billions of years, to infrared and even microwave frequencies. This forms the Cosmic Microwave Background or CMB, which can be measured in the present age, which gives vital observations about the early stages of the universe.

It is based on this phenomenon that we obtain the 5th Rudra - Ahirbudhnya or Neelalohitha. Neela means blue, and Lohitha means red. The name describes a transition from blue to red, which is nothing but the redshift mentioned above. The name itself connotes stretching of wavelengths, which comes from an inherent stretching of space-time itself, ie, inflation. Thus, the Neelalohitha Rudra represents the Inflationary epoch directly following the Singularity of Shankara.

The inflationary epoch is typically stated to last until 10^{-32} s, after which inflation slowed down considerably. This is due to the local inhomogeneities eventually give rise to mass, and thus K , by virtue of both density and pressure. However, $U \gg K$, and thus inflation still goes on, albeit, since K is now positive and non-zero, H' becomes negative ie, the rate of inflation slows down. Ideally, this should continue until $K > U$, which would make $a'' < 0$, and cease inflation fully.

It is here that one must understand the significance of the cosmological constant Λ .

Physical observations since the days of Hubble show beyond doubt that the universe is expanding at an accelerated rate; galaxies are moving farther from each other. In the earliest versions of the second Friedmann equations without Λ , this could not have been possible, since the creation of mass would render both p and ρ positive, making a'' negative, and thus making the universe contract rather than inflate. Thus, the only factor enabling inflation is Λ - the mysterious force still keeping the universe inflating.

How does Λ work? Cosmological constant is referred to as vacuum energy or dark energy - an "energy" inherent to space itself - empty space. If dark energy is viewed as a combination of p

and p just like ordinary matter, then one would observe that p is positive, favouring contraction rather than inflation.

However, dark energy has a very important property - it has constant density. Since it is an inherent quantity of space, as the universe inflates, the bigger space becomes, the bigger is the dark energy. Equivalently, one might start with constant energy. As the universe expands, energy is pumped from 'outside' into the expanding space. In other words, it takes "work" to expand dark energy. This is viewed as "negative pressure" p - in contrast with normal matter with positive pressure, where one must 'work' to compress. Then, in the Friedmann equation the dark energy term would surpass the combination of matter p and ρ , to give inflation a'' positive.

This view of Dark Energy violates the conservation of energy: as the universe expands, where does the extra energy pumped in come from, given that energy cannot be created or destroyed? The only way to explain this is that the inherent 'dark energy' of space is nothing but its information energy, which is as valid a kind of energy as potential and kinetic.

There is another interesting facet to dark energy, which makes up 68% of the universe today. Observations and measurements of the universe show it is flat. However, from the first Friedmann equation, if Λ were excluded, one would observe a hyperbolic -1 for k , if the observed matter in the universe, contributing to p and ρ , as well as observed values of a and H were incorporated. There is no way of explaining the flat structure of universe with $k=0$, without the dark energy term Λ . The reason for this is the constant positive density ρ of dark energy. Thus, in expanding space, even in regions where matter is not existent, the ρ of dark energy works in favour of matter, counteracting the hyperbolic curvature tendency of inflating a' .

However, the role of dark energy in primordial inflation corresponding to current inflation is vastly different in orders of magnitude, as many as 10^{60} times weaker today. This can be explained as locally potential dominated universe causing both inflations.

Thus in summary so far, 3rd Rudra Nirruti creates chaos/asymmetry by making Higgs field non-zero. This is followed by the 4th Rudra Ajaikapada which is the singularity of big bang, where gravity breaks apart from the other three forces. This is followed by the 5th Rudra Neelalohitha, which is the inflation of spacetime, creating along with it the dark energy.

Meanwhile, the local inhomogeneities coalesce to form various particles. These further form matter, as we know it, in various densities ranging from least to highest. These are described as the Pancha Bhutas and form the 6th to 10th Rudras.

The 6th Rudra is Eeshana or Pinaki. Among the five faces of Lord Shiva, Eeshana is Akasha, the least dense of the states of matter. Translated variously as space, ether etc, Akasha in general is a framework where other states of matter exist and interact. Akasha itself, while a state of matter does not interact with the others.

This is the description of dark matter, making up about 85 percent of observed mass in the universe. It is difficult to detect dark matter, which does not interact with the fundamental forces other than gravity. In the absence of dark matter, galaxies would fly apart instead of rotating, or would not have formed. Dark matter can also be observed from gravitational lensing, CMB and galactic collisions.

Various candidate particles have been proposed for dark matter, most prominently WIMPs. In the E8 model, axions are the candidates for dark matter, originally proposed by Peccei-Quinn for resolving the strong CP problem - that is, when charges and chiralities are reversed, Quantum Chromodynamics, or the strong nuclear force still holds, and Charge-Parity or CP symmetry is not violated, which contradicts CP violating terms found in the QCD Lagrangian.

The resolution to this problem is to understand the CP violating term θ as a field, by virtue of the Peccei Quinn symmetry, which becomes spontaneously broken. This would result in the formation of a particle, the axion. Axions could change from and to photons in magnetic fields, while interacting minimally with ordinary matter, having zero spin and charge.

It is presumed that axions were created abundantly during the big bang, but with the field having an initial value not near a potential minimum, the axion fields dissipates energy, decaying to other particles until the minimum is attained. This is called misalignment mechanism, and due to dynamical friction creates significant loss of kinetic energy. Being low mass, the universe would be filled with a cold Bose-Einstein condensate of primordial axions. Furthermore, axions would explain and also be a possible origin for the luminosity and wavelength of Fast Radio Bursts.

A Bose-Einstein condensate (BEC) is a state of matter of a dilute gas of bosons cooled to temperatures very close to absolute zero. Under such conditions, a large fraction of bosons occupy the lowest quantum state, at which point microscopic quantum phenomena, particularly wavefunction interference, become apparent. A BEC is formed by cooling a gas of extremely low density, about one-hundred-thousandth the density of normal air, to ultra-low temperatures.

Thus, the 6th Rudra Eeshana pertains to the creation of Akasha, or Dark Matter, which forms the first and least dense of the Pancha Bhutas.

Following this stage, one observes creation of various fundamental particles. Between about 10^{-12} to 10^{-6} s, is the Quark epoch - a quark-gluon plasma of high energy. However, as the time increases, upto about 1s, one sees the Hadron epoch, where quarks are bound into hadrons such as mesons and baryons such as protons and neutrons. Baryon Asymmetry as a result of earlier stage quantum fluctuations rules out antimatter, favouring matter. Following this is the Neutrino decoupling, where the neutrinos cease interacting with Baryonic matter, followed by Lepton epoch until 10s, where leptons and anti-leptons remain in thermal equilibrium.

Following this, until 10^3 s, protons and neutrons bind to form the primordial nuclei of hydrogen and helium, along with isotopes. Most of the energy in this Nucleosynthesis epoch is still electromagnetic radiation. From the end of this epoch until 380ka, is a long period of the Photon

Epoch, where the universe contains a plasma of electrons and protons, yet unbound to form atoms.

All these stages, right from 10^{-12} s till end of photon epoch at 380ka, constitute creation of various subatomic particles. Atoms, mandating charge neutrality haven't been created yet, and thus the matter in this phase comprises of charged particles. This ionized matter is called plasma, the state of matter represented as Agni among the Pancha Bhuthas. This is the 7th Rudra Vijaya or Dahana, meaning to burn.

Further to this, we encounter the recombination at 380ka, where the first neutral atoms are formed. Photons are no longer in thermal equilibrium with matter; universe becomes transparent, and baryonic matter density is atleast a billion times higher than that of today. This is followed by the formation of first stars until 150Ma, with the only source of photons as hydrogen emitting radio waves, and infrared photons due to CMB red-shift. Reionization and Galaxy formation periods until 10Ga denote coalescing into galaxy clusters and superclusters.

This entire duration of time, from 380ka to 10Ga results in formation of matter, as we know it. Most of this is gaseous, while right temperature and gravitational conditions could create liquid and solid matter too. These states of matter are Vayu, Jala and Prithvi among the Pancha Bhuthas, and are represented by the 8th, 9th and 10th Rudras - Iswara or Bhima, Kapali or Devadeva and Sthanu or Bhavodbhava respectively. Interestingly Bhima is also the name of the Pandava in Mahabharata, who is seen as the son of Vayu. Also, Devadeva with consort Airavathi has connotations with Indra, who is King of the Devas, whose mount is the elephant Airavatha. Indra is the God of rain, corresponding to water, and hence liquids.

The above-mentioned duration, from about 47ka to 10Ga is also called the Matter-Dominated Era, where matter density dominates radiation density and dark energy. From the FRW equations stated earlier, it must be noted that $K > 3U$ corresponds to ordinary matter and radiation, while $K < U$ is energy undergoing inflation. K between U and $3U$ is non-inflating "negative pressure" matter, speculated to be cold dark matter, existing in the halos of galaxies.

After 9Ga until the present age, ie 14Ga, we find that matter density falls below dark energy density, leading to accelerated expansion of space in the Dark Energy dominated Era. This is the same timeline of the formation of the Solar System, with the sun at its center. This leads to the name of the 11th Rudra, Bharga or Adityatmaka, Aditya being a name of the Sun. This era also encompasses the evolutionary history of life.

Thus far, we have seen Rudras 3 to 11 in their role of universe creation. Rudras 1 and 2 represent the universe prior to the Big Bang, and thus are seen best in metaphysical rather than physical roles. In essence, these Rudras represent the 'blue-print' of the universe in informational space, prior to creation.

The 1st Rudra is Mahadeva, whose name is derived from Mahad, meaning greatness. The consort Dhee represents the consciousness. This fundamental consciousness is the first Rudra, the primordial vibration, which is called Pranava.

The second Rudra is variously called Shiva, Hara and Sarpa. The Devi is called Dhruthi, meaning adorned. Fundamental consciousness Pranava undergoes variations in its three components A, U and M. These are the fundamental trio of qubits seen as chaotic signals. Together, in various entangled states, they would materialize into the E8 charge space, which is explained in the earlier article. The Divine Perfection of creation is reflected in the exceptionally beautiful symmetry of the E8 structure. This symmetry determines the ways in which the 3 signals can get entangled.

Following this, is the 3rd Rudra Nirruti, which corresponds to creating an asymmetry in the E8 as explained earlier, kickstarting the physical creation of the universe.

Thus, one can see that the 11 Rudras, of the 11th (Ekadashi) among Panchadashi, represent various stages in the creation of the universe, all the way from the Big Bang to the present era. The Rudras are represented in the five faces of Hanuman. These five Mukhas are depicted as Vishnu Amsas to highlight Hanuman merging into Rama through Sharanagathi. But these faces are also the five faces of Shiva, representing the Pancha Bhuthas, through their inherent qualities and characteristics. The mapping is described below.

1. Prithvi, representing stability and fertility: Sadyojatha Shiva as Garuda Mukha - Solid matter Rudra Bhavodbhava and Mahadeva Rudra presiding fertile creation.
2. Jala, representing waves and flow: Vamadeva Shiva as Varaha Mukha - Liquid matter Rudra Devadeva and Hara Rudra representing Pranava wave trio.
3. Agni, representing energy and ionization: Aghora Shiva as Narasimha Mukha - Plasma matter Rudra Vijaya and Maharudra representing asymmetry in E8 charge space.
4. Vayu, representing expansion and wind: TatpuruSha Shiva as Vanara Mukha - Gaseous matter Rudra Bhima and Shankara representing big bang explosion.
5. Akasha, representing inertness and space: Eeshana Shiva as Hayagriva Mukha - Dark Matter Rudra Eeshana and Neelalohitha representing spacetime inflation.

Finally, It is interesting to note that the Rudras are mentioned as sons born out of Lord Shiva, none of the 11 being older or younger than the others. The significance of this statement is twofold. First, while the Rudras represent various epochs in the history of the universe, one can also see their aspects today, in various forms such as dark energy, dark matter, gases, solids, plasma, solar system etc. Thus, the end of certain epochs do not mean the end of a Rudra, but survival all the way until eternity. Second, this statement of Rudras being same age, confirms the Drishti Srishti nature of the universe. Ultimately, the universe is but a creation of Maya, through the mind, just as a dream. Just as when one drifts into sleep dream worlds instantaneously exist, the universe instantaneously exists by virtue of Maya. The Krama srishti, or ordered creation of universe is but an illusion.

Vasus - the Charges

In Panchadashi, the 5th stage is Bhairava. Earlier articles explained how the 5th 11th and 15th stages represent the three Shaktis, of which Bhairava is Jnana.

Scientifically the three represented energy realms of Information, Potential and Kinetic, the latter two representing the dark energy and the five states of matter.

The information realm, which is Bhairava, is denoted by the, 8 charge E8 structure, which is nothing but entangled states of three chaotic signals.

These 8 charges, can be seen as represented by the 8 Bhairavas in combination with the 8 Matrikas or Yoginis. These also represent the 8 Vasus.

The charges x, y and z are transformed versions of the g3 and g8 which denote the colour or flavor responsible for strong nuclear force, and B2 the baryon lepton number, which indicates presence of color charge holding quarks. These three represent the energies of Brahma, Vishnu and Shiva as Brahmi-Asithanga, Vaishnavi-Krodha and Maheshwari-Ruru Bhairavas. They also denote respectively the Three Vasus Prithvi, Vayu and Agni which are earth, air and fire respectively.

The charges wS and wT denote rotations and movements in space and time which can describe the force of gravity as well as other concepts like frame, spin and mass. Space as Iccha Shakti is Lakshmi and time is Mahakala or Mahakali. Thus, these represent the two Bhairavas as Mahalakshmi-Samhara and Chamunda-Bheeshana. All pervading space or Antariksha and the motionless Dhruva or Nakshatra are the respective Vasus.

The charges U and V together denote weak and electromagnetic forces. They are obtained as a transformed version of the W and B1 charges which act on left and right handed particles respectively. The former denotes visible matter and the latter is its antithesis. The right handed and left handed are the Surya and Chandra Nadis or the Vasus Surya and Chandrama respectively. They denote Varahi-Unmatta and Mahendri-Kapala Bhairavas, since Varahi denotes pride over what exists and Indrani denotes envy for what doesn't - this dichotomy is the case for matter and its antithesis.

Finally the charge w represents Generations of particles such as quarks. Furthermore, non standard model particles similar to Higgs are predicted. On account of its bridging the strong and graviweak structures, the Vasu is Dyaus or the sky. Corresponding Bhairava is Kaumari-Chanda.

Thus, Panchami Bhairava represents the 8 Vasus. These are in turn the 8 charge spaces of E8, which are nothing but the entangled states of 3 qubits, which in turn are 3 chaotic signals. The E8 in its full symmetry exists prior to the big bang, as a non-physical informational space, while the big bang breaks the symmetry of the E8, rendering gravity different from the rest. In the

created universe, E8 is the information space signal trio present in each physical point of 4 dimensional spacetime. The composite of the three signals is called the Pranava, and is the universal wavefunction, which describes the position and state of every single point of the universe at every instant of time.

It is interesting to understand that the charges themselves arise from the fundamental E8 structure. This is a Lie Group, which means it is a differentiable smooth manifold, very much like a circle is in 1D. Various fundamental forces are defined by subgroups of the E8.

As a simplified example, one can view the electromagnetic force as a simple circle. While each particle can be visualized twisting around the circle. For example, the electron twists around this three times to get a charge of -1. Quarks with charges $\frac{1}{3}$ twist only once. Thus, the entire space time in all points consists of this E8 structure, and the number of twists around its various components represents the fields of individual particles, such as electrons.

The E8 Structure is a Lie Group, conforming with the properties of identity, inverse, association and commutation, under the property of rotation. Thus, applying a rotation operator to any point in the structure by an angle, no matter how small, will result in another point within the same structure. Mathematically, one can also represent the Lie group as an equivalent Lie Algebra. This will contain 8 axes representing the 8 charges, and a set of 248 basis generators as vectors. Rotations on the group correspond to addition in the algebra, where adding two elements in the set will result in some other element in the set.

Mathematically, the E8 is the largest possible exceptional simple Lie Group, unique in the following four properties: trivial center, compact, simply connected, and simply laced (all roots have the same length). It is a clear indication of the perfection and brilliance of nature, reflected in its creations. Therefore, it is natural that one finds the pattern and its intricacies reflected in other aspects of nature as well. One such case is the fundamental essence of material science, as in the Periodic Table of Elements - a tabular arrangement of the chemical elements, ordered by their atomic number, electron configuration, and recurring chemical properties, whose structure shows periodic trends. Each chemical element has a unique atomic number (Z) representing the number of protons in its nucleus.

In the standard periodic table, the elements are listed in order of increasing atomic number Z. A new row (period) is started when a new electron shell has its first electron. Columns (groups) are determined by the electron configuration of the atom; elements with the same number of electrons in a particular subshell fall into the same columns. Elements with similar chemical properties generally fall into the same group in the periodic table.

A group or family is a vertical column in the periodic table. Groups usually have more significant periodic trends than periods and blocks, explained below. Modern quantum mechanical theories of atomic structure explain group trends by proposing that elements within the same group generally have the same electron configurations in their valence shell. Groups are numbered numerically from 1 to 8 from the leftmost column (the alkali metals) to the rightmost column (the

noble gases), followed by either an "A" if the group was in the s- or p-block, or a "B" if the group was in the d-block.

Elements in the same group tend to show patterns in atomic radius, ionization energy, and electronegativity. From top to bottom in a group, the atomic radii of the elements increase. Since there are more filled energy levels, valence electrons are found farther from the nucleus. From the top, each successive element has a lower ionization energy because it is easier to remove an electron since the atoms are less tightly bound. Similarly, a group has a top-to-bottom decrease in electronegativity due to an increasing distance between valence electrons and the nucleus.

Legend:

- Alkali metals
- Alkaline earth metals
- Lanthanides
- Actinides
- Transition metals
- Unknown properties
- Post-transition metals
- Metalloids
- Other nonmetals
- Halogens
- Noble gases

1 1A 1 H Hydrogen 1.0078	2 2A 2 He Helium 4.0026											13 3A 5 B Boron 10.806	14 4A 6 C Carbon 12.009	15 5A 7 N Nitrogen 14.006	16 6A 8 O Oxygen 15.999	17 7A 9 F Fluorine 18.998	18 8A 10 Ne Neon 20.180									
3 Li Lithium 6.938	4 Be Beryllium 9.0122											13 Al Aluminum 26.982	14 Si Silicon 28.084	15 P Phosphorus 30.974	16 S Sulfur 32.059	17 Cl Chlorine 35.446	18 Ar Argon 39.948									
11 Na Sodium 22.990	12 Mg Magnesium 24.305	3 3B 21 Sc Scandium 44.956	4 4B 22 Ti Titanium 47.867	5 5B 23 V Vanadium 50.942	6 6B 24 Cr Chromium 51.996	7 7B 25 Mn Manganese 54.938	8 8 26 Fe Iron 55.845	9 8B 27 Co Cobalt 58.933	10 10 28 Ni Nickel 58.693	11 11B 29 Cu Copper 63.546	12 2B 30 Zn Zinc 65.38	13 Ga Gallium 69.723	14 2B 31 Al Aluminum 26.982	15 3B 32 Ge Germanium 72.63	16 4B 33 As Arsenic 74.922	17 5B 34 Se Selenium 78.96	18 6B 35 Br Bromine 79.904	18 36 Kr Krypton 83.798								
19 K Potassium 39.098	20 Ca Calcium 40.078	39 Y Yttrium 88.906	40 Zr Zirconium 91.224	41 Nb Niobium 92.906	42 Mo Molybdenum 95.96	43 Tc Technetium 98.9062	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29	36 Kr Krypton 83.798								
37 Rb Rubidium 85.468	38 Sr Strontium 87.62	55 Cs Cesium 132.91	56 Ba Barium 137.33	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)								
87 Fr Francium (223)	88 Ra Radium (226)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (269)	109 Mt Meitnerium (268)	110 Ds Darmstadtium (268)	111 Rg Roentgenium (268)	112 Cn Copernicium (268)	113 Uut Ununtrium (268)	114 Fl Flerovium (268)	115 Uup Ununpentium (268)	116 Lv Livermorium (268)	117 Uus Ununseptium (268)	118 Uuo Ununoctium (268)	54 Xe Xenon 131.29	86 Rn Radon (222)								
		Lanthanides										65 Tb Terbium 158.93	66 Dy Dysprosium 162.50	67 Ho Holmium 164.93	68 Er Erbium 167.26	69 Tm Thulium 168.93	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.97								
		Actinides										89 Ac Actinium (227)	90 Th Thorium 232.04	91 Pa Protactinium 231.04	92 U Uranium 238.03	93 Np Neptunium (237)	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

While the groups and periods have been explained in terms of quantum numbers and orbitals, the basis of such periodicity and regular patterns out of a more fundamental geometry has not yet been explored, and one might very well postulate that these patterns are emergent of an E8 group, with the 8 groups acting not dissimilar to the 8 charges of the Standard Model.

Relating to the 8 Vasus and Bhairavas, the following is the correspondence: the expansive size of group 1 elements corresponds to Antariksha/Mahalakshmi, while the inert group 8 represent the motionless Dhruva/Chamunda. Groups 3, 4 and 5 are the ideal materials for electronics owing to their conduction through electron excess and deficiencies, called holes. These trio represent the trio of Brahmi, Vaishnavi and Maheshwari or Vayu, Agni and Prithvi. Group 2 is seen as an extension of group 1 in many ways, though also significantly differing in many properties. This group corresponds to Kaumari or Dyau. Finally, Groups 6 and 7 are mapped to Varahi and Mahendri, or the Surya and Chandrama Vasus, the groups themselves known for their properties of electronegativity and toxicity.

Adityas and Variety

Of the 33 Vedic Deities, Vasus represent charges, pertaining to the realm of Jnana or information. Rudras pertain to the realm of Iccha or Will, and describe the creation of the universe. The Ashvins, as we shall later see, describe the fundamentals of life and pertain to the realm of Kriya or Work. In the created universe with all these realms, one sees immense diversity and variety. To make sense of it, two considerations are necessary. First, a reference point: as humans, for us the earth is a convenient reference point. Second, a common ground for study. To study the effects of universal diversity, we consider the realm of energy. Having established the two, the variety of the universe is represented by the Adityas.

First, one must understand that the 15 stages comprise of 3 sections or Kutas of 5, 6 and 4 stages representing Rig, Yajur and Sama Vedas respectively. The last stage of each Kuta is the Hreem which represents Atharva Veda. Thus, excluding these 3 stages namely 5th 11th and 15th, we get 12 stages. These are precisely the 12 Adityas.

Today, astrology is seldom respected as science, and is mostly seen as hokum and pseudoscience. However, Astrology is one of the six Vedangas or crucial and integral components of the Vedas. Why is astrology given such importance?

Over the years, our understanding through science has progressed remarkably well, such that it can explain the genesis, evolution and future of the universe, and give information about celestial objects billions of light years away, which humans may never physically reach.

However, apart from all the knowledge, science also raises a ton of crucial yet unanswered questions. For a start, consider life - a series of complex element and molecule formation, with the right amount of gravity, temperature and water, followed by macromolecules such as RNA, and then evolution over long scales - all these finally result in the sheer brilliance that is the human being, who is capable of such advanced thinking and processing. These processes of life are so tailored and complex that it cannot be described as sheer coincidence. Yet, we find that 95% of the universe is nothingness and redundancy - dark matter and dark energy. How can something as meticulously and perfectly formed contain this scale of "uselessness"? So too, we wonder about the billions of galaxies, stars and planets out there. Do any of them support life? If so, Could there be communication between them and us?

These are questions that science cannot give answers to, except as mathematical probabilities. To answer these questions, we need to primarily understand the scope of science, and that of our universe itself. We need to understand the relevance of physical existence, and for this, we need to dive deep into our own self. Understanding our states of awareness, we discriminate between the real and the unreal. That puts the scope of the universe into perspective, and we understand one important fact. The universe is created for us, and not the other way round, just as a dream world is created by a dreamer for his own entertainment.

This directly implies that the billions of celestial objects out there, dark matter, dark energy, possible aliens - everything exists solely because they have some application targeting us humans. Thus, every celestial object out there, beyond the solar system, exists to influence or affect mankind in some way. Of course, any single galaxy or star is far too weak and insignificant to affect life on earth. But when millions and billions of them are considered together, the effect is certainly there, just as drops of water do make an ocean.

This is the reason, the universe out there is studied, not as individual stars, but as regions of the sky, and the reference point is our own earth, since it is the influence on life here that is being studied. However, to perform such a study, a common platform is required to compare and contrast the celestial objects.

From spectroscopic studies, we can map the composition of matter in celestial objects, and of course there are immense variations - gaseous stars and planets, to water supporting liquid environments, to terrestrial rocky planets, to giant plasma clouds, to areas rich in dark matter. There is no way we can compare on this basis - we turn our focus to energy. Weak and strong nuclear forces are too short range to consider. Gravity, as influence on earth is too weak for most celestial bodies beyond the solar system. We are left with electromagnetic force, which we commonly call radiance or light. In fact, the science of astrology was known in Vedas by this very name - Jyotisha, with Jyoti meaning light.

Though science might have done a marvellous job in explaining the origin of the universe, there is simply no scientific model that can account for unique characteristics that describe the immense variety and diversity among the celestial objects out there. Moreover, as described above, without studying the effect on us humans, the study of the universe is horribly incomplete. It is for this reason that the Vedas give importance to Adityas.

Since we know that the universe is expanding, at some point, the universe was much smaller and much less diverse as it is now. Thus, one can trace the immense diversity of the present age to a less diverse age. Studying the sky as just twelve regions maps to studying the universe in that earlier age of less diversity. Today's diversity is merely a consequence of the twelve. As mentioned earlier, electromagnetic radiation forms the major component of our understanding, with the focus being their influence on human life.

It must be noted here that we are looking at Adityas as the regions of space, which have stars as energy sources. These regions exist and operate irrespective of earth or presence of life in it. Thus, in the cycle of wisdom, these are precursors to life sciences, which are dealt with in following sections.

As much as the universe exists and is created solely for us, we can say the same for life and evolution on earth too. All of these are tailored specifically to result in a complex evolved species, the human who can think and finally understand the truth and merge into absolute consciousness.

Thus, when DNA and RNA operate on the genetic code, creating proteins and various functionalities, there exists a blueprint that specifies exactly what the code is expected to achieve - this blueprint is the level of Pindanda concepts. These are concepts pertaining to various systems of the human body, such as digestive, respiratory etc. Whatever the Pindanda envisions as concepts, the genetic code brings to physical existence through DNA, RNA, proteins etc. But, what is the basis of the Pindanda concepts?

These Adityas are the basis, the blueprint for the various systems of our body. They represent the objectives of life, called Purusharthas. These are things a human is supposed to achieve in his lifetime, so that he may attain the truth of consciousness. The variety of energy coming from the universe as the Adityas pertain to the environment precursors to the Purusharthas, and the Pindanda concepts represent human activities conducive to achievement of the Purusharthas. In that context, there are 4 Purusharthas, briefly outlined below in connection with Adityas seen earlier.

The 12 Adityas can be divided into 3 groups, so that each group consists of 4 Adityas representing each of the Purusharthas. The 1st and 3rd groups generally represent physical/materialistic and intellectual/spiritual realms while the 2nd forms a common link or common basis for the other two.

The sun is the ultimate source of all energy as far as our planet is concerned. And relative to the Earth, the sun moves, and to make sense of this motion, the sky is divided into 12 sections, called zodiac. Each of these consist of several stars which are grouped into constellations by virtue of physical appearance. Within the course of a year, the sun travels through the 12, and returns back to starting position. These 12 portions of the year, called months are named after the zodiac as Mesha, Makara etc. Since stars are sources of energy, as and when the sun passes through a certain zodiac, the energies of the stars add up with the sun's energy, and it is this combination that reaches us. Thus the sun is seen with a different characteristic for each different zodiac or month.

1. Dharma: This answers a question, what must a human do? In generalized way, this determines human life itself, and in particular cases, it determines which actions can be deemed righteous, and how a human will reap the consequences. Mesha or Vidhatha the creator denotes personality, the physical aspect of Dharma, determining what an individual's personality and temperament is suited for, and thus his unique role in the world. This is Prathamī - God as the ordainer of each human. Kumbha or Anshuman denotes the spiritual aspect, emphasising man's constant necessity to pursue wisdom and spiritual progress. This is Dashamī - God as the imparter of wisdom. Central to achieving both is the man himself, and his core vitality is the heart, seat of creativity. This is Simha or Indra, the ruler of the human. This is Shashti - God as the core Brahman.
2. Artha: This corresponds to wealth. Precursor to wealth is the means of attaining it. Physical wealth must be attained through ethical means, corresponding to Dvitiya or Dharma. Rishabha or Aryama is the representation of formality, contract and thus law. Spiritual wealth is of course wisdom, and the means to attaining it is to purify the mind,

remove reptilian desires (Makara) and temptations. This is Dwadashi, the Sattvapatti and wealth thus achieved is Bhaga. Physical or spiritual, one can achieve these means only through effort, which in turn relies on one's own self, the body. This is Kanya or Vivasvan, and the role of body in worldly effort is reflective of the Leela of Sapthami.

3. Kama: This pertains to enjoyment, pleasure, and its precursors are relations and harmony. Mitra or the twins of Mithuna arise from the variety of Tritiya - they denote exploring the world of people, through diplomacy, making new friends. God's unparalleled love of Trayodashi gives Pusha or Kumbha. Pusha, the nourisher infuses love in us through plants and food, and we then spread love to everybody, making the atmosphere bright and positive. From both of these varieties of relationships, there emerge a select few close relationships, built from immense value, so much that we value the person as much as our own soul. This equality is the scale of Thula or Tvashta, and arises as a reflection of God's immense love and compassion of Ashtami.
4. Moksha: Ultimately, we live in this world only to get out of it, to transcend it. Physically, this is done when we reduce distractions, and attain stability. This arises out of vairagya of Chaturthi. To achieve this, we undergo numerous suffering, punishments etc to condition the mind whenever we swerve from our objective. This is done by Varuna or Kataka. In the mind level, our thoughts need to be purified, just as the rain washes away dirt. Even on a societal level, rain promotes civilization, advanced thinking, which moves the society towards thoughts of spirituality. Thus, this intellectual dimension of Moksha is Parjanya or Meena, which arises from the purifying nature of Chaturdashi. Ultimately, both result in the "death" of physical existence by killing the ego. This death and pure consciousness beyond ego is symbolised by Navami, and represented by Vishnu or Vrischika.

The characteristics of these 12 also inspire the concept of houses or Bhavas. These are 12 areas of a person's life and are determined by constructive or destructive energies of various planets in various instants of life. However, these 12 are calculated from the ascendant at the time of birth and thus Mesha, the first zodiac need not always be the first house.

Aries or Mesha is the ram, translated as Aja, which also means unborn. It signifies a person's uniqueness, personality and life as the first house. Taurus or Rishabha is the fierce bull, and its charging denotes a person protecting what he values most. That value or wealth is the second house. Relationship, siblings, friendship etc is the third house. The twins of Gemini or Mithuna denote this friendship. The need of security in old life, this is the fourth house, and is symbolised by the protective shell of the crab of Cancer or Kataka.

Leo or Simha is the lion, the king of animals. The fifth house is thus the vitality or heart, and represents creativity. Kanya or Virgo, the female represents sensuality and body. The essence of body ie health and work is the concept of sixth house. Compassion gives rise to love, to invaluable relationships. This is the seventh house inspired from Libra or Thula, the scales, which indicate equality - relationship like spouse that are valued equal to one's own life. Scorpio

or Vrischika the scorpion, represents the eighth house as poisonous venom and death, and also emotions which can at times get equally fatal.

The ninth house is represented by Sagittarius or Dhanur, the arrow symbolising upward propagation or wisdom. Karma Vasanas are desires and tendencies, which is best described as the reptilian brain. Representing this is Makara or Capricorn the crocodile. Love makes one go extrovert, towards society, building harmony, and that is what is represented in the eleventh house, pictured beautifully by the water flowing out of the pot of Kumbha or Aquarius. Finally, Liberation is the keyword for the twelfth house, represented by Meena or Pisces, the fish caught up in bondage in water.

Since the 16 stages form a continuous exhaustive set, the 12 Adityas or Rashis taken from these are also an exhaustive set. Consequently, one can infer many patterns from this set.

Prior to this, one must understand the similarity inspired relations between the planets based on the numbers. Of the nine digits, from 1 to 9, 5 is the center. This splits the nine into 2 sets - 1 to 5 and 6 to 0.

There are correspondences between the numbers. 1 and 6 as Surya and Shukra relate to physical realm, health and wealth. 2 Chandra and 7 Kethu denote actions, physical and mental. 3 Guru and 8 Shani denote expansion-contraction duality - expansion of wisdom and negation of Karma. 4 Rahu and 9 Kuja denote superhuman effect - fate and birth-death. 5 is unique as Budha, denotes multiplicity and relations. However Rahu and Kethu represent spiritual effects, submitting to divine will and Sadhana towards Moksha respectively. For this reason, they are non physical or Chhaya Grahas. Thus, they are not assigned Rashis.

Largely, the 1st 8 Rashis represent a physical level, with Mesha and Vrischika represent birth and death. On the contrary, the last 4 represent Spirituality.

Representing completeness and birth-death, Kuja rules Mesha and Vrischika outlining the physical realm. At the center of this set are Kataka and Simha. These represent intellectual and physical Vitality and are ruled by Surya and Chandra. Shukra and Budha are complementary as the ending of 1st 5 and starting of last 5 numbers. These form the other Rashis of the 8. Shukra represents physical value and relations as Rishabha and Thula. Budha represents external exploration as friendship and internal exploration as health, as Mithuna and Kanya.

The last 4 Rashis represent Spirituality. Of these, by nature Brihaspathi is expansive and Shani has a tendency to negate and nullify Karmas. These are the 3-8 correspondence told earlier. Of the 4 Rashis, Brihaspathi forms the outer 2 ie Dhanur and Meena, while Shani forms the inner 2 ie Makara Kumbha.

In addition to these, there are axes formed among the Navagrahas. In this context ft, Rahu and Kethu are assigned only half values, since they are not only Chhaya Grahas but also complementary to each other by inherent nature.

The axes are Surya-Shani, Chandra-Rahu, Kuja-Guru and Budha-Shukra. This is seen as Rashis of exaltation and debilitation for each planet. These are Rashis in which the powers of the planets get highlighted. Exaltation and debilitation Rashis are always situated on opposite ends ie 6 Rashis apart. The exaltation Rashi of one planet forms the debilitation of the other in the axes mentioned. That is, Surya's exaltation is Shani's debilitation and vice versa. The exaltation of Surya, Chandra, Kuja and Budha respectively are Mesha, Mesha, Rishabha, Makara and Kanya.

There are friendships and enmities between the nine planets, which affect the significances of the Rashis in one's life as to whether or not a planet was in friend's or enemies house at any instant of time. Friendships and Enmities are poetic descriptions of compatibilities between the planets characters and energies.

Sun: moon Mars Jupiter friends, Venus Saturn enemies.
Moon: sun Mercury friends, no enemies.
Mars: sun moon Jupiter friends, Mercury enemy.
Mercury: sun Venus friends, moon enemy.
Jupiter: sun moon Mars friends, Mercury Venus enemies.
Venus: Mercury Saturn friends, sun moon enemies.
Saturn: Mercury Venus friends, sun moon Mars enemies.
Rahu-Kethu: Venus Mars Saturn friends, sun moon enemies.

For finer divisions of the sun's position within the zodiac, one uses the concept of Nakshatras or asterisms. There are 27 Nakshatras, which have 4 padas or quarters each, thus totalling 108 segments. Each of the 12 Rashis are composed with 9 of these segments. These are the properties of the Nakshatras, each of which is ruled by one of the 9 planets.

Thus, the changes in position of sun relative to earth, covering an entire 360 degree cycle of the zodiac is seen as the 27 Nakshatras, with each Nakshatra represented by one of 27 forms of Aadityas, each of which symbolize the nature of radiation received by a person on the earth when the sun is in the corresponding area of the zodiac. So too, nine of the most important celestial bodies in the solar system, are seen as the Navagrahas, which are also seen as manifestations of Aaditya. The nature and power of the 27 Aadityas and Navagrahas, as well as association of each of the Navagrahas with three Nakshatras are as follows:

1. Ashvini Kethu Ashvinis – accuracy and recovery of health
2. Bharani Shukra Yama – death, liberation, expiration
3. Karthika Soorya Agni – transformative power, fire, focus
4. Rohini Chandra Prajapathi – Creative power, substratum matter
5. Mrigashirsha Angaraka Soma – fruition, pleasure, nectar
6. Aardra Raahu Rudra – intensity, focus, destroying negativity
7. Punarvasu Guru Aditi – fertility, creative processes

8. Pushya Shani Brihaspathi – wisdom, implementation of spiritual learning
9. Aslesha Budha Naaga – paralyzing of victim, victory
10. Makha Kethu Pitrus – enlightenment, fruits of sacrifice
11. Purvaphalguna Shukra Aaryama – contract of union, formalizing relationships
12. Uttaraphalguna Soorya Bhaga – accumulation of wealth
13. Hasta Chandra Savitr – creativity, creative energy, procreation
14. Chitra Angaraka Tvashta – Work, Artisan abilities, Dexterity
15. Swathi Raahu Vaayu – Scattering, Spreading, Air, Speed, Lightness
16. Vishakha Guru Dyaus – Sky, seasons, maturing time
17. Anuradha Shani Mitra – Friendship, relationships, diplomacy
18. Jyeshtha Budha Indra – Victory through Leadership, Smart Thinking
19. Moola Kethu Nirruti – Turbulence, Chaos, Variety
20. Poorvashada Shukra Apa – Refreshment, Rejuvenation, Water
21. Uttarashada Soorya Kubera – Victory by effort, treasury
22. Shravana Chandra Vishnu – Interconnectivity, Fundamental underlying relations
23. Sravishta Angaraka Vasu – Pooling of wealth and resources
24. Shatabhishak Raahu Varuna – Temptations and Punishment, Ocean
25. Purvabhadra Guru Ajaikapada – Fire, Rising up, Spiritual Elevation
26. Uttarabhadra Shani Ahirbudhnya – Water, Settling down, Building stability
27. Revathi Budha Poosha – Nourishment, Building up

As can be seen, 12 of the 15 stages are covered, giving rise to the 12 Adityas.

Adityas, Rudras, Vasus and the Ashvinis comprise the 33 Deities, called Gods or Devas. In certain Vedic texts, the Gods are visualized as 8, guarding the directions, called Dikpalas. One can see how this is an assorted set of Deities taken from the 33. Circumambulatory from East, the Dikpalas are Indra, Agni, Yama, Nirruti, Varuna, Vayu, Kubera, Eeshana.

One can understand these as 4 pairs of opposite directions as Indra-Varuna, Agni-Vayu, Yama-Kubera and Nirruti-Eeshana. Of these, Indra-Varuna are Adityas corresponding to Dharma and Moksha or materialistic-spiritual duality. Nirruti and Eeshana are Rudras.

Yama and Kubera represent death inducing nature of time and expansive nature of space respectively, and correspond to Chamunda and Mahalakshmi Vasus respectively. Agni and Vayu are Vasus corresponding to Brahmi and Vaishnavi.

Taking the ordinal directions, we get Brahmi, Vaishnavi, Nirruti and Eeshana Rudras mapping to Brahma, Vishnu, Rudra and Eshwara. These form the 4 legs of the throne on which Amma as Lalitha is seated.

Ashvinis and Life

Finally, the 15th stage of Panchadashi is the only one left out, and here Amma is the Nirguna Sacchidananda manifest as Guru. The Guru is seen as the very form of Shiva Shakthi in union. This masculine and feminine principles in harmony constitute the 2 Ashvinis - Nasatya and Dasra. Nasatya's consort Jyoti represents the physical body, while Dasra's consort Mayandri represents the intellect, both together creating the fabric of life.

What is life? And how is it created? Without an iota of doubt, all of the creations and matter in the universe are incomplete and useless without life. By common scientific consensus, life is understood to be derived from matter, that is capable to self sustenance and signaling, two key abilities that distinguish life from non life. It is understood that atleast all of the present life on earth originates from the RNA, a complex chain of hydrocarbons and nucleotides which were brought about from early substances like hydrogen cyanide.

Self sustenance determines physical existence of an organism maintaining appropriate homeostasis. Complementary to this is signaling, the processing of information from one's surroundings, pertaining to nutrition, sources of threat and danger, and interaction with other organisms.

These two aspects determine the fundamental dichotomy of physical and intellectual, which broadly determines human life even today- brain and brawn. It is this dichotomy that is represented in the Vedas by the 2 Ashvini Devas - Nasatya and Dasra, who with their consorts Jyoti and Mayindri represent the brains and the brawns respectively. Along with the 11 Rudras, the 8 Vasus and the 12 Adityas, they make up the 33 Deities.

These represent the trio of Shaktis - Jnana, Iccha and Kriya. In particular, the Vasus represent the 8 Charges, which is the E8 in information space, which is Jnana. The Rudras outline the creation and expansion of universe following the big bang - emergent from the expansive power arising from Divine Will.

Having created the right conditions such as solar system, comes the role of Kriya - life which utilizes the resources, ultimately returning things back to primordial state of non existence through consumption, decay and death.

Thus, with the solar system and earth created, with the right conditions conducive, the first life is formed by RNA and similar biochemicals. These structures have the right elements and right proportions to not only grow and sustain themselves, but to respond to stimuli and store or process information within their structures.

On an abstract level, one can try to understand and study life using the premises of sustenance and signaling within and influenced by a neighborhood. The most prominent step taken in this direction was the Game of Life or GoL by Conway. This is in essence a two-dimensional Grid, where a "dead" cell is born, or a "live" cell survives only when a certain number of its

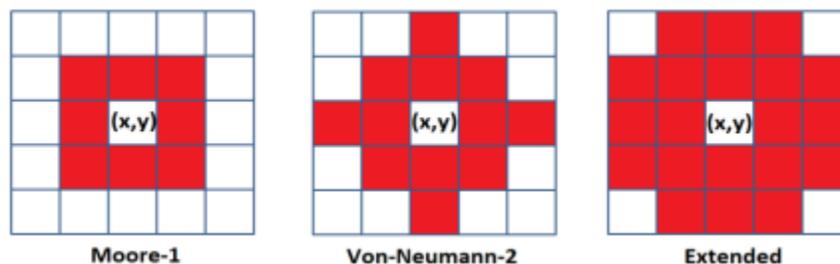
neighbors are alive, so that neither overcrowding nor undercrowding occurs. This idea was a breakthrough giving birth to a new kind of science, that of cellular automata and emergent patterns. Also, from the GoL various interesting patterns such as still-life, oscillators, gliders, guns etc have been observed and studied. Also, it has been shown that the GoL is Turing Complete ie it can be used and appropriately programmed to perform any desired computation.

The GoL appropriately describes primitive life, one that sustains itself within the environment on the delicate balance between overpopulated resource scarcity and underpopulated loneliness. This describes very well the sustenance aspect of life.

To include the signaling aspect also, one must consider two grids, a life grid which is essentially the grid proposed by Conway, and a sense grid indicating the perception capability of the corresponding cell in the life grid.

Thus, in the Sense Enhanced Game of Life (SEGoL), two grids, L representing the Life Grid and S, representing the Sense Grid, both of size $M \times M$ ($M=50$) are defined. All-pervading throughout the entire grid, "consciousness" is seen as the property that enables each cell, alive or dead, in both the sense and life grids to be aware of its existence depending on the neighborhood cell values. Three kinds of neighborhoods are defined as follows and illustrated below, all of them defined with respect to a cell denoted by x and y coordinates as (x,y) .

1. Moore-1 Neighborhood: Immediate neighboring cells having a Chebyshev distance 1.
2. Von-Neumann-2 Neighborhood: Twelve cells are the set of cells with a Manhattan Distance of 2.
3. Extended Neighborhood: All 20 cells with Hamming Distances of 1, $\sqrt{2}$, 2 and $\sqrt{5}$.



Each cell in the life grid may have a value of either 0 black or 1 white, corresponding to dead and alive respectively. Each cell in the sense grid may have one of three values, 0 or black corresponding to touch, 0.5 or gray corresponding to sight and 1 or white corresponding to sound sense.

From an evolutionary standpoint, these three senses determine the way an organism receives and perceives information from various kinds of neighborhoods, subsequently

leading to increased awareness about its own self, as well as potential sources of nourishment and danger around it. The other two fundamental senses, namely taste and smell, are related to the manner in which an organism moves towards or away from nourishing/detrimental objects, and the implementation of these senses is succinct in the neighborhood rules, where underpopulation and overpopulation on either side of an optimal neighbor count causes death. Time is represented in the cellular automata by discrete steps, where values of all cells in both grids are updated as per the defined rules. The rules are defined in the following manner, with A generically denoting the life and sense grids. All calculations, both life and sense, are done using the Moore, von Neumann and extended neighborhoods in touch, sight and sound cases respectively.

Touch value is the least developed value for a sense cell. In this state, a cell in A is only sensitive to its nearest neighbors (Moore-1 neighborhood), and has no way of perceiving or being influenced by farther neighbors. $L(x,y)$ lives if the number of alive Moore-1 neighbors are within a range F_0 . Failing this, a living cell dies, and a dead cell continues to be dead. This is because more than F_0 alive neighbors correspond to overcrowding and resource scarcity, whereas lesser than F_0 alive neighbors correspond to undercrowding and loneliness. $S(x,y)$ “upgrades” to Sense of Sight, 0.5, if a certain range “a” of its neighbors have the value 0.5. Else, $S(x,y)$ stays at 0.

Sight value is more developed than sense of touch, since a cell now also has the capacity to perceive by sight, a select set of farther neighbors (Von-Neumann-2) corresponding to the „line of sight“. Here $L(x,y)$ continues to live if a certain range F_1 of its Von-Neumann-2 neighboring cells are alive. In the absence of this, a live cell dies, and a dead cell stays dead. $S(x,y)$ may upgrade to Sense of Sound, 1, if a certain range “b” of its neighbors have the value 1, and may retain the Sense of Sight, 0.5, if a certain range “c” of its neighbors have the value 0.5. In the absence of the above two conditions, $S(x,y)$ “downgrades” to Sense of Touch, 0.

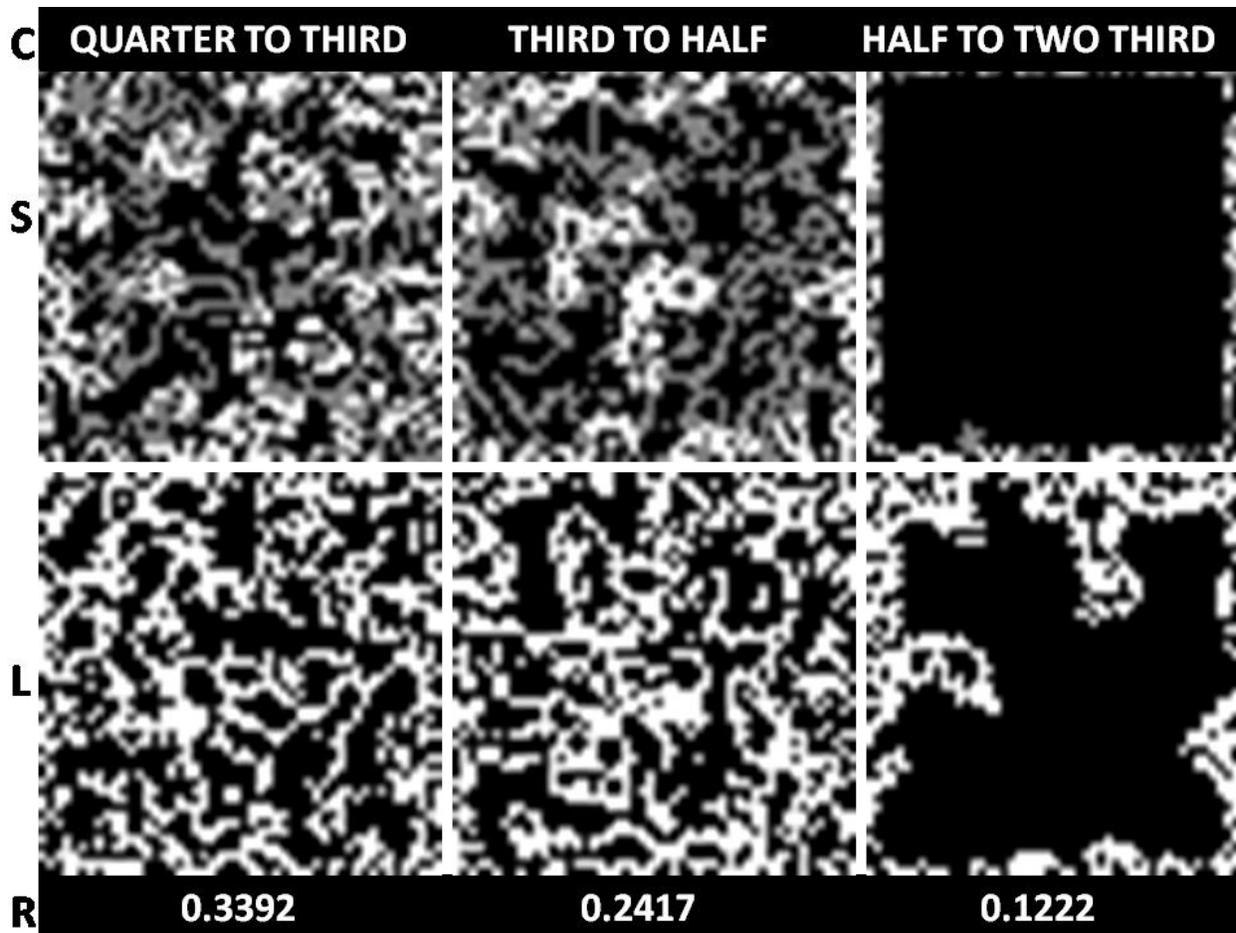
Sound transcends line of sight communication as well as physical contact, making it the most advanced state possible for $S(x,y)$, with perception covering the entire extended neighborhood. $L(x,y)$ lives if a certain range F_2 of its extended neighboring cells are alive. In the absence of this, a live cell dies, and a dead cell stays dead. $S(x,y)$ retains the Sense of Sound, 1, if a certain range “d” of its Moore-1 neighbors have the value 1. In the absence of the above condition, $S(x,y)$ “downgrades” to Sense of Sight, 0.5.

Applying these rules during a time instant “i” determines L and S grids for the next instant “i+1”. A random arrangement is used as the initial timestep for L and S. In all these rules, senses are retained by virtue of an optimal level of use among the neighbors, and senses downgrading due to fall in usage (being made vestigial) or due to practical ineffectiveness due to other cells also developing the sense, thus reducing competitive advantage.

In the Game of Life, Conway had developed rules such that a living cell sustains with 2 or 3 alive neighbors, and a dead cell is brought to life with 3 alive neighbors. These rules were very carefully and cautiously chosen to administer the right amount of chaos yet forbid explosive growth, dying out and other undesirable or unrealistic consequences. Over the years, these rules have become the subject of extensive study, and it has been observed that tweaking the numbers even by a slight amount leads to wipe-outs and non-life consequences - sustenance of life is extremely selective.

Considering that Conway's chosen neighborhood was the Moore-1, there were 8 neighborhood cells. The rules hover between 2 and 3 live neighbors, which correspond to a range between 25% ie 2 and 33% ie 3 of the total cells. This interval - between a fourth and a third, is crucial to sustaining life, anything on either side leading to overcrowding or loneliness. This is the inspiration for the Life and sense Grids devised in SEGoL.

With this basis, we now analyze various cases and their results. The Grid Size is 50x50, and timesteps run from 1 to 50, although in all cases, one is able to discern patterns and trends even by the 16th iteration, whose plots are shown. The rules are set by the above mentioned inspiration - for Moore neighborhoods a and F0 are set as [2,3], for Neumann, b, c and F1 are set as [3,4] and in extended case, d is set as [5,7]. In general configuration, one may write this as $[\frac{1}{4}, \frac{1}{3}]$ applicable to a,b,c,d,F0,F1 and F2. The average value of L grid at the end timestep gives the number of cells alive, or the Survival Rate R.

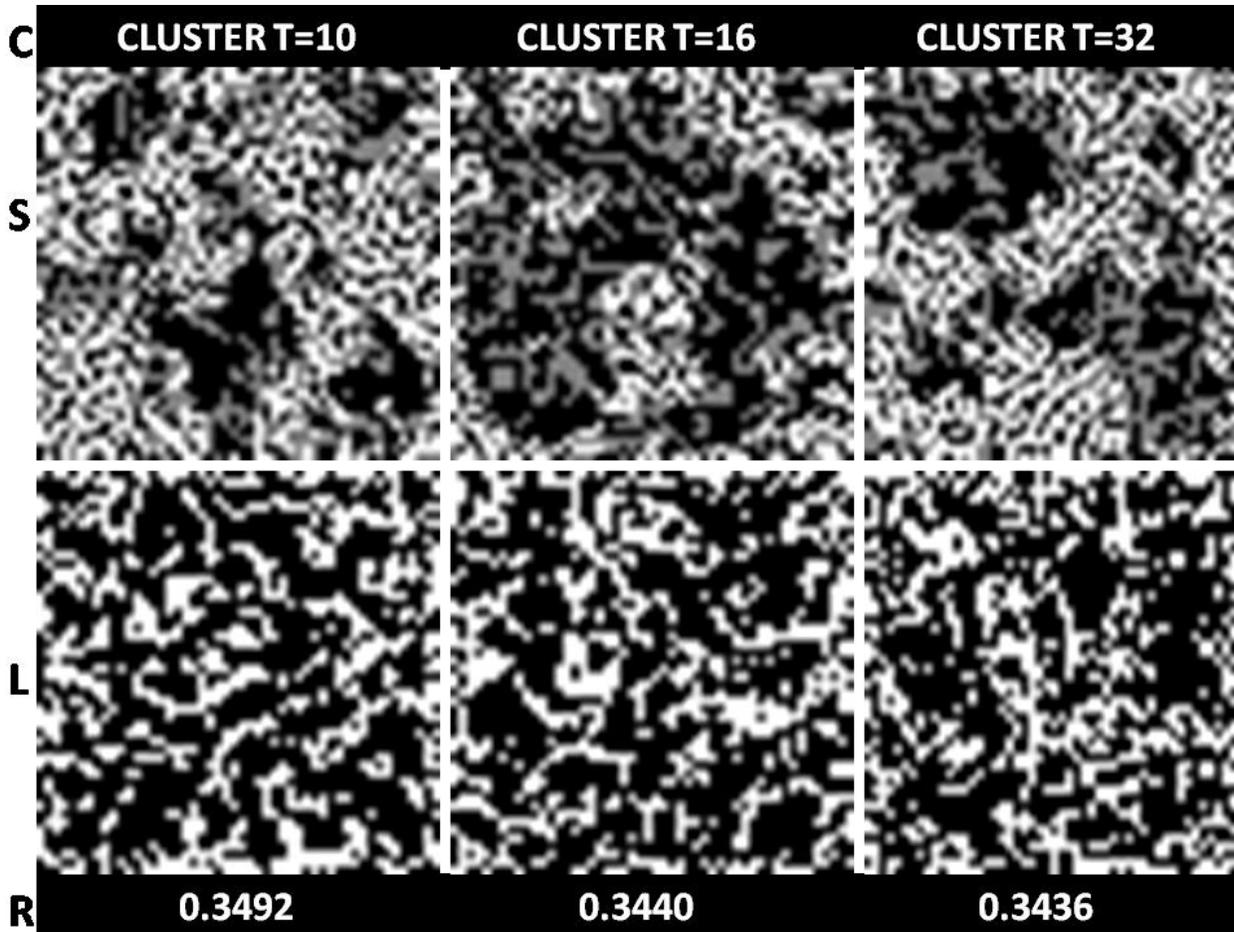


For this configuration, one can note a decent survival of 33%, and there are slight signs of pattern formation in S Grid. Next, the rule is modified so as to raise the interval to $[\frac{1}{3}, \frac{1}{2}]$, for all variables. Though survival drops to 24%, one can see interesting isolations and patterns for the sound sense, Raising the interval furthermore to $[\frac{1}{2}, \frac{2}{3}]$, one sees a disastrous survival of 12%, mostly devoid of any sense but touch. This is a strong example of how overcrowding to values above 50% of neighborhood cannot describe any decent organization of life or civilization.

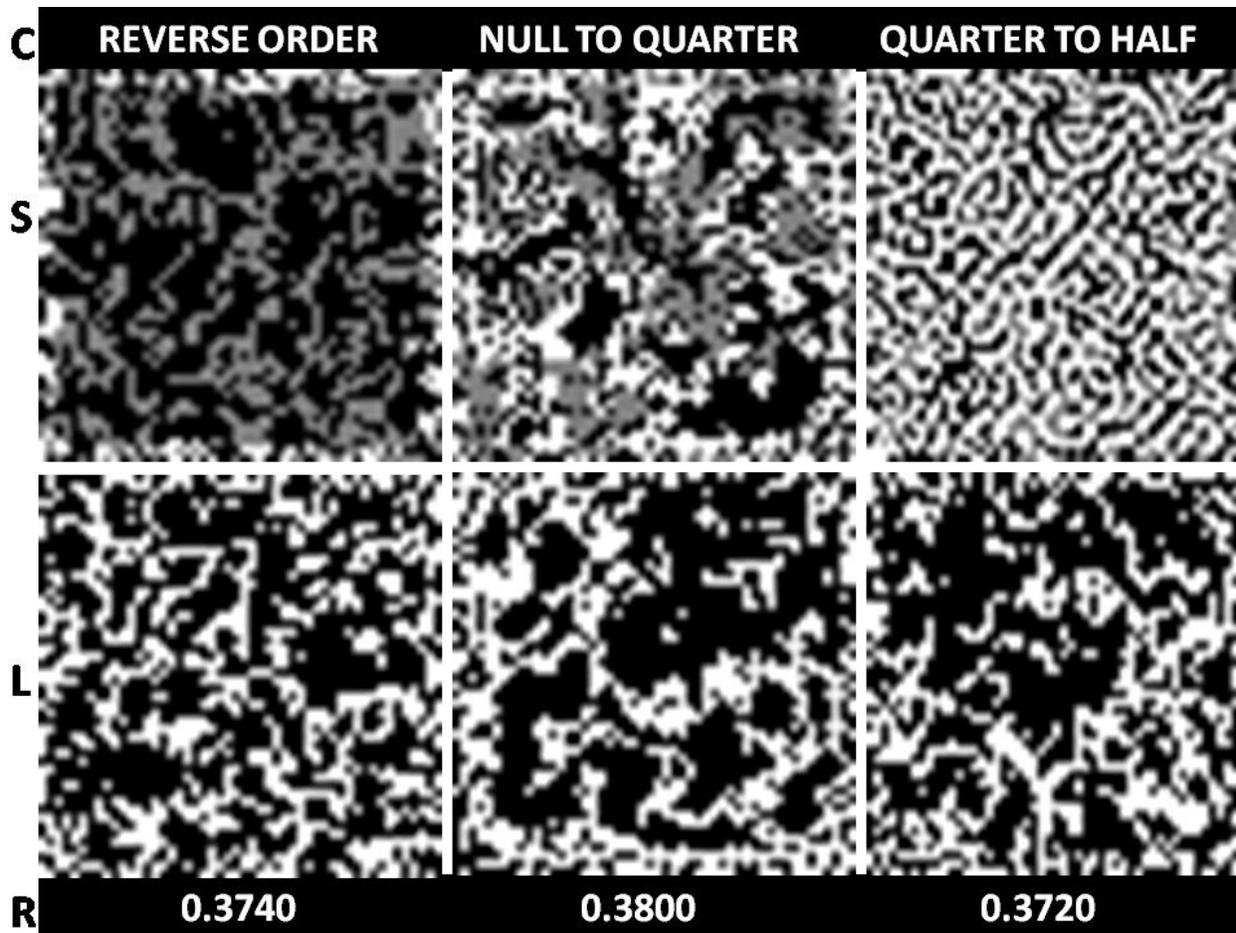
Next, the rule is modified so that all intervals are set to $[\frac{1}{4}, \frac{1}{3}]$ except the sound retention d, which is set to $[\frac{1}{3}, \frac{1}{2}]$. This setup is shown with L and S grids at various timesteps - 10,16 and 32. Survival is seen at around 34%. This case shows interesting patterns formed, particularly in the S grid, where the highest sense sound is beautifully clustered in certain regions.

In Conway's Game of Life, the key feature was sustenance of life, within a society - survival of the fittest. However, sense, from the concept of information, provides an additional dimension - intelligent organisms in a society leading to civilization. It is only through culture and civilization that man can fine tune life, and reach higher levels of perception, insight and thinking, which will ultimately lead to more achievements, both physical and intellectual, through technology, science, and ultimately lead to spiritual progress. Man is a social animal, and in no circumstance can live in complete isolation. The achievements of humanity have arisen directly out of societal

interactions, where the thoughts and information of people are pooled together - this alone makes research and study possible by means of access to ancestral wisdom. In the SEGoL, one can understand such societal advancement by patterns of senses and perceptions clustering in certain regions - a sense of organization emergent from the rules of nature itself. This is a more important result than increase of R, since this is an indicator of Quality of Life and Civilization, and a low population of higher achievement is definitely light years ahead of high uncivilized survival, which would only see constant struggle rather than real advancement. This is survival of the smartest.

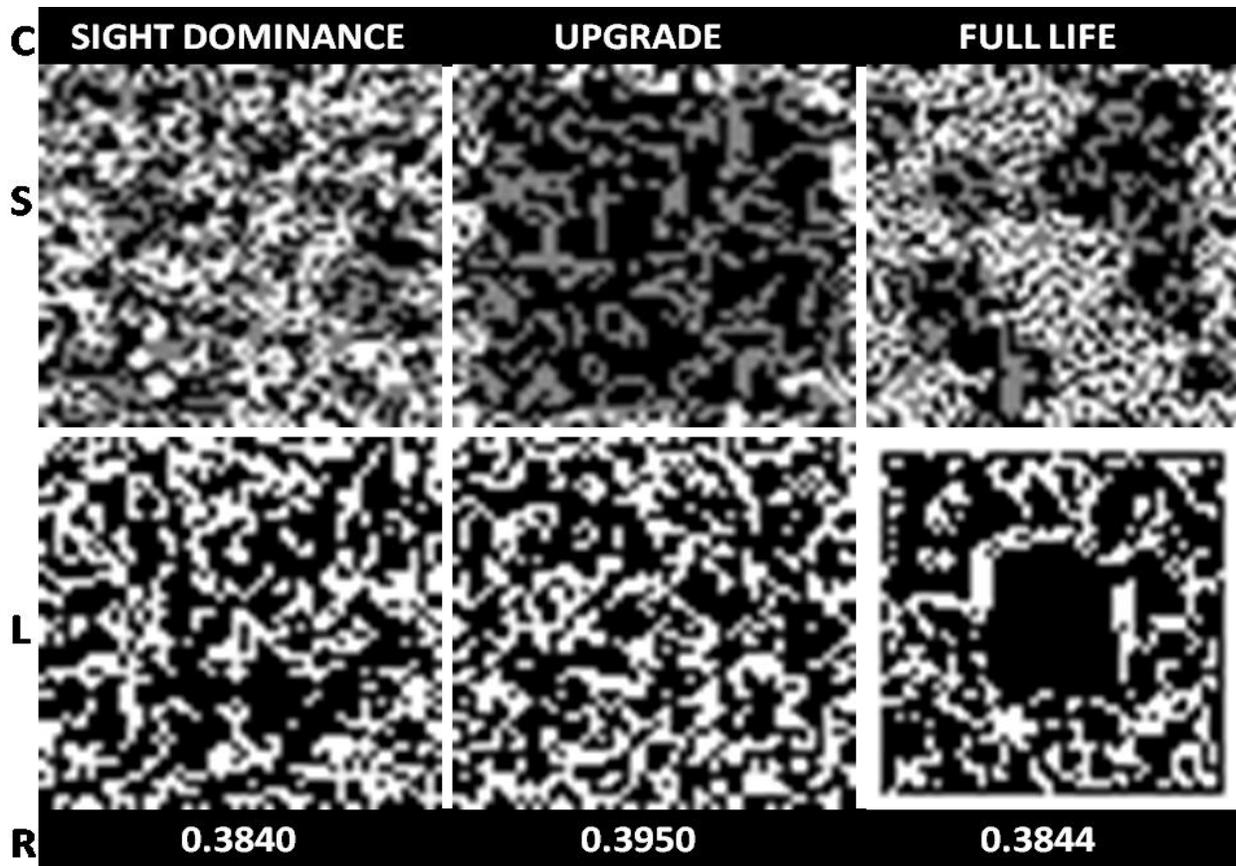


In the “cluster configuration” and other configurations stated above - there is an important point to note. The variables b and c are both defined for a Neumann neighborhood, and both pertain to an S cell value of 0.5. It is possible that at the same time, both conditions of b and c are satisfied, raising a confusion over updating the value of S. In the simulation, preference is always given to sight retention c ahead of sight upgrading variable b. It is with this factor that one obtained the clustering earlier. The same conditions are defined but with preference given to b over c, and is plotted next. While survival increases, clustering is not to be seen. In fact, sense of sound dies out, leaving only sight and touch. This makes it very clear that preference must be given for sense retention over upgradation - a bird in the hand is worth two in the bush.



Next, all intervals are brought down to $[0, \frac{1}{4}]$. Survival rate increases to 38%, whereas S tends to show distribution edging toward sight prominence, with no clustering. Further, all intervals are set to $[\frac{1}{4}, \frac{1}{2}]$, and while survival is at 37%, the S Grid shows interesting striation patterns.

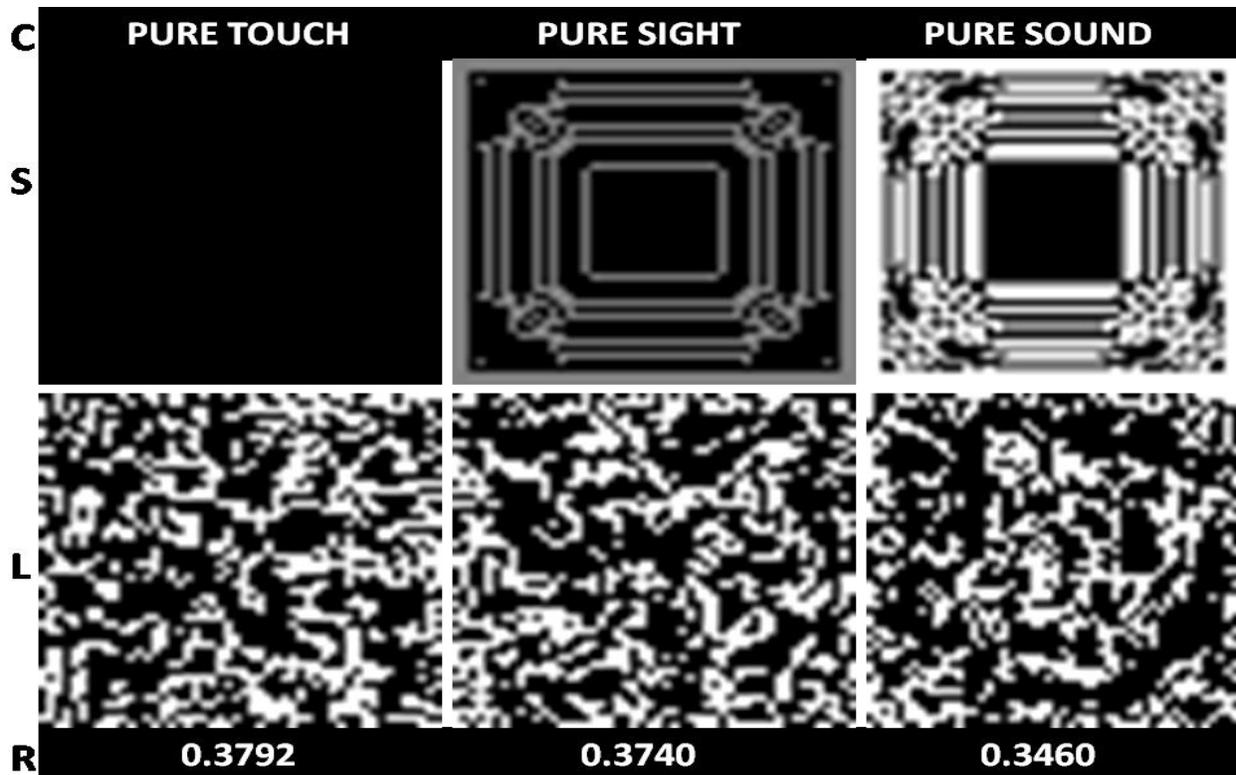
Thus, one can see that the interval $[\frac{1}{4}, \frac{1}{3}]$ alone shows signs of clustering and organization. Low ended intervals lack organization, whereas high ended intervals crossing 50% are a disaster to life. Learning from this, we now set $[\frac{1}{4}, \frac{1}{3}]$ for all variables, but with sight retention increased to $[\frac{1}{3}, \frac{1}{2}]$. Survival is at 38%, and very feeble patterns are seen in S grid.



In the next configuration, the sense upgrade variables a and b are set to $[\frac{1}{3}, \frac{1}{2}]$ whereas all others remain at $[\frac{1}{4}, \frac{1}{3}]$. Survival increases to 39%, but at the expense of information capability, since sound sense is close to vanished.

Thus, from all these observations, one zeroes in on the “Golden Rule”: the ratio of $[\frac{1}{4}, \frac{1}{3}]$ for all variables except $[\frac{1}{3}, \frac{1}{2}]$ for d - this is the best case where clustering and organization are observed. One can understand this case better by providing non-random initial setup. First, a setup of 100% life, with all L values as 1, is used as initial L Grid for Golden Rule. Even in this case, one can see that life settles down to an R of 38%, showing an interesting “void” in the center. In S grid clustering occurs as usual. It is interesting to note that the S grid operates fairly independent of L grid, and even dead L cells can be seen with various S values. This is possible because a person’s information and intellectual output survives even after physical death - through legacy, books, works etc. Thus, a dead L Cell does not necessarily mean a dead S cell.

Finally, the Golden Rule is studied in the triple cases of Pure Touch, Pure Sight and Pure Sound, by setting at initial timestamp, every cell in S to 0, 0.5 and 1 respectively. Survival rates of the three are in the 34-37% range, but the S grids show very interesting patterns of organization. However, the downside to this is that in each case, the other two senses become non existent, except in the pure sound case.



Thus, one understands that it is necessary for all three senses to exist in some proportion, in the initial timestep, to ensure that civilization forms. As per the Vedas, the five senses are created alongside the five Bhutas or elements of nature. They start with Akasha and end with Prithvi, and the five senses are created in that order - sound first, then sight and then touch. While Pure touch or sight cannot give rise to sound, pure sound does indeed give rise to all 3 S values - this proves and confirms the order of creation from Akasha to Prithvi and not vice versa.

From the above discussions, interesting conclusions can be drawn. First, it is interesting to see life as an emergent phenomenon from biochemicals capable of self-sustenance and signaling, and based on neighbors in a society, as described by Conway's Game of Life. Second, the consideration of Information as Sense brings an emergent new dimension of civilization to the society. This is heavily dependent on the neighborhood rules, which create appropriate conducive conditions for sustenance of life. It is observed that variables within the neighborhood normalized intervals of $[\frac{1}{4}, \frac{1}{3}]$ are most conducive to sustaining life and growing into civilizations, particularly if the highest sense ie sound retention is placed in $[\frac{1}{3}, \frac{1}{2}]$. Such civilization is seen by clustering of senses in certain regions, organizing the society and pooling together information to lead to collective advancement. In Vedic context, it is seen that the Ashvini Devas represent the Life and Sense Grids, and thus the biological processes of life, evolution, civilization and culture.

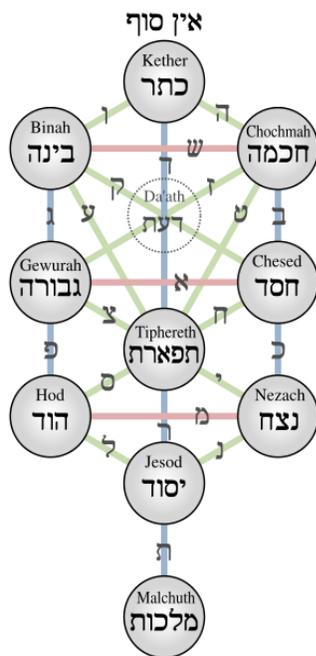
The Genetic Code

Of the 50 Aksharas discussed earlier, one may derive a subset, containing 22 Aksharas. A linguistic and historic basis for this will be explained in later sections.

The 22 alphabets mentioned here are much more than a mere random subset of the Brahmi character set. The 22 are laden with spiritual significance and properties, and this is the factor that leads to the selection of the 22 alphabets. Fundamentally, one finds the 22 as describing the various connection paths within the 10 Sefirot, which are manifestations of the Divine, as seen in the Kabbalistic Tree of Life.

The uniqueness of this Sefirot Akshara subset can be seen in nature, as the DNA. The genetic code is the set of rules used by living cells to translate information encoded within genetic material (DNA or mRNA sequences) into proteins. Translation is accomplished by the ribosome, which links amino acids in an order specified by messenger RNA (mRNA), using transfer RNA (tRNA) molecules to carry amino acids and to read the mRNA three nucleotides at a time. The genetic code is highly similar among all organisms and can be expressed in a simple table with 64 entries. The code defines how sequences of nucleotide triplets, called codons, specify which amino acid will be added next during protein synthesis.

One can see that of the total DNA in humans, about 2% contribute to the genetic codon, encoding the amino acids in trios of nucleotides. The rest 98% comprises of varying length codons whose purposes have not yet been fully understood by science.



1st base	2nd base				3rd base
	U	C	A	G	
U	UUU (Phe/F)	UCU	UAU (Tyr/Y) Tyrosine	UGU (Cys/C) Cysteine	U
	UUC Phenylalanine	UCC	UAC	UGC	C
	UUA	UCA (Ser/S) Serine	UAA ^[B] Stop (Ochre)	UGA ^[B] Stop (Opal)	A
	UUG	UCG	UAG ^[B] Stop (Amber)	UGG (Trp/W) Tryptophan	G
C	CUU (Leu/L) Leucine	CCU	CAU (His/H) Histidine	CGU	U
	CUC	CCC (Pro/P) Proline	CAC	CGC (Arg/R) Arginine	C
	CUA	CCA	CAA (Gln/Q) Glutamine	CGA	A
	CUG	CCG	CAG	CGG	G
A	AUU	ACU	AAU (Asn/N)	AGU (Ser/S) Serine	U
	AUC (Ile/I) Isoleucine	ACC (Thr/T) Threonine	AAC Asparagine	AGC	C
	AUA	ACA	AAA (Lys/K) Lysine	AGA (Arg/R) Arginine	A
	AUG ^[A] (Met/M) Methionine	ACG	AAG	AGG	G
G	GUU	GCU	GAU (Asp/D) Aspartic acid	GGU	U
	GUC (Val/V) Valine	GCC (Ala/A) Alanine	GAC	GGC (Gly/G) Glycine	C
	GUA	GCA	GAA (Glu/E) Glutamic acid	GGA	A
	GUG	GCG	GAG	GGG	G

Nucleotides are organic molecules that serve as the monomer units for forming the nucleic acid polymers deoxyribonucleic acid (DNA) and ribonucleic acid (RNA), both of which are essential biomolecules within all life-forms on Earth. Nucleotides are the building blocks of nucleic acids; they are composed of three subunit molecules: a nitrogenous base, a five-carbon sugar (ribose or deoxyribose), and at least one phosphate group.

DNA is a molecule composed of two chains (made of nucleotides) which coil around each other to form a double helix carrying the genetic instructions used in the growth, development, functioning and reproduction of all known living organisms and many viruses. DNA and ribonucleic acid (RNA) are nucleic acids; alongside proteins, lipids and complex carbohydrates (polysaccharides), nucleic acids are one of the four major types of macromolecules that are essential for all known forms of life.

The two DNA strands are also known as polynucleotides since they are composed of simpler monomeric units called nucleotides. Each nucleotide is composed of one of four nitrogen-containing nucleobases (cytosine [C], guanine [G], adenine [A] or thymine [T]), a sugar called deoxyribose, and a phosphate group. The nucleotides are joined to one another in a chain by covalent bonds between the sugar of one nucleotide and the phosphate of the next, resulting in an alternating sugar-phosphate backbone. The nitrogenous bases of the two separate polynucleotide strands are bound together, according to base pairing rules (A with T and C with G), with hydrogen bonds to make double-stranded DNA. It is the sequence of these four nucleobases that encodes genetic information. RNA strands are created using DNA strands as a template in a process called transcription. Under the genetic code, these RNA strands are translated to specify the sequence of amino acids within proteins in a process called translation.

Each of the amino acids can thus be specified as a three lettered code, which contains the nucleobases that generate it, such as AGG, CAG, CUG etc. A, C and G represent Adenine, Cytosine and Guanine as mentioned earlier. However, Uracil represented by U takes the place of Thymine, in context of RNA translation into proteins.

It is a remarkable fact that the number of proteinogenic amino acids generated by the genetic code is 22 - exactly the same number of the Hebrew alphabet. Of course, the 22 includes Pyrrolysine and Selenocysteine, which are generated from codes UAG and UGA, which are in most cases stop codons, where transcription stops.

The correspondence gets even stronger if the 22 amino acids are seen as belonging to constituent subsets. Specifically, the seven hydrophobic non-polar amino acids Val, Ile, Pro, Phe, Leu, Trp and Ala directly correspond with the seven double Hebrew letters Bet, Gimel, Dalet, Kaf, Pe, Resh and Tav. Furthermore, the twelve hydrophilic polar amino acids (Thr, Tyr, His, Gin, Asn, Lys, Asp, Clu, Cys, Arg, Ser, Gly) map to the 12 simple Hebrew letters of Tet, He, Nun, Tsadi, Het, Ayin, Yod, Samekh, Vav, Lamed, Zayin and Qof. Finally, the three stop codons for Met, Pyr and Sel correspond to the "Mother" Hebrew Alphabets Mem, Shin and Aleph.

In the Indian system, there is a schematic grouping of Aksharas called Katapayadi, where Aksharas are viewed as belonging to one of 5 groups or Vargas - A, Ka/Cha, Ta/Tha, Pa, Ya/Sha. Studying the patterns of the genetic codon, one finds remarkable correspondence with the 22 alphabets in context of the Katapayadi, and more significantly, one finds certain clear connections as follows:

1. The first letter in the 3 lettered code specifies the Varga. A denotes Ya/Sha Varga. G denotes Ka/Cha Varga. U denotes Ta/Tha Varga, and C denotes A and Pa Vargas.
2. The second letter in the 3 lettered codon specifies the position within each Varga as Purvanga or Uttaraanga; ie in a Varga, for example Ka Varga, Aksharas Ka and Kha would be Purvanga, while Ga, Gha and Nga would be Uttaraanga. Similar rule applies to all other Vargas. Thus codon second letters A and U denote Purvanga, while G and C denote Uttaraanga.
3. The third letter in the 3 lettered codon helps to distinguish between multiple groups of Aksharas within the same Varga, such as between Ka and Cha groups within the Ka/Cha Varga. The letters A and G denote the first subgroup ie Ka group, while letters C and U denote second subgroup ie Cha group.
4. The second letter also specifies beginning or end Akshara within each Anga. For example, in Ka and Tha Vargas, A signifies Ka or Tha, U for Kha or Thha, C for Ga or Dha and G for Nga or Na. In Cha and Ta Vargas the mapping is reverse, ie U, A, G and C in place of A, U, C and G described above.

With these rules, one can understand the mapping of any codon to its Akshara. For example, take a codon GAU. The first G denotes this is Ka/Cha Varga. A denotes that within this varga, the Akshara is Purvanga ie Ka, Kha, Cha or Chha. The third U denotes this is the second subgroup, narrowing down to Cha and Chha. From the list of 22 alphabets mentioned earlier, we do find Cha. Thus, Cha is the Akshara for the Aspartic Acid generating codon GAU.

Thus, one can see that the 4 bases and their positions in a codon determine the various Aksharas. Interestingly, one can see that the complete set of 64 Aksharas cannot be represented using 3 lettered codons. This is particularly the case for Uttarangas. For example, a codon such as UGG or UGC will narrow down to Aksharas Da, Dha and Na. However, there are three Aksharas and only 2 codons, which can map to these. Similarly in the case of A Varga or vowels, there are 16 vowels, from A to Ah. However, the only valid codons for the vowels are CAA, CAG, CGA, CGG, CCA, CCG, CUA and CUG, which can only encode 8 of the 16 vowels. Thus, for the full set of 64 Aksharas, one needs a codon with length more than 3, atleast for some Aksharas, while remaining at 3 for other Aksharas, ie the word length is variable, similar to actual spoken languages. (https://www.researchgate.net/publication/13233725_Linguistic_Features_of_Noncoding_DNA_Sequences)

Research has found that this is indeed the case for noncoding DNA, erroneously called Junk DNA, making up 98% of the human genome. Research, particularly the ENCODE project has shown that the junk DNA performs atleast 3 vital tasks:

1. It acts as an epigenetic system, turning on or off regions of coding DNA. Sometimes these mutations result in serious diseases.
2. It acts to bind together two proteins generated by the coding DNA.
3. It acts as a GPS system, sending the generated proteins to specific regions within the body. This is what distinguishes cells by functionality, such as a skin cell apart from a nerve cell, even though the base DNA of both are the same.

With respect to coding DNA however, one only needs 22 distinguishable sequences, corresponding to the 22 proteins. This can be achieved with 3 length codons. Thus, using the rules, one maps the codons to the 22 Aksharas of Hebrew alphabet. As specified in the table earlier, duplicate codons do exist for each Akshara as well. However, one observes that these rules do not apply to the 3 stop codons corresponding to Aksharas A, Sha and Ma. This is clearly an in-built feature to not just recognize proteins for the codons but also to start or stop DNA transcription, and for this reason, the three codons may be hardwired into the system.

The mapping between Aksharas and Proteinogenic Amino Acid codons are as follows. X denotes common placeholder that can be substituted with any of the 4 bases - A C, G or U.

Protein	Codon	Alphabet	Akshara Name
Phenylalanine	UUU UUC	T	Thamasya
Leucine	CUX UUA UUG	P	Parvathi
Isoleucine	AUU AUC AUA	R	Raktha
Methionine	AUG	A	Amrutha
Valine	GUX	K	Kalaratri
Serine	AGU AGC UCX	H	Hamsavathi
Proline	CCX	B	Bandhini
Threonine	ACX	V	Varadha
Alanine	GCX	G	Gayathri
Tyrosine	UAU UAC	Th	Sthanvi
Pyrrolysine	UAA UAG	M	Mahamaya
Histidine	CAU CAC	X	Akshara
Glutamine	CAA CAG	'	Ekapada
Asparagine	AAU AAC	I	Yashasvini
Lysine	AAA AAG	L	Lamboshti

Aspartic Acid	GAU GAC	C	Chamunda
Glutamic Acid	GAA GAG	Q	Khanditha
Cysteine	UGU UGC	N	Anantha
Selenocysteine	UGA	S	Shridevi
Tryptophan	UGG	D	Damari
Arginine	AGA AGG CGX	Sh	Shhanda
Glycine	GGX	Z	Jaya

The earlier section explained the concepts of Aksharas in connection with Sri Yantra Avarana Devatas. From this, and the above table, we can see how the 22 alphabet set is a self-contained subset of the Aksharas, with the focus being physical processes in the functioning of life, as understood in the human body through protein functions.

From Aksharas of the Sarvasaubhagyadayaka Chakra, we can see 6 alphabets - Ka, Kha, Ga, Cha, Ja and Da. These in a way represent body, mind, soul triality while also conserving Ida-Pingala duality. Importantly, the concept of Nadis acquire different meanings in different contexts - as physical body, Nadis are circulatory systems transporting blood, glucose and other nutrients. As Intellectual mind, Nadis are nerves which transmit signals, impulses etc. As soul, Nadis represent flow of consciousness pertaining to bliss. One can see all 3 contexts as follows.

Ka, Kha and Ga represent physical level. Ka as Bhootavinyasini seen earlier is concentration of nutrients. This is achieved by Valine, which is an essential amino acid, ie it has to be obtained through food intake. The Valerian plant root, after which the amino acid is named, represents source of nutrition, which is absorbed into the body by valine.

Khandita means to break down into segments, and this is what Kha does as Glutamic acid, by means of transamination metabolism, as well as disposing of excess nitrogen from the body. Finally, Ga or Dhoomra represents distribution of nutrition throughout the body. This is done by Alanine, through the glucose-alanine cycle. The three Aksharas feed to Gha which is an Ida companion Nadi.

Cha and Ja represent the "mind" aspect - pertaining to nervous systems. Consequently, these amino acids are neurotransmitters. Of these, Cha ie Aspartic Acid, is an excitatory neurotransmitter whereas Ja ie Glycine is Inhibitory. Ida and Pingala balance is seen here.

Finally, the soul or bliss aspect is seen by Da, which is the Pingala, to bring balance to Ida derivatives Ka, Kha and Ga. Da represents Tryptophan, a precursor to serotonin, and thus crucial in promoting calmness, love, bliss etc. Thus, the 6 amino acid alphabets of Ka, Cha and Ta Vargas form a balanced set corresponding to body, mind and soul.

The next set is that of 5 Aksharas - Tha, Thha, Na, Pa and Pha, corresponding to Sarvarthasadhaka Chakra. These represent the 10 Vayus, of which Tha and Dha are the complementary Apana and Udana Vayus. Of these Th or Apana Vayu is seen as a protein phenylalanine, which is a precursor for the adrenaline epinephrine and norepinephrine. The represents physical performance, while Dha representing spiritual performance is not included in the set of 22. Similarly in the complementary Vayus of Thha and Dhha, Thha or Vyana Vayu is seen as Tyrosine, which plays a special role in signal transduction processes, and also contributes to mental alertness when required.

Pa is the chosen member of the Pa-Pha duality, which represent physical strength. Pa is Leucine, which promotes muscle growth and slows muscle degradation. Ba Bha duality represents space-time regulation, and of these Ba representing space is mapped to Proline, which is often seen as response to stress, as well as an osmoprotectant. Thus, the 4 dualities Tha-Dha, Thha-Dhha, Pa-Pha, Ba-Bha are represented by Phenylalanine, Tyrosine, Leucine and Proline. Central and anchor to the 4 dualities is Na, which is Naga Vayu represented by Cysteine. A crucial factor in earth's primitive life, cysteine is an antioxidant, promoting heart health and neutralizing harmful free radicals.

Further, from Ya and Sha Vargas, one finds six Aksharas as alphabets. Of these Ya, Ra, La, Va and Ha represent burning obstacles and digestion using conceptually the five elements of nature. Ya maps to Vayu, which is synonymous with mind. So too, the amino acid Asparagine is crucial for growth and development of the brain. Ra represents Raktha or Agni, burning of nutrients, and as Isoleucine, represents glucose consumption.

La maps to Prithvi, symbolising substance and density. So too, lysine promotes calcium homeostasis, fatty acid metabolism, and structural proteins of connective tissues. Va maps to Jala, and represents filling up of deficiencies. The corresponding amino acid Threonine is crucial for development of elastin, collagen, enamel protein, as well as production of antibodies. Finally Ha denotes Akasha which is also synonymous with wisdom or Chidakasha. So too, Serine, the corresponding amino acid, is a neuromodulator, as a signaling molecule in the brain.

Apart from the five, we also find Shha or Shhanda mapped to Arginine. Shhanda corresponds to Kriya among the 3 Shaktis used for digestion, this one pertaining to breaking up nutrition by brute force. So too, the amino acid Arginine is seen in cell division, wound healing as well as blood pressure regulation.

From the A Varga, 2 alphabets are seen. E or Ekapada maps to Smrithi or memories and experiential wisdom in the brain. Among the variety of biochemical functions, the glutamic acid is also capable of crossing blood-brain barrier, so as to provide nutrition to the brain. Ah or Akshara is Shareerakarshini, representing maintenance of the body. So too, the amino acid Histidine is crucial in immune system development.

Finally, there are the three special codons mapping to A, Ma and Sha. A maps to Methionine, which has a crucial role in protection from senility, depression etc. A as Kamakarshini does map

to the mind. Ma and Sha acquire their values as Sarvajna, Jnana knowing all, as well as Iccha Shakti used to break obstacles. These two map to Selenocysteine and Prolycine, and both are primarily stop codons, where reading of the code comes to a halt.

Thus, one can see how the Brahmi alphabet subset of 22 Aksharas accurately describes the coding part of DNA. Similarly, one can understand the non-coding part of DNA through the Aksharas both included and excluded from this subset, in terms of codons

Vedic Timescales

The Renowned Astronomer and Cosmologist Carl Sagan once said “The Hindu religion is the only one of the world’s great faiths dedicated to the idea that the Cosmos itself undergoes an immense, indeed an infinite, number of deaths and rebirths. It is the only religion in which the time scales correspond to those of modern scientific cosmology. Its cycles run from our ordinary day and night to a day and night of Brahma, 8.64 billion years long. Longer than the age of the Earth or the Sun and about half the time since the Big Bang”.

Building on this, the focus of the present section is the Vedic Timescale, and how they map to current understanding of science. In decreasing order of duration one may consider the Vedic Timescales as Mahapralaya, Pralaya, Kalpas, Manvantaras and finally Yugas.

By definition, Mahapralaya is denoted as complete destruction of everything in the universe, leaving absolutely nothing behind. Pralaya on the other hand, is a partial destruction occurring at the end of an eon or Kalpa.

At this point, one wonders about the fate of the universe. Based on physical observations, one can be reasonably certain about the Big Bang being the origin of the universe. But what would its end be like? In the yesteryears, three choices were proposed - an ever expanding universe, a universe contracting to end in a big crunch, or a steady state model. From Einstein’s Relativity, one could understand the shape of the universe accordingly as hyperbolic, spherical like or flat.

However, findings from the Hubble have shown important facts - the universe is not only expanding, but such an expansion is going on in an accelerated rate. But also, the universe is flat rather than hyperbolic - this puzzle was solved by the dark energy, which arose from the cosmological constant inherent to space time itself. Thus, Dark Energy definitely rules out a big crunch option of the universe’s death.

In recent times, String theory emerged as the contender for a Theory of Everything, and for its part predicted a Big Bounce, similar in ways to the big crunch but a cyclic process, with our universe being among a series of universes created and destroyed periodically. However, with recent findings one understands that this theory is being put into jeopardy, yet again due to dark energy.

[\(https://www.quantamagazine.org/dark-energy-may-be-incompatible-with-string-theory-20180809/\)](https://www.quantamagazine.org/dark-energy-may-be-incompatible-with-string-theory-20180809/)

In short, one finds that dark energy prohibits any matter of energy based contraction of the universe, leading to decrease in space time and thus death. Yet, from Vedic sources we do find that the universe is constantly created and destroyed in series of Mahapralayas. How could this happen?

The answer might lie in the informational domain. In the E8 Theory of Everything, it was understood that the universal wavefunction is a chaotic signal, whose three components in their 8 entangled states are the E8 Charges, all of them existing in an informational space, and that creation began with the dawn of space time which in turn arose from breaking the symmetry of the E8 group, by making the Higgs field non-zero. Thus, the ultimate origin of the universe lies in a non-zero information value.

This means that if the Higgs field were to be turned zero again this very instant, the universe would simply collapse into nothingness instantly - no spacetime, no matter and no energy. This is a far more feasible and far less dramatic way of the universal extinction than big crunches and big bounces. This follows from the fact that the basis of matter and energy is information, seen as probability states in the quantum wavefunctions. It is information which manifests as matter and energy through various stages of interaction and entanglement, and complete destruction or Mahapralaya through informational realm is completely possible.

Pralaya is a partial destruction. In Vedic timescales, we find this occurring at the end of a Kalpa. A Kalpa or eon is a day of Brahma, consisting of bright and dark halves, each lasting 5 billion years approximately. Matsya Purana lists 30 Kalpas, stating that we are currently in the 26th - Shveta Varaha Kalpa. However, the observed age of the universe itself is just 13 billion years. Thus, it is not possible that 25 Kalpas have passed consecutively one after the other.

At this juncture, we must remember the relativistic principle that space and time must be seen as one single entity - spacetime. Hence, the descriptions of the Kalpas are not distinct units of time alone, but space also. That is, Kalpas run simultaneously in different regions of the universe, and not necessarily one after the other.

A Kalpa lasts 10 billion years. It is an observed fact that the Earth is nearly 5 billion years old. It is also understood that after nearly 5 billion years from now, the sun will meet its end. This duration of the solar system as $5+5=10$ billion years tallies remarkably with the Kalpa duration. Thus, Kalpas are solar systems, systems of stars with possibly exoplanets supporting life.

At this point, one asks the question, what is life? A generally agreed definition is that life consists of the dual functionality of sustenance and signaling. Earlier article discussed these two dimensions as Life and Sense, from an informational perspective.

From basic chemical elements, one might form complex structures and macromolecules. If these are capable of the sustenance and signaling functions, they become biomolecules, and kickstart life and evolution. The DNA-RNA is just one example of such a biomolecule - consisting of Hydrogen, Carbon, Oxygen and Nitrogen. However, it would be naive to assume that only this configuration could generate life. Theoretically, it is possible that one might develop life from other combinations of elements too, and it is possible that such life could exist on environments that do not support water.

https://en.wikipedia.org/wiki/Hypothetical_types_of_biochemistry

Thus, all such solar systems formed around different stars in different regions of the universe - all form Kalpas, which are possibly arranged in chronological order based on date of creation. In that order, our solar system and earth is the 26th. The name Shveta Varaha Kalpa brings to the discussion the incarnations of Vishnu.

Among the 33 Devas are included the 12 Adityas. These capture the variety of the universe as seen relative to the earth as positions in the sky, called zodiac. This leads to the study of astronomy and astrology. The study is based on the energy sources that affect life on earth the most. These are called Grahas.

Without doubt, all energy on earth traces back to the sun. Apart from solar energy directly, the sun's energy reflected through various celestial bodies also influence earth, the most significant being the moon. Causing tides, it is understood that moon played a crucial role in life and evolution transitioning from aquatic to amphibian and finally terrestrial. It is also understood that the moon affects the psyche, observable on full and new moon days.

Apart from the moon, various planets also influence the earth, though in much less capacity and intensity. The only significant sources are the five planets of Mercury, Venus, Mars, Jupiter and Saturn. Thus these are also included along with the sun and moon.

In addition to these, one must take into account the interactions between these celestial bodies. However, the five planets are too insignificant to consider motion based changes in energy influences, leaving out the sun and moon. A significant problem and study in science done by Newton, Galileo and others was the Three Body Problem, trying to study the relative motion of the sun, moon and earth. Poincare pointed out that this motion and its interrelations are a complex affair, and was the precursor to our understanding of Chaos Theory.

It is to account for this aspect that the Vedic culture had introduced two Chaya Grahas or 'shadow planets', called Rahu and Kethu. These were not planets, but merely points in the moon's orbit around the earth, in the side facing and opposite to the sun. Whenever the trio of earth, moon and sun perfectly aligned, one of the sun or the moon would be eclipsed relative to earth. This was described as the sun or moon being swallowed by Rahu or Kethu, since the positions of these points were the reasons for the eclipse. Thus, we now have the complete set of the Navagrahas - the sun, the moon, the five planets, Rahu and Kethu.

Among the Avatars of Vishnu, one observes these facts. Particularly in the Kurma Avatara, one sees that Chandra the moon God emerges from the ocean. In the same context, Rahu and Kethu are created from the severed parts of an Asura Swarnabhanu. Thus, this Avatara alludes to the creation of the moon, and also to its orbit containing the two nodes of Rahu and Kethu. The following Avatara, Varaha relates saving the earth from a state of disorder and destruction. This might possibly describe the stabilization of earth's orbit and conditions conducive to life. Only after such stabilization is life on earth rendered possible, and for this reason, our present Kalpa is named after Varaha.

Manvantaras - Human Races

Within Kalpas the Vedas mention various Manvantaras. Our Kalpa consists of 14 Manvantaras, each mentioned to last for around 300 million years. The definition of Manvantara comes from Manu - the progenitor of human race. Each Manvantara corresponds to the duration of a Manu, denoting multiplication to create humans, and ends when such progeny ends. We are currently in the 7th Manvantara.

Scientifically, we have observed that humans have lived on earth only as far back as 300,000 years. This is far short of even a single Manvantara, let alone 7. To explain this, one can consider two possibilities. First, that there have been advanced species before the current homo sapiens, or that the Manvantaras are listing other animal species and not just humans. Earlier advanced species would surely leave records in geological artefacts, and while there are signs of what could hint at these, it is near impossible to find 6 layers of advanced species before humans. (<https://www.livescience.com/62338-intelligent-life-on-earth-before-humans.html>)

Secondly, the Manvantara states that 7 more are yet to come, and it is hard to visualize the evolution of humans further than the current state, or that life on earth would continue beyond humans, given how most factors of the environment have been tampered with and changed drastically by humans, such as global warming, ozone layer holes, resource depletion, genetic modifications, radioactivity etc.

A second option of resolving this, is similar to our interpretation of Kalpas - Manvantaras represent variations not in time, but in spacetime. That is, Manvantaras need not necessarily be one after another, but parallel and simultaneous in different regions of the planet, as different human races originated by the 14 "Manus". It is mentioned that of the 14, the Manus of the 3rd, 4th and 5th are brothers - this clearly affirms that the Manus are simultaneous rather than sequential. With this understanding, we shall now explore the Manvantaras in light of anthropology and world civilizations.

Earlier we had elaborated on a fact mentioned by Mahaperiyava Chandrasekharendra Saraswathi Shankaracharya of Kanchipuram - that the Vedic language is the oldest and is ancestor to all languages on earth today, including Sanskrit, Tamil, Hebrew and many more.

We had seen how there was a Globalized Vedic Era where everybody living on this planet spoke this one language, had one common wisdom - the Vedas, protected by the seers or Rishis, who used Yoga to telepathically communicate with one another. The Vedas contained the highest states of human thought and consciousness, and people could spiritually advance to the highest stage of Liberation or Mukti, bringing to completion their purpose of life.

However, as ages passed, localized variations of the Vedic language arose which eventually gave way to different languages and language families. As the Vedic language morphed into

Sarva Vidya - Sai Venkatesh

these languages, people lost touch with the Vedic wisdom. This necessitated the Divine to manifest in different forms in different cultures so that spiritual wisdom may not be lost. These forms gave rise to what we see today as world religions. Thus, the root of religion is language.

Even going by earliest possible dating estimates, one can find that language families did not appear anytime before 20,000 years of the present. However, it is understood that humans have inhabited the planet for anywhere between 100 to 300 thousand years. Thus, this time duration between human appearance and language formation - a duration of at least 80,000 years, corresponds to the Global "Vedic Age". It is in this era that the 14 Manus originated human races in various regions of the world.

It was also seen how manifestations of God, which included incarnations or Avatars, were rendered necessary due to loss of Vedic wisdom globally, due to growth of cultures speaking different languages. In this "Vernacular Age" the Vedas were preserved only in one region - the Indian Subcontinent, that too using Sanskrit - a language synthesized as a diluted version of the Vedic language. Within India, the Puranas and Itihasas record the various Avatars of the Divine Lord Vishnu.

The Vernacular Age is best understood in the framework of the four Yugas or Eras. These are applicable to all the 14 Manvantaras, but within the Indian Manvantara, one can understand the 4 Yugas through Vishnu Avatars. Apart from the life creating Kurma and Varaha and earlier Matsya Avatars, the first Yuga, Satya Yuga concludes with Narasimha Avatars, believed to be connected to local sites in India such as Ahobilam and Joshimath. This is the first Avatars to mention such localization, as well as human beings such as Prahlada, and is followed by Vamana Avatars connected with Kerala, Sirkazhi, Kanchipuram. Thus Satya Yuga includes the transition from Vedic to Vernacular Ages. The next Yuga, Treta, saw incarnations as Parashurama and Rama. Dvapara the 3rd Yuga saw Krishna and Balarama, whereas the present age Kali sees Buddha and Kalki.

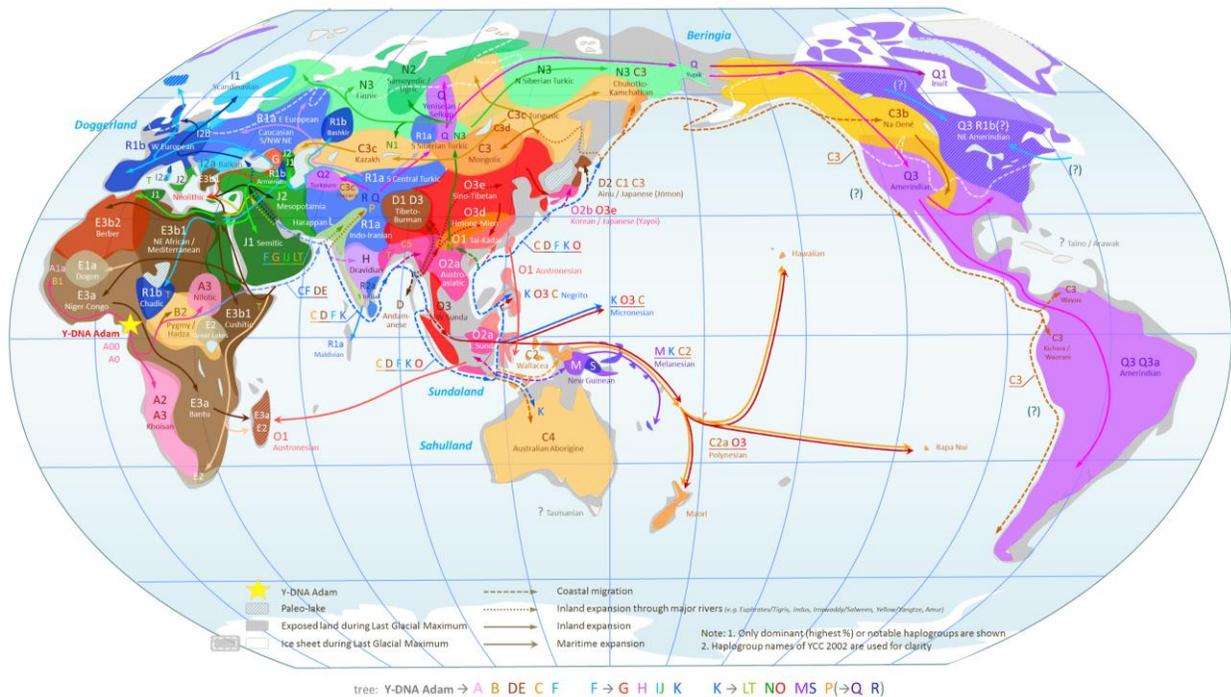
In the system of Manvantaras, each of the 14 is named after the originator Manu of that race. These Manus were without doubt from the Vedic and not the Vernacular Age. At the origin, these races were indeed speaking the Vedic language. However, due to divergence they entered vernacular age, necessitating divine manifestations. Thus each Manvantara also specifies an Avatars of Lord Vishnu local to that race. In addition, each Manvantara also mentions the seven seers or Sapta Rishis, who contributed to spiritual wisdom of that race. These Rishis could be from Vedic and/or Vernacular ages. This is why one sees Vedic era Rishi names like Kashyapa as well as Vernacular era names such as Ashvathama and Parashurama. Due to differences in languages, the Gods such as Indra etc are also seen different in each Manvantara. The seventh Manvantara corresponding to India alone retains the original 33 Vedic deities, since the Vedas were preserved in this race using Sanskrit.

Starting from the Manus, through thousands of years, people have maintained the lineages patrilineally, using the Y-Chromosome in DNA, existing only in males. This is visible in the Vedic tradition of Gotra, where a person claims descent from one of the 14 Manus, through one of the

7 Rishis of that Manvantara. Thus, in summary, the Manvantaras are a spacetime description of human race and peopling, which corresponds to human migration patterns studied using genealogy, through Y-DNA Haplogroups.

In current understanding of genealogy, one places the earliest human, in Africa, and building from there develop an Out of Africa hypothesis. However, older skeletons found in various parts of the world constantly challenge this model. Furthermore, Mahaperiyava had quoted the Srimad Bhagavatham stating that the 1st of the 14 Manus lived along the banks of Vaigai river near Madurai, Tamilnadu. In another discourse, Mahaperiyava had also confirmed the existence of Kumarikandam, an extension south of the Indian subcontinent, that eventually submerged, even before the Vedic Age ended. In Tamil literature, Madurai is often mentioned in connection with the Kumarikandam, ruled by Pandya kings. Thus, from all these, one could presume Kumarikandam, including Madurai, to be the region of the first Manu, and thus the original birthplace of human beings. This can be seen as an extension - a precursor to the first African haplogroups, such as A and B. For convenience, we presume the Kumarikandam haplogroup 0.

Thus we understand that among the 14 Manvantaras, the first is Kumarikandam, second is early Africa and seventh is India. With this information, we can correlate with the Y-DNA migration patterns and haplogroups, and from these, we can identify the races specified by the 14 Manvantaras. We can also understand which of the 48 manifestations mentioned in earlier articles arose from each of the Manvantaras.



Manvantara Name, Number	Sapta Rishis, <i>Vishnu Avatara</i>	Haplogroups & Regions; Age (KiloYears) [Descendant of]
1. Svayambhu	Marichi, Atri, Angiras, Pulaha, Kratu, Pulastya, Vashishta; <i>Yajna</i>	0 Kumarikandam (Age Unknown)
2. Swarochisha	Urjastambha, Agni, Praña, Danti, Rishabha, Nischara, Charvarivan; <i>Vibhu</i>	A, B West Africa, Nilotic, Khoisan 236-130ka [0]
3. Uttama	Kaukundihi, Kurundi, Dalaya, Śankha, Praváhita, Mita, Sammita; <i>Satyasena</i>	C Australia, Dene Japan, Tungusic Wallacea 68ka
4. Tapasa	Jyotirdhama, Prithu, Kavya, Chaitra, Agni, Vanaka, Pivara; <i>Hari</i>	D Andaman, Ainu, Altaic, Tibetan 64ka
5. Raivata	Hirannyaroma, Vedasrí, Urddhabahu, Vedabahu, Sudhaman, Parjanya, Mahámuni; <i>Vaikuntha</i>	E Niger Congo, Berber, Bantu, Cushite, Dogon 64ka
6. Chakshusha	Sumedhas, Virajas, Havishmat, Uttama, Madhu, Abhináman, Sahishnnu; <i>Ajita</i>	F Mesopotamia 65ka
7. Vaivasvatha	Kashyapa, Atri, Vashista, Vishvamisra, Gautama, Agastya, Bharadvaja; <i>Vamana</i>	H India, Persia 48ka [F]
8. Savarni	Diptimat, Galava, Parasurama, Kripa, Ashwatthama, Vyasa, Risyasrnga; <i>Sarvabhauma</i>	G Caucasus, Neolithic 48ka [F]
9. Daksha	Savana, Dyutimat, Bhavya, Vasu, Medhatiti, Jyotismá, Satya; <i>Rishabha</i>	I Balkan, Celtic Scandinavian 42ka [F]
10. Brahma	Havishmán, Sukriti, Satya, Apámúrtti, Nábhága, Apratimaujas, Satyaket; <i>Vishvaksena</i>	J Semite, Caspian Sicily, Atlantic 42ka [F]
11. Dharma	Níschara, Agniteja, Vapushmá, Vishnú, Áruni, Havishmá, Anagha; <i>Dharmasetu</i>	K, <u>L</u> , <u>M</u> , <u>S</u> , <u>T</u> Melanesian, <u>Indus</u> , <u>Negrito</u> , <u>Micronesia</u> . Afar. 45ka [F, K]

12. Rudra	Tapaswí, Sutapas, Tapomúrtti, Taporati, Tapodhriti, Tapodyuti, Tapodhan; <i>Sudhama</i>	N Siberian, Turkic, Finnic, Ugric 40k [K]
13. Deva	Nirmoha, Tatwadersín, Nishprakampa, Nirutsuka, Dhritimat, Avyaya, Sutapas; <i>Yogeshwara</i>	O, <u>P, R</u> Sino-Mien-Tai, Oceania, Austric <u>Iran-European, Central Turkic</u> 44-30k [K, P]
14. Indra	Agnibáhu, Śuchi, Śhukra, Magadhá, Gridhra, Yukta, Ajita; <i>Brihadbhanu</i>	Q Turkmen, Inuit Yenisei, Amerind 30k [P]

Some important points need to be noted in context of this Haplogroup-Manvantara mapping. First, most haplogroups beautifully represent indigenous cultures developed around it, in a defined region of the planet. However, some haplogroups are of a migratory type. That is, they arise from a parental regional haplogroup, but are found in vast swathes of regions distributed across multiple continents, populating regions already inhabited by other, earlier haplogroups.

For example, haplogroups K, L and M arose from F around 45000 years ago. Though F is indigenous to Mesopotamia, KLM peopled vast swathes of areas such as Indian subcontinent, Melanesia and Micronesia, all areas inhabited by earlier haplogroups such as C and H. The only uninhabited area populated indigenously by the KLM is Papua New Guinea. Such non-indigenous haplogroups are assimilated into existing populations through intermixing and marriages. However, the patrilineal lineage will remain unbroken from the parent haplogroup due to Y Chromosomes. Thus, even though L Haplogroup originates from Mesopotamian F, migrates to India and intermixes with the H Haplogroup, Y Chromosomes from the F will be maintained intact in the L, even though they now reside in India and not Mesopotamia.

This understanding is all the more crucial in the modern age, where colonization and globalization have rendered tremendous intermixing and migrations of people from across the globe. Even in spite of this, the Y DNA Haplogroups and Manvantaras are always maintained intact albeit obscured at times. A simple genealogy test will easily remove the obscurities and point to the original Manvantara or Patrilineal Haplogroup of every living human being.

The age of a Manvantara is 306 million years, while humans inhabited the earth for at most 300 thousand years. This might give a clue of how much longer humans will sustain on earth until they will out of force or choice be rendered impotent, collapsing the 14 races. However, it is interesting to note the first Manvantara - Svayambhu. This race occupied the Kumari Kandam, which remains submerged for much more than 20,000 years now.

However, the Svayambhu Manvantara has not ended, which means the race is still alive. But where? One might presume that the inundations and floods in the region might have forced people to move to neighboring lands, those being Southern tip of India, East Africa, and

Indonesia-Australia. One might find haplogroups of this stock in the mentioned populations if searched.

With this understanding of Manvantaras, we now proceed to the next Timescale - Yugas. It is said in Puranas etc that each Manvantara consist of 72 Mahayugas, each of which consist of 4 Yugas or eras. These are the Kritha, Tretha, Dvapara and Kali, which are respectively 4, 3, 2 and 1 times as long as the Kali Yuga. While some calculations put the age of Yugas to periods extending 100,000 years, this does not corroborate with observed evidence regarding human existence and civilization.

Mahaperiyava had on one occasion told that our current understanding of dates might be flawed on three accounts. First, astronomical patterns usually held as reference points, might repeat multiple times, because of cyclic planetary motions. Second, dating based on language phoneme changes is elusive at best, since languages such as the Vedic have in built error correction facilities, and thus phonemes would change much much slower than in a normal language. Third, archaeological evidences always point toward materialism. However, most of the ancient Vedic civilization was non-materialistic, with even the severe of nuclear weapons invoked using Mantras and a blade of grass, and not through radioactive material.

Thus, from this, it would seem that our understanding of human prehistory might need to be revised in a big way. However, evidences of human existence through evolution from other species, as well as certain evidences of civilization etc are existent, and assuming that we are not missing much information, we shall now attempt a timeline of Yugas. Our reference shall be dating of Vishnu Avatars that are recorded to appear in these Yugas.

It is said that each Manvantara consists of 72 Mahayugas or cycles of 4 Yugas. Even with the oldest observed race or Manvantara, that of Y-DNA A or B, we have Manvantara length 144ka. This would put one Mahayuga as 2000 years, and one Kali Yuga as 200 years. Clearly these durations are ridiculously short, and do not corroborate with the Vishnu Avatars.

Thus, it is possible that just like Kalpas and Manvantaras, Mahayugas are also spatiotemporal - ie right now, many or even all Mahayugas are running simultaneously, but in different geographical regions. They are arranged in seniority of their origin and do not necessarily imply one Mahayuga starts only after the previous is finished. We can find evidence for this in literature. If Mahayugas were cyclic and not spatiotemporal, there would be references for Rama 72 times, one for Treta Yuga of each Mahayuga. However, Srimad Bhagavatam in 8.24 mentions Rama as the 24th Treta Yuga in Vaivasvata Manvantara.

Thus, we understand that while the 7th Manvantara was originated by Vaivasvata Manu, the 72 Mahayugas are indications of his 72 descendants, each continuing the race further in specific lineages and geographic regions. Arranged by seniority, the 24th lineage is the famous Suryavamsa which produced Ikshvaku, Dasharatha and eventually Rama. Extending this understanding, we observe from the Bhagavatham Vamana as the 7th Treta Yuga, Dattatreya in

10th Treta Yuga, Parashurama in 19th Treta Yuga, Krishna and Veda Vyasa in 28th Dvapara Yuga, Buddha and Kalki in the 28th Kali Yuga. Interestingly, Vamana is mentioned as Vishnu Avatara for the 7th Manvantara and indeed, all these Avatara listed above starting with Vamana are recorded in Vaivasvatha Manvantara.

Even more interesting is the mention of earlier Avatara in Manvantaras other than Vaivasvata. Narasimha is mentioned as Tapasa Manvantara, corresponding with haplogroup D, while Matsya corresponds with haplogroup F as Chakshusha Manvantara. This corresponds with Mesopotamia, and it is interesting to see how the great flood narrative of Matsya Avatara corresponds with the flood of Noah in the Bible. There is hardly doubt that the narrative of Noah itself is taken from the Epic of Gilgamesh, of the Sumerians. Thus, we can see complete concurrence between Vedic, Biblical and local Sumerian sources on the great flood, its geographical region, and its timeline.

It is suggested that the name Noah comes from Navai or Naava, which in Sanskrit, Tamil and Vedic language means boat, alluding to the Ark. Biblical scholars mention Noah speaking not Hebrew but the Adamic language - a universal language spoken by all mankind since Adam. This of course is a reference to the Vedic language. Mahaperiyava had indeed mentioned once that the Biblical story of Adam and Eve derives from the Upanishadic narrative of Atma and Jiva, with the morphing evident even in the names of the couple.

Thus, having established 72 Mahayugas as lineages within a Manvantara, we now proceed to understand Yugas. It is said that we currently live in the Kali Yuga, and that it started with the end of Mahabharata war and passing away of Lord Krishna. By astronomical dating, one arrives at the date of 3102BC for end of Dvapara and start of Kali Yuga. Most Sanskrit scholars place the date of Rama and Ramayana at 15000BC. This would mean the end of Treta and start of Dvapara. From these bases, we get the age of Dvapara to be $15000-3000=12000$ years.

(Richter-Ushanas, Egbert (1997). *The Indus Script and Rg-veda*. Motilal Banarsidass Publ. p. 16. ISBN 9788120814059.) (<http://www.galacticresonance.org/ancient-rama-empire-of-india/>)

This would put Kali Yuga as half that long, ie 6000 years beginning from 3102BC. Treta Yuga, three times as long would be 18000 years, and Kritha would be 4 times as long as Kali ie 24000 years. There is a significance to this length of the Yugas. The value of 24,000 years fits relatively close with the modern astronomical calculation of one full precession of the equinox, which takes 25,772 years. This phenomenon is observed as the stars moving retrograde across the sky at about 50 arc seconds per year, and is thought to produce periods of warm ages and ice ages known as the Milankovitch cycle.

Thus, we have the timelines for Yugas as Kritha:57000BC-33000BC; Treta:33000BC-15000BC; Dvapara:15000BC-3102BC; Kali:3102BC-2898AD. These timelines are for Vaivasvata Manvantara, and would apply more or less similar to other Manvantaras or races too. There are specific characteristics mentioned too for the 4 Yugas as follows.

“Krita Yuga was so named because there was but one religion, and all men were saintly: therefore they were not required to perform religious ceremonies. The Vedas were one. All mankind could attain to supreme blessedness. There was no agriculture or mining as the earth yielded those riches on its own. Weather was pleasant and everyone was happy. There were no religious sects.” This was clearly the Vedic age with the seven Rishis of each Manvantara.

“Treta Yuga: virtue diminishes slightly. Emperors rise to dominance. Wars become frequent and weather begins to change to extremities. Oceans and deserts are formed. Agriculture, labour and mining become existent.” It is known that 22000 to 14000 years ago was a period of climatic extremity with the last major advancement of ice sheets conditions of the Pleistocene epoch with 18000 years ago being conditions of severe aridity and cold. Also the Holocene epoch from 25000 to 10000 years before present witnessed the start of environmental processes such as soil formation and plant successions, which are ultimately the roots of planting and agriculture.

“Dvapara Yuga: People become tainted with Tamasic qualities. Diseases become rampant. Humans are discontent and fight each other. Vedas are divided into four parts.” It is known that significant global warming of 4-5 degrees Celsius of the last 15,000 years, marks the recovery of the earth from the last ice age. Moreover, Epidemics caused by viruses began when human behaviour changed during the Neolithic period, around 12,000 years ago, when humans developed more densely populated agricultural communities. This allowed viruses to spread rapidly and subsequently to become endemic. Viruses of plants and livestock also increased, and as humans became dependent on agriculture and farming, diseases such as potyviruses of potatoes and rinderpest of cattle had devastating consequences.

“Kali Yuga: Age of darkness and ignorance. People become sinners and lack virtue. They become slaves to their passions. Society falls into disuse and people become liars and hypocrites. Knowledge is lost and scriptures are diminished. Humans eat forbidden and dirty food. The environment is polluted, water and food become scarce. Wealth is heavily diminished. Families become non-existent.” We can clearly observe these effects in many ways - deforestation, global warming, air pollution, malnutrition and starvation, rising atheism, increase of crimes, suicides etc.

Thus, the four Yugas clearly coincide with descriptions in literature, as well as terrestrial changes and astronomical changes like the precession of equinoxes. These give a precise account of developments in humanity and civilizations to the present age.

Interestingly, the four Yugas combined describe only a portion of human existence. Before the first Yuga Kritha and after the last ie Kali, exists a period known as Satya - often erroneously used interchangeably with Kritha Yuga. It is said that Kalki will appear at the end of Kali Yuga and will usher in the Satya era. However, nowhere is it said that Kalki will destroy all mankind - Kalki is far from a Pralaya scenario where all creation is wiped out. Rather, Kalki, like other Avataras Krishna, Rama etc, will only wipe out evil, punish the wicked and reward the good. Thus, humanity will continue even after Kalki and the end of Kali. This age will be that of Satya,

of right conduct, of less materialism, and increased interest in spiritual pursuit. However, this will also mean less interest in libido and progeny, and would slowly decrease human population, as is seen today in some countries like Japan. The average age of alive human population will gradually increase, and with reduced progeny, the 14 races will slowly come to a halt. In this manner, humanity will wipe itself out.

The Fourteen Worlds

The previous sections highlighted various aspects of the cycle of wisdom, and in each stage, we see that Vedic wisdom is consistent with observations in nature, mathematical, physical, life and social sciences, and is all-encompassing.

All these aspects of Vedic Wisdom are encompassed in the Vedic World View, which mentions of Chaturdasha Bhuvanas or 14 worlds. Rather than physical planets or entities, the 14 worlds represent various stages in the wisdom cycle as will be explained below.

One can discern the following stages in the cycle of wisdom:

1. The Spiritual Path or Shodashi - escape route from Maya world to Blissful Reality
2. The 16 MBTI Mindset Factors clustering to form shapes and hence the Sri Yantra
3. Avarana Devas of the Sri Yantra enumerating a conceptual cosmological blue print
4. Numbers and Mathematics from the 9 Avaranas creating geometry and eventually the E8
5. E8 assuming charges, big bang and physical creation of universe until solar system, earth
6. Pindanda, as a conceptual blueprint from Sri Yantra outlining design and aims of life
7. The non coding and coding subsets of DNA make the Pindanda concepts physical
8. Fully evolved man uses speech as Aksharas to harness energy - Vedic language is born
9. Man migrates - human races or Manvantaras though with single language, single religion
10. Races start to evolve into vernacular languages, cultures, lose touch with Vedic wisdom
11. Divine manifests in different cultures to ensure spirituality accessible - Religions form.
12. Minds purified, people advanced in religion enter the Spiritual path, completing the cycle.

From the description of the 14 Bhuvanas, one can understand the correspondence as follows:

Satya Loka: Fixed eternal reality, that opens a spiritual connection to the Divine or universal consciousness. It is where the yogi achieves moksha, or liberation from the recurring cycle of birth, death and rebirth, and union with the higher Self. Clearly, this is the Spiritual Path or Shodashi.

Tapa Loka: Plane of conscious energy and spirituality. The word tapas comes from the Sanskrit tapas, meaning "heat", referring to austerity. It is inhabited by beings who no longer have care and concern for the material world and who are highly conscious and spiritual. Tapa in context of attaining liberation, is effort made to achieve progress. This effort is nothing but acquiring wisdom, changing one's perspectives and notions about reality and the world. This is the stage represented by MBTI factors and their clustering.

Jana Loka: Plane of creativity, the human plane and the plane of liberated mortals. From a yogic perspective, jana loka is associated with inner truth and understanding. This is the conceptual realm of the Sri Yantra, where the Avarana Devas describe the entire Brahmanda.

Mahar Loka: Home of the saints, sages, enlightened beings and rishis who survive destruction of the world. Thus, this Bhuvana is above the physical realm of the Universe. It is the realm of Mathematics and information space which gives rise to E8. Breaking and restoring E8 symmetry amounts to physical creation and dissolution, and the world of numbers are above both.

Swar Loka: Abode of the Gods, also called Swarga. Temporary home for the souls of the righteous who have not yet achieved the state of moksha. The Gods referred here are the 33 Devas, comprising of Vasus, Rudras, Ashvinis and Adityas. This is the physical realm, where E8 assumes charges, creates the universe from the big bang all the way till solar system, earth and life supporting macro biomolecules.

Bhuvar Loka: Region of space as immediate neighbor to Bhuloka, space between earth and Swarga, believed to house spirits, Pitris etc. This is the realm pertaining to the precursor to life, in the form of Pindanda concepts and the Genetic Codon

Bhu Loka: Sphere of the earth or Bhū-loka, comprehending its oceans, mountains, and rivers, extends as far as it is illuminated by the rays of the sun and moon. Wherever earthy substance exists, which may be traversed by the feet, that constitutes the sphere of the earth. In the cycle of wisdom, it comprises of the dwelling of fully formed human beings, who are endowed with speech as Aksharas, and migrate to form different races or Manvantaras in different regions.

Thus, the 7 upper Bhuvanas or Urdhva Lokas are described. These map to various realms of creation and existence. The 7 lower or Adhara Lokas are usually represented as subtle planes corresponding to human afflictions.

However one observes that as one descends from Satya Loka to Bhu Loka, the entities keep getting grosser and more physical than the previous. Continuing this trend, it is necessary that the 7 Lokas be physical and tangible, and not subtle realms.

One Understands that the lower 7 worlds must necessarily pertain to physical reality, that too in the context of life, and in particular human life, that yields the different Manvantaras.

Thus, the 7 lower Lokas are indeed regions of the Earth. As humans evolved from Manvantaras into different cultures, they had languages far enough to be unintelligible with their original Vedic source, and they lost touch with Vedic wisdom. This inevitably leads to a decline in character, morality and ethics, and these are the negative qualities described by the seven lower worlds.

Thus, the 7 Adhara Lokas from Atala to Patala are regions of the earth, each characterized by a predominant negative quality which arose due to losing touch with Vedic wisdom. As seen in earlier sections, this occurred through the four Yugas, with negativity increasing as time progresses. At the end of present Kali Yuga, as humans transit to the era of Truth or Satya, the negative nature will vanish.

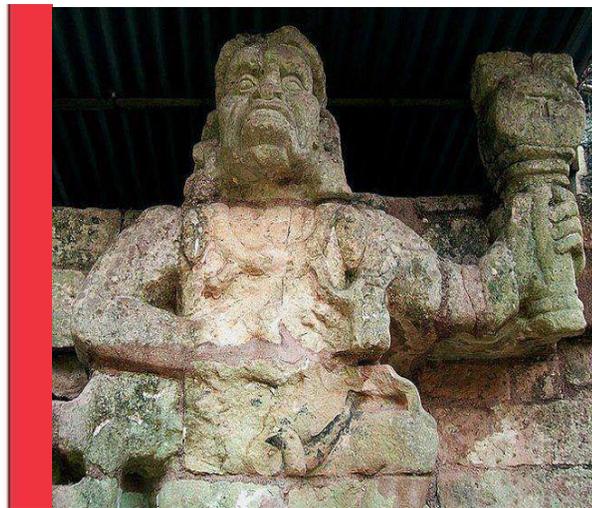
In fact, it is such negative qualities that have necessitated the Divine to manifest in different cultures and regions, so that people may have a chance to correct themselves and enter the spiritual path.

As long as the Earth is one unit, with people following one religion, one language, it makes sense to call it one world - Bhu Loka. However, evolutions of languages and cultures have created so much of disjoint and discord that the negativity is now viewed as 7 Lokas.

How does one identify the 7 regions? The answer is in Vedic Literature, which narrates various incidents regarding Patala, the lowest of the 7 Adhara Lokas. In particular, two incidents are mentioned:

1. The constant feud and rivalry between the eagle king Garuda and the serpents or Nagas resulted in Garuda carrying them and transporting them to Patala.
2. In the times of Ramayana, the monkey God Hanuman visited Patala to slay the demon Mahiravana.

We can observe that these two incidents point to Central America as the location of Pathala. First, the flag of Mexico reflects the indigenous Aztec culture, and shows the image of an eagle carrying a serpent, concurrent with the description in Vedic literature. Second, in Honduras, there is the mysterious culture of worshipping the monkey God by name Wilka Huemana with artefacts seen today predominantly in the ruins of Copan.

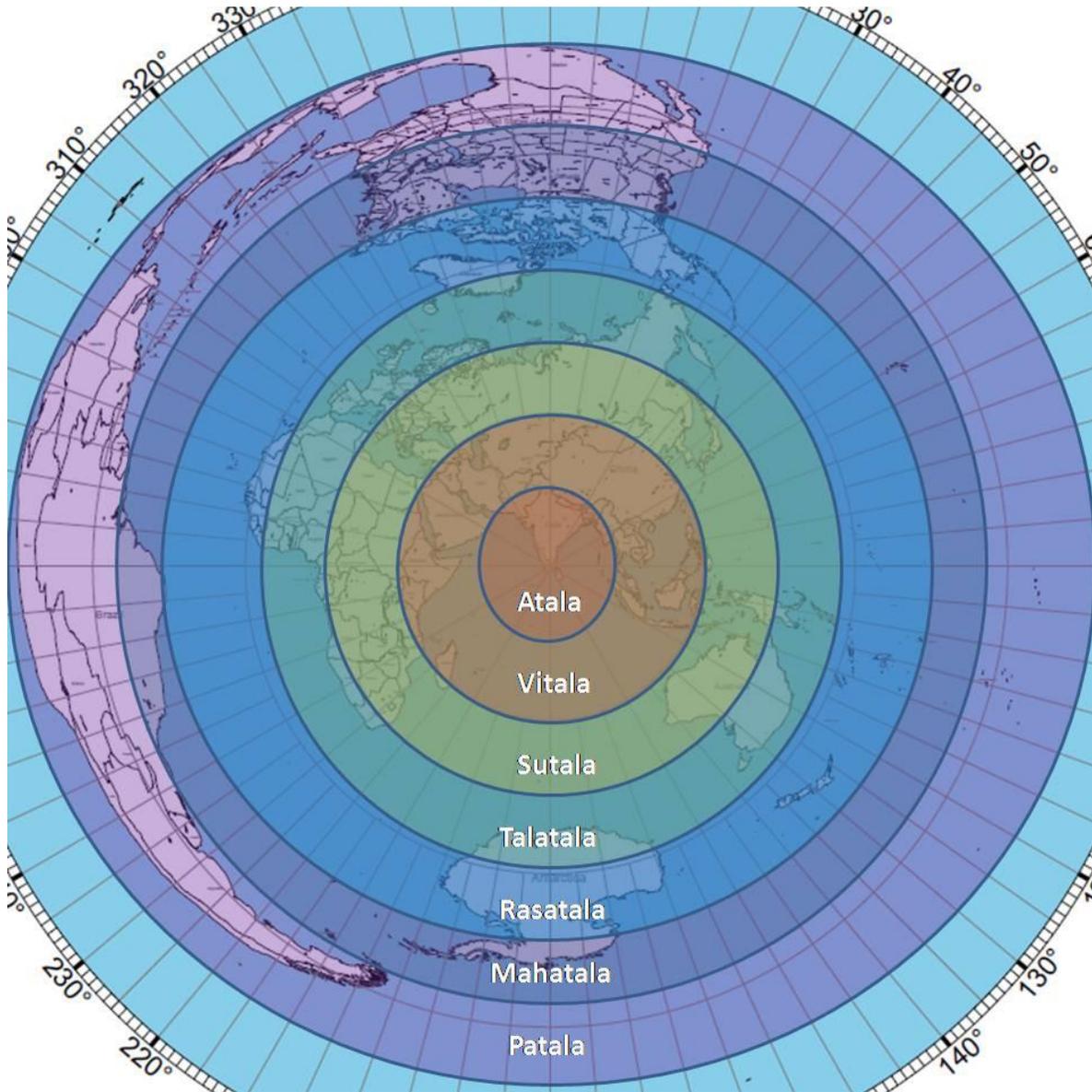


Understanding that Central America is Patala, we can map the other Adhara Lokas, keeping in mind that Patala is the lowest of the 7. To do this, we visualize a globe such that Latin America is its lowest point. Interestingly, we observe that this positioning puts India and the submerged Kumarikandam regions at the top of the globe. This coincides with Periyava's statement that the first Manu lived in Madurai.

Thus, the 7 Lokas from Atala to Patala as highest to lowest is a reference only to the geographical context. Qualitatively, the 7 Lokas are equally worse, each having its own vice and

negativity.

One can understand the 7 Lokas by observing the Earth as an Azimuthal projection, centering on Madurai, location of the first Manu. The 7 Lokas can then be mapped as concentric rings from the centre. The outermost ring is the geographically lowest Patala, and sure enough, comprises Central America as already seen.



Vedic literature mentions unique characteristics to each of the regions, as follows. Each region in the world houses both good and bad, and the 7 Lokas are descriptors only to the most dominant vice in each region. The 48 Divine manifestations were tailored to guide mankind out of these vices in their respective regions.

Patala: Abode of destructiveness, revenge, murder for the sake of murder, torture, hatred expressed by harming the properties, minds, emotions and bodies of others. Malice reigns supreme. Reason seldom reaches this state of mind. True to the description, we can find that 5 of the 6 top cities by murder rate are in Patala region - 4 in Mexico, and 1 in Venezuela.

Manifestations here focus on the creative aspect of the Divine, so as to appreciate the value of life.

Mahatala: Realm of the conscienceless, or inner blindness to the effect of one's actions, of negativity and deep depression. Those living steal freely, taking what they justify as theirs anyway, feeling that "the world owes them a living." Northern parts of US are seen here and true enough, the US is one of the top depressed countries. Hidden behind the screen of heightened patriotism is indeed the justified feeling mentioned above, resulting in controversial military involvements in Syria, Libya, Iraq, Afghanistan etc.

Manifestations show man ultimately as a property of nature, not the other way round, and to have consideration for fellow humans, plants and animals.

Rasatala: Home of the animal nature. Unmitigated selfishness prevails, of seeing to the well-being of "number one" first. The suffering of others is of no concern. Jealousy, anger and fear are intense, even high, states of consciousness. This region is mostly sea, except for Western Africa, New Zealand, parts of Canada and Alaska.

Manifestations here are aspects governing nature and animism.

Talatala: Prolonged confused thinking dominates here, giving rise to instinctive willfulness: to get rather than give, to push others around and pursue materialistic advancement over all else. Greed and deceit prevail in this dog-eat-dog state of mind. In this world resides western and northern Europe, comprising France, Spain and England, whose colonization of the planet for their own materialistic dominance is but an understatement. The slave trade and feuds of pre-colonial African kingdoms is no less an attribute as well. So too was vile cannibalism practiced in New Guinea and parts of Polynesia.

Manifestations here assert divine dominance over man, and emphasize human-nature harmony.

Sutala: Governs jealousy, wanting what one can't have. Jealousy is a feeling of inadequacy, inferiority and helplessness. People in sutala covet everything, often deny the existence of God and are contentiously combative. Sutala contains parts of China, Czech, Estonia and Sweden, all among the top countries in atheism.

Manifestations here embody Divine in tangible, visible forms, most often the sun and the sky.

Vitala: Here anger predominates, and burning resentment. Anger comes from despair, confusion, frustration or lack of understanding. People are always wrathful, mad at the world, even angry at God. It is no surprise that the most violence-laden regions of Earth are in Vitala region - The Arabian Peninsula with Syria, and the Horn of Africa with Somalia, Pakistan and Afghanistan. History has seen the brutality of Genghis Khan in central Asia, as well as today's heavy crackdown and patrolling by China.

Manifestations here pertain to God promoting peace, love and brotherhood.

Atala: Governs the state of mind called fear, which is truly a bottomless abyss. Someone in this consciousness fears death, fears life, even fears God and other people. This center is also the home of lust and promiscuity. The region mostly includes India and surrounding nations, such as Bangladesh. The unique combination of fear and lust can be seen reflected in India, on the one hand its history of successive invasions and foreign rule, and on the other hand, its race to out-populate China in the near future.

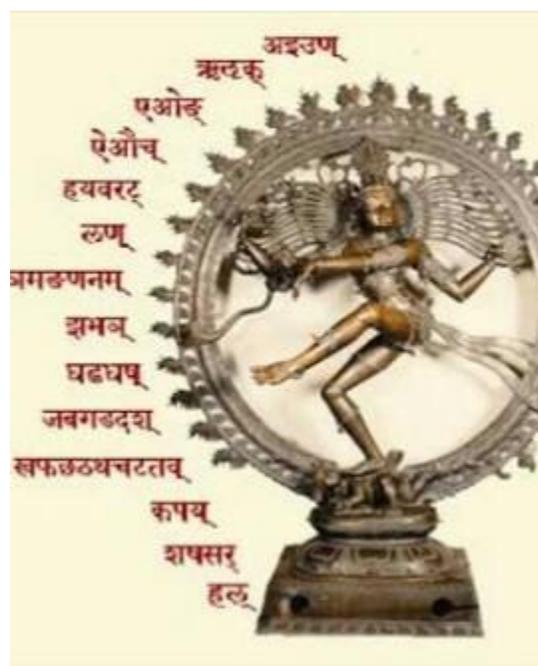
Manifestations are seen to grant Abhaya or fearlessness, apart from inducing Bhakthi so as to channel one's love and emotions in a positive way.

Thus the dominant vices of various regions have been highlighted in the context of the 7 Adhara Lokas. Later Puranic references generalize attributing the Lokas to the vices themselves rather than to physical regions.

The 7 Upper Lokas from Sathya to Bhu, and the 7 Lower Lokas from Atala to PAtala, together form the 14 Worlds or Bhuvanas of vedic Worldview, and as can be seen, they explain the complete cycle of wisdom in all its aspects, and hence, all of creation.

The connection between the Upper and Lower 7 worlds is at the Aksharas. While all of the universe created leading to man, he was endowed with the Aksharas, powerful tools of sound energy. Only after this did humans migrate, inhabiting every region of the planet, losing touch with Vedas and developing vices.

The pattern of migration is not chance or random, but divinely ordained. Particularly, the Maheshwara Sutras are given by Amma in the form of Shiva. They contain the Aksharas grouped into 14 sets, and these are the origins of the 14 Manvantaras. Each Manvantara grows in variety add per the Sutra Aksharas and to drive away the vices, Amma manifests in various regions of each Manvantara, bringing to life the Akshara concepts embodies therein. Fused Aksharas such as those belonging to 3rd and 7th Avaranas, as well as Bijaksharas can also be classified into Manvantaras using their starting Aksharas.



The endings of each of the 14 Sutras are dummy Aksharas used as code to write grammar rules, and can be neglected. The following table lists the correspondence between Aksharas, Manvantaras, Lokas and manifestations. While simple and fused phonemes are listed, Bijaksharas Shrim and Om map to Haplogroups 13 and 1 respectively.

Manvantara	Akshara	Loka	Manifestation
1(Y)	A	Atala	Prithvi
	Aa	Atala	Jala
	I	Atala	Agni
	Ee	Atala	Vayu
	U	Atala	Akasha
	Oo	Atala	Surya
	Ah+p (f)	Atala	Vishnu
2 (A,B)	R	Sutala	Nlari
	Rr	Sutala	Tore
	L	Sutala	Amun Ankh
	LI	Talatala	Nsi
3 (C)	E	Talatala	Wuagyl
	O	Patala	Dzil Diyini
	Am	Sutala	Tengri
4 (D)	Ai	Atala	Kunzang Gyalwa
	Au	Sutala	Mitsu Tomoe
	Ah	Atala	Pulga
5 (E)	Ya	Rasatala	Nommo
	Va	Sutala	Tannit
	Ra	Vitala	Babakoto
	Lateral C	Sutala	Tore

	Short O	Talatala	Gye Nyame
6 (F)	La	Vitala	Inanna Ishtar
7 (H)	Nja	Atala	Skanda
	Ma	Atala	Shakti
	Nga	Sutala	Devla
	Retroflex Na	Talatala	Gorgon
	Dental Na	Atala	Adinatha
	Short E	Atala	Hanuman
	Na	Atala	Bhairava
8 (G)	Jha	Sutala	Xucau
	Bha	Vitala	Dela Malx
9 (I)	Gha	Talatala	Danu
	Retro Dha	Vitala	Ahura Mazda
	Dha	Sutala	Dzabog
	Alveolar C	Talatala	Perun
	Dental C	Talatala	Mari
10 (J)	Ja	Vitala	Allah
	Ba	Vitala	Yahweh
	Ga	Sutala	Kouros Apollo
	Da	Sutala	Sun of Arinna
	Dental Da	Vitala	Mithra
	Lla	Vitala	Waaq
	Za	Vitala	Anesa
11 (KLMST)	Kha	Talatala	Roman Path
	Pha	Vitala	Boyo
	Cha	Talatala	Afekan
	Tha	Vitala	Thorani
	Dental Tha	Patala	Inti
	Ca	Vitala	Melek Taus
	Ta	Sutala	Geno
	Dental Ta	Vitala	Koyosh
	Palatal C	Vitala	Apo Na
12 (N)	Ka	Sutala	Azysyt
	Pa	Sutala	Konvasara
	Guttural Kh	Sutala	Num
	Labial C	Sutala	Saule
13 (OPR)	Sha	Vitala	Babakoto
	Shha	Rasatala	Atua
	Sa	Sutala	Yin Yang
	Tsa	Vitala	Saub
14 (Q)	Ksha	Patala	Tupa
	Ha	Patala	Atabey
	Zha	Rasatala	Inukshuq
	Trill Ra	Mahatala	Gitchi Manitou
	Welsh Ll	Patala	Ququmatz

History and Vedic Wisdom

No region in the entire planet has been as misunderstood and misrepresented historically than the Indian Subcontinent. Implications of attempting to understand it's history has gone as far as consequences of the Aryan Race theory in the context of Nazis and atheist Dravidian Tamils. It is high time one puts a full stop to all this by knowing truly the history of India.

On the basis of research several conclusions have been put forward: an Aryan invasion from central Asia or Europe, an indigenous origin to the Vedas, a Dravidian yet undecipherable Indus Valley Civilization. All these are correct in their own way within their own scope. The problem is not research accuracy, but narrow perspectives. Furthermore certain glaring and questionable assumptions are often made. For example, how can one validate that human migrations inferred through DNA haplogroups are the only sources by which languages spread and evolve?

In this article I shall briefly give an overview narrative of Indian Prehistory, on the basis of collating multiple sources. Some of this narrative stands proven by existing archaeological and linguistic and genetic evidences, which are strung together by logical reasoning. For those with need of more concrete proof, time shall certainly answer. For those whose minds have been so corrupted and brainwashed with dogmas from the Holy See or Aryan Dravidian prejudices, God alone shall answer. For those with honest open minds, yearning to understand the truth and for unbiased researchers trying to put together pieces, this article shall surely be of value, and that alone is the scope of this article. References will be given as website links whenever necessary.

We start with a bold statement: Vedic culture, Vedic religion and Vedic language is the ultimate origin of all civilization in the world.

Vedic language is the origin of all languages in the world, including Sanskrit, Tamil and Hebrew. This was a statement made by Mahaperiyava Kanchi Shankaracharya to a group of researchers on the subject. He also went on to prove how Vedic phonemes or Aksharas transformed and mutated into multiple forms worldwide. Another statement of Mahaperiyava records that the Adam and Eve of Genesis is a reproduction of the Vedic narrative of Atma and Jiva, even the names being derived therein.

<https://www.geni.com/discussions/112963>

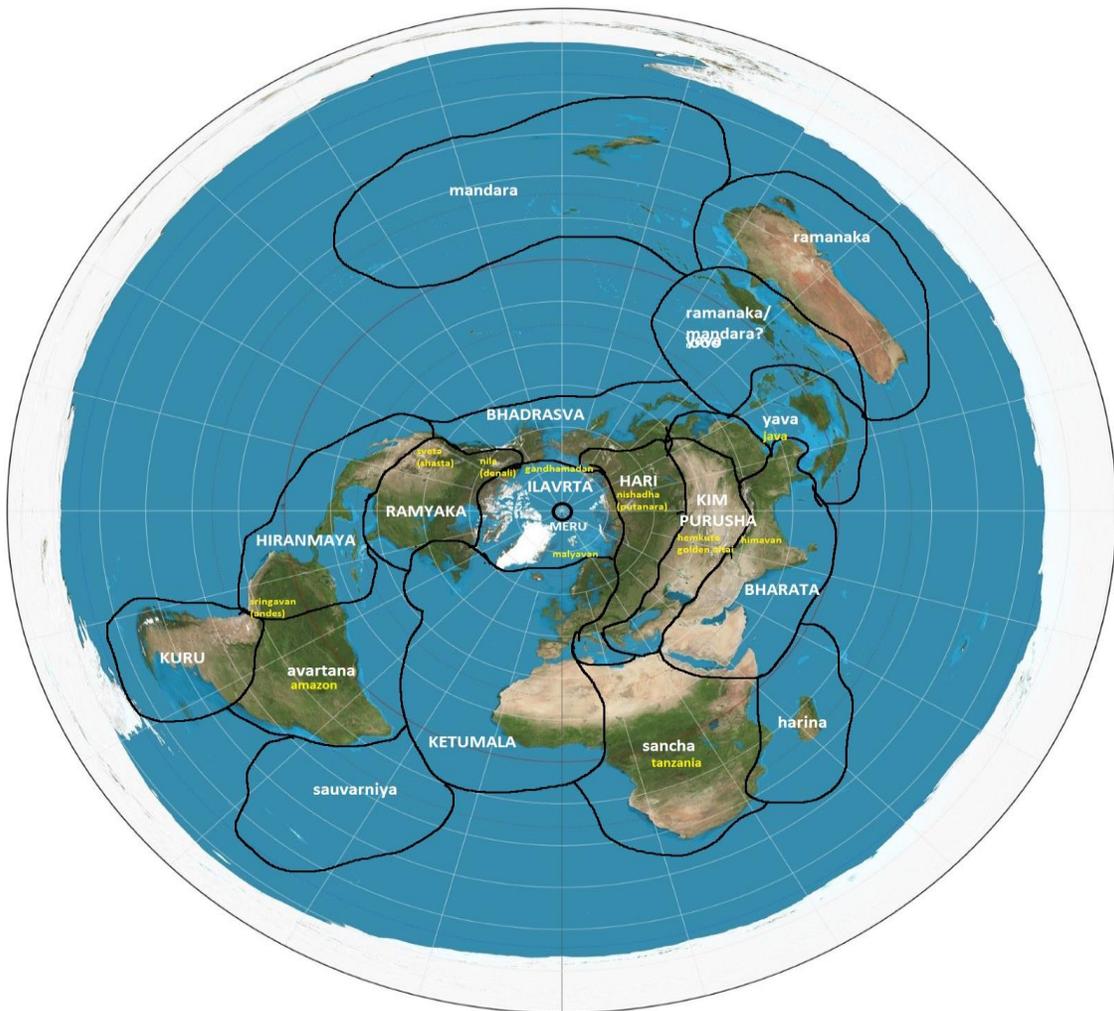
<http://chandrashekharendrasaraswati.blogspot.com/2007/05/mulamagiya-vedam.html?m=1>

We start with this foundation - the universality of Vedic language. It was a global culture. One can see names of seers and Rishis globally, some of them pointed out by Periyava Himself. California as Kapila Aranya, Baikal from Vaikhanasa, Narodny from Narada, Balkash from Valakhilya, Phrygian from Bhrigu, Kashmir-Kashgar-Caspian from Kashyapa, Adriatic by Atri, Palestine by Pulastya, and so on.

<http://www.srikamakshi.org/2018/01/23/kapilaranya-kshethram-california-and-sri-sri-sri-mahaperiyava/>

Being global, Vedic geography reflects this. Mahaperiyava mentioned that the Vedas list 32 regions making up the world, and which Rishi lived in those regions as well as how Vedic Aksharas changed in these parts. Also Vedic geography describes through nine Varshas or continents, the entire geography all the way from India to South America, with the center at North Pole, called Meru. I have attempted a mapping to present day regions, and provide it here. As it is unrelated to the main topic directly, I shall answer any clarifications regarding this by email.

<http://www.hitxp.com/articles/history/ancient-india-geography-jambudvipa-bharathavarsha-bharatha-khanda/>



One might ask how a global culture sustained, and what was the communication between each other. The answer is that the Rishis had advanced Yogic techniques to communicate with each other, exchange thoughts and Revelations etc, in a manner similar to what one can see even today among Himalayan Yogis. In fact such sharing of revealed information and thoughts over

thousands of years resulted in a humongous corpus of information, which we now call the Vedas.

As this global Vedic language evolved throughout the world, transformations in phonemes occurred manifesting as new languages which further expanded and developed to language families we see today worldwide. What was the consequence?

As a digression, let's take an example- Malayalam is the newest of South Indian languages, and for the most part of history, Kerala was simply Tamil speaking. But when Tamil evolved sufficiently in the region to give a distinct Malayalam identity, Tamil works like Tholkappiyam, Thirukural etc were not patronized as before, since Tamil was a different, foreign language now. In a similar context, when Vedic language transformed into regional languages, new identities were created in the minds of people, and the treasure of Vedic information was not patronized, and was eventually lost within these regions. The Subcontinent, may or may not be a lucky coincidence, was exception to this trend. How?

Evolved from the Vedic language was Tamil that saw expansionist growth, encompassing all of India in due course, leaving only hilly pockets of land speaking the other five languages. The pan Indian prevalence of Dravidian and its homogeneity has already been proved by genetics and also iterated by Periyava.

<https://timesofindia.indiatimes.com/india/Aryan-Dravidian-divide-a-myth-Study/articleshow/5053274.cms>
<https://tamilandvedas.com/2013/07/17/who-are-dravidians/>

The history of Tamil is traditionally traced back to Agastya. The Ramayana describes the sage living among the banks of Godavari, in Deccan areas, whereas Mahabharata describes the sage with Lopamudra which is the legendary origin of Kaveri river, and stories of Agastya swallowing the sea. Thus one can see a southward trend in Tamil development from Ramayana to Mahabharata times. This is only reinforced by mentions of the triumvirate - Chera, Chozha and Pandya kingdoms in the Mahabharata. <http://en.wikipedia.org/wiki/Agastya>

As the languages grew out of the Vedic culture, just like in any other part of the world, people started losing identity and connection with Vedas and their information. However, the sages present in this time were very alert and aware of this fact, since they were regularly reciting the Vedas which had within them error correction against transformations and mispronunciations using rules of Shiksha and Chandas. Consequently, sages noted the growing difference between Vedic recitations and the spoken languages, and knew that this trend would result in losing the Vedas altogether.

For this reason, they distilled the Vedic language and created what would be known as Sanskrit. As the very name Krit indicated, it is a well created, synthesized language, taking vocabulary from the Vedic language. This is why Mahaperiyava said that Sanskrit too was a derivative of Vedic language.

<https://tamilandvedas.com/tag/paramacharya-on-sanskrit/>

As a simplification of the Vedic language, Sanskrit eschewed some of the phonemes. Periyava proves that the sounds seen sometimes as unique to the Tamil language, such as Zha, Ayutha Ezhuthu etc were present in the Vedic language. It's just that Sanskrit eschewed these sounds as separate alphabets, but considered them variants of other alphabets. Ayutha Ezhuthu was thus the Visarga Ah, while Zha is seen as phonetic variant of retroflex Da.

<http://www.kamakoti.org/hindudharma/part6/chap6.htm>

While passed on from teacher to disciples orally, it was only much later, post-Vedic age of Mahabharata that the Vedas were compiled and written, by Veda Vyasa using the created Sanskrit language. Relying on oral transmission, Vedas had developed a foolproof method of averting errors within the tradition of recitation, apart from having as integral parts of Vedangas, the science of Shiksha, Chandas and Niruktha. This is the reason Vedic phonemes, words and content were preserved without change from the era of global Rishis all the way to Veda Vyasa till even the present day.

To summarize, we have two layers of scenarios in Indian Prehistory this far:

- A. The Vedic age saw the Vedic language, called Chandas by Panini - it was a global language, global culture worldwide, including India too.
- B. The Puranic age languages, headed by Tamil spoken throughout India, while Rishis created Sanskrit to preserve Vedic wisdom.

Apart from the Brahmins who were entrusted with reciting Vedas, Sanskrit was also used as a link language. Kings who learnt from sages in Gurukulas learnt Sanskrit. This was the lingua franca used between regions and cultures in military and trade contexts. This is the scenario corresponding to the Ramayana age. There's a description of Hanuman hesitating on linguistic lines before communicating with Seetha in Ashoka Vana of Lanka, which shows the language heterogeneity.

<https://www.tamilbrahmins.com/showthread.php?t=10746>

In this same duration of time, other regional cultures too started developing from the Vedic culture, such as Nilo Saharan, Pama Nyungan etc.

<https://www.quora.com/When-and-where-was-the-Proto-Nilo-Saharan-language-spoken>

From the narration this far, one understands that Tamil was a direct daughter of Vedic language along with many other proto languages of every language family in the world. However, unlike every other region in the world, it was only here that the Vedas were preserved, and recited

throughout the period of evolution of Tamil. This meant that even as thousands of years passed, the divergence from Vedic language was kept minimal.

This justifies the statement that Tamil is the oldest continually spoken language of mankind, and is the closest natural language one can get to the proto human ie Vedic language. The same can't be said of Sanskrit, since it is a synthesized language and not naturally evolved. Consequently, researchers throughout history have attempted to understand possible origins of various world languages as Tamil, which must be subsequently concluded as Vedic, as already proven by Periyava.

1. David McAlphin outlines the relationship between Tamil and the ancient Iranian language of Elamite.
2. Dr. Alfred Toth explores the connections between Tamil, and various other agglutinative languages worldwide, including more than 30 languages such as Hungarian, Sumerian, Maori, Malay, Japanese, Thai, Aymara, Caucasian Hebrew, Uralic, Chukchi and many others.
3. Victor details out the various linguistic, archaeological and mythological connections between Tamil and the various civilizations of West Asia, in particular the Babylonians, the Sumerians and the Semites, including the Egyptians. He has also discussed elaborately on the connections between Hebrew and Tamil, and the presence of Hebrew root-words in Tamil.
4. Susumu Ohnu has discussed the relationship between Japanese and Tamil, and Prof. Kambe also suggested such a connection.
5. Andrew Butcher mentions of a possible connection of Tamil to the Australian aboriginal languages and other languages like Chukchi. He says — Perhaps most similar to Australian languages are the Dravidian languages of southern India. Tamil, for example, has five places of articulation in a single series of stops, paralleled by a series of nasals, and no fricatives (thus approaching the Australian proportion of sonorants to obstruents of 70% to 30%). Approaching the question from the opposite direction: according to the latest WHO data on the prevalence of chronic otitis media (Acuin 2004:14ff), Aboriginal Australians have the highest prevalence in the world – 10-54%, according to Coates & al (2002), up to 36% with perforations of the eardrum. They are followed – at some distance – by the Tamil of southern India (7.8%, down from previous estimates of 16-34%) to develop.
6. An article of arutkural details the cultural and linguistic relationship between Tamil and Africans.
7. An article by Gene Matlock, suggests the connections between Tamil, Turkic and the Mayan languages.

Elamite and Dravidian: Further Evidence of Relationshipll, David McAlphin, Current Anthropology, Volume 16, No 1, March 1975.

Are all agglutinative languages related to one another?ll , PROF. DR. ALFRÉD TÓTH, Mikes International, The Hague, Holland, 2007.

"The Babylonian Thamizh", Ma. So Victor, Naller Publications, 2007.
The Genealogy of the Japanese Language – Tamil and Japanesell, Susumu Ohnu,
<http://arutkural.tripod.com/tolcampus/jap-tamil.htm>
http://articles.timesofindia.indiatimes.com/2011-01-18/chennai/28356882_1_kamaprofessor-gakushuin-university
Australian aboriginal languages: consonant-salient phonologies and the place-of articulation imperative, Butcher, Andrew, ISBN – 9781841694375, Pub 2007.
<http://arutkural.tripod.com/tolcampus/drav-african.htm>
<http://viewzone2.com/ancientturksx.html>

The Vedic heritage of Tamil and Tamil speaking areas is unparalleled. Mahaperiyava quoted the Bhagavatham that Manu, the primordial progenitor of the Vedas, lived along the banks of Vaigai near Madurai.

தொன்றுதொட்டு வேத நெறியின் வீடாக இருந்திருப்பது தமிழகமே. மனித குலத்தின் முதல்வராக மனு, வைகை அருகேயுள்ள கிருதமாலைக் கரையில் வசித்ததாகவே பாகவதம் கூறுகிறது. வேத தர்மம் இங்கேதான் பிறந்தது.

In fact even beyond Tamilnadu there was the Kumarikandam or Lemuria, a now submerged piece of land, also mentioned by Periyava. He says there were Tamil speaking three eyed Rudras living there. The three eyes refers to activation of the Ajna Chakra, the seat of insight and spiritual wisdom as per Vedic Yoga science. Kumarikandam with detailed geography and history has always been mentioned and revered in Tamil literature. However, the very fact that India and Lanka weren't connected and that Rama had to build a bridge means that Kumarikandam was submerged even before the times of Ramayana.

<https://mahaperiyavaa.blog/2013/04/16/rudra-mahimai-english-translation/>
<https://www.thehindu.com/news/national/tamil-nadu/Lemuria-and-Kumari-Kandam/article16265441.ece>

Kalittokai-104

Maduraikkandam, verses 17-22

"Ancient World", North Mahalingam. International Society for Investigation of Ancient Civilization. 101 Mount Road, Guindy, Madras, India 50032.

Before proceeding further it is imperative to note one crucial consequence of the discussion so far. Languages did not evolve hand in hand with the earliest human migrations out of Africa. In fact the discovery of skeletons in Europe might put the Out of Africa Theory itself in jeopardy.

K. TallBear, Narratives of Race and Indigeneity in the Genographic Project, Journal of Law, Medicine and Ethics, 35, 2007.

<https://www.theguardian.com/science/2017/jun/07/oldest-homo-sapiens-bones-ever-found-shake-foundations-of-the-human-story>

Sarva Vidya - Sai Venkatesh

<https://www.telegraph.co.uk/science/2017/05/22/europe-birthplace-mankind-not-africa-scientists-find/>

Either way, what was the Vedic language, was a sophisticated development including advanced perceptions of non duality and liberation, and advanced Yogic techniques involving telepathy. All this took thousands of years to develop. All the while there were contributions from various Rishis across the globe. It took several millennia of settlement after migration to reach this level of human thinking. So too the evolving of different distinct languages from the Vedic language was again a millennia long process.

India from ancient history was always well known for its resource richness, and was always a hotspot for trade. However, this would largely be dictated by India's location and borders. Throughout the north and East were the impenetrable Himalayas. Most of the south was a peninsula, bordered by seas, and the Indian Ocean which was known for its turbulence. This only left the northwest, which was plain land and the Indus river, and this was the gateway for trade, with regions in central Asia and Europe.

These names are mentioned in Mahabharata - Afghanistan and Kandahar as Gandhara, Persia as Pahlava, Baluchistan as Rishika, Bactria as Bahlika, Xinjiang and Xion as Huna, Saka as Scythia, and Yavana as Ionian Greece and Anatolia. The last one in particular deserves mention, where the King Kalayavana was tricked by Krishna to bring burnt to death by King Muchukunda.

<https://en.m.wikipedia.org/wiki/Mleccha>

Since Sanskrit was the communication language, and since there were frequent interactions between India and these regions, there was a prevalence of Sanskrit literacy among these regions.

But side by side, the Vedic language was also evolving into the regional languages in those regions. Thus, we see Sanskrit as a key source of influence in this development of languages. As a result, we see the languages such as Armenian, Persian, Tocharian, Greek and Anatolian, all grouped linguistically as the Indo European languages, because of the similarities with Sanskrit.

https://en.m.wikipedia.org/wiki/Indo-European_languages

Thus, we get the picture of the state of affairs in the Mahabharata times - India as a compilation of kingdoms, mostly Dravidian with pockets of other languages, with Sanskrit as lingua franca, scripturally, militarily and commercially, and surrounding regions to the northwest developing their own Vedic derived languages, but with similarities to Sanskrit.

Of course, there are overwhelming evidences beings doubt for the historicity of Ramayana and Mahabharata, from Artefacts in the submerged Dwaraka, to melted walls in Kurukshetra due to

nuclear weaponry. Going by astronomical sources, one could date the war to around 3137BC, and this has been discussed by researchers such as Chandler and Kak.

Origin of Vedic Civilization by Kenneth Chandler, (<http://sanskrit.safire.com/pdf/ORIGINS.PDF>)
<http://www.ece.lsu.edu/kak/MahabharataII.pdf>

K. Chandler, Modern science and Vedic science: An introduction, Consciousness-Based Education and Literature, 491, 1987.

H. Jacobi, On the date of the Rig Veda, Indian antiquary, 23, 1894.

The next stage in history is the Indus Valley Civilization, whose artefacts are available starting around 3300BC. So this civilization either overlapped or succeeded the Kuru culture ie Mahabharata.

https://en.m.wikipedia.org/wiki/Indus_Valley_Civilisation

There are stark differences between the Kuru and Indus cultures. First, Kuru, descending from Vedic culture, abided in preferences to minimal materialism. Construction was made often using mud, wood and straw, which would easily disintegrate into nature. Even weapons of war involved more usage of energy vibration rather than material resources, for example Ashvathama invoking the Brahmastra using a blade of grass.

However, one sees copious usage of stone and metal in the Indus culture. Thus this is a post Mahabharata offshoot culture characterised by more inclination towards materialism, which was also seen in other cultures in the same time period, such as Sumeria.

But the most noteworthy feature of the Indus culture would have to be the Indus script used in seals, and has been a puzzle to decipher until today.

But before we examine that, we need to reflect on writing in the Mahabharata era. Of course the Vedas were by and large oral transmissions but Veda Vyasa penned them in writing using the aid of Lord Ganesha. Additionally, various Tantric worship systems were in vogue, which would have necessitated Yantras encribed with the Aksharas. There are also descriptions of kings sending messages to other kingdoms through scrolls. Krishna Himself sent a scroll message through Uddhava to the Gopikas of Vrindavan. Thus, it would be wrong to say that writing was not discovered or used in the Mahabharata era.

The script though, was Brahmi, the ancestor of all Indic scripts, as Periyava confirms. I had earlier written an article which depicts results of a small scale cymatic experiment, proving a remarkable match between the sounds of Aksharas and corresponding Brahmi alphabet patterns. This would make Brahmi impossible to derive from any earlier script except the sounds of the Aksharas themselves. The excerpt containing images from the cymatic experiment are given at the end of this article.

But what we see in the Indus script is vastly different. There are over 500 symbols, looking like a pictographic writing system. Of course within this are the 50 symbols which make up the Brahmi alphabet. I had earlier written a paper saying how Indus symbols included the Brahmi as a subset, and these accounted for around 20 percent of all discovered samples.

<http://vixra.org/abs/1507.0212>

If an excellent writing system such as Brahmi was in vogue, then why was the Indus script necessary? What language did the people speak?

The answers will be revealed if we look closely at the Indus Civilization. First, they were contemporary or successive to the Kuru culture. Thus, they mostly spoke Tamil along with Sanskrit as a lingua franca.

But it is clearly seen that the Indus people traded with Sumeria, Mesopotamia and possibly Egypt - a feature we particularly do not see among the people of Mahabharata. We do not know what prompted this relation - Whether it was adventurous land and sea exploration, or climatic changes, or thirst for more money, or a more liberal outlook towards people who were called "Mlecchas".

The areas of West Asia such as Sumeria started civilizations as early as 5000 or 4000BC, and by the time the Indus Valley developed, these were flourishing with their own languages derived from Vedic. So the question is, in what language did the Indus people communicate to them?

Certainly they couldn't use Sanskrit, since west Asia wasn't exposed to Sanskrit and the trade practices, unlike Greece or central Asia. It is this reason that prompted and fueled the development of Indus Script- a pictographic sign language of sorts used for trade with these regions. Of course, Brahmi Aksharas were incorporated whenever names would be written. And since Sanskrit was close to useless in the context of West Asian trade, the pictographic symbols communicated the Dravidian language Tamil, just as many researchers such as Parpola had concluded.

I. Mahadevan, The Indus Script: Texts, Concordance and Tables, Archaeological Survey of India, 1977.

I. Mahadevan, Dravidian Models of Decipherment of the Indus Script: a case study, Tamil Civilizations, 4, 1986.

A. Parpola, Deciphering the Indus Script, Cambridge, UK, 1994.

S. C. Kak, A Frequency Analysis of the Indus Script, Vivekananda Kendra Patrika, 40, 2011.

S. C. Kak, Indus and Brahmi - Further Connections, Cryptologia, 14, 1990.

R. P. N. Rao, N. Yadav, M. N. Vahia, H. Joglekar, R. Adhikari, I. Mahadevan, Entropic Evidence for Linguistic Structure in the Indus Script, Science, 324, 2009.

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From various studies, one understands unfavorable climatic changes occurred in the region, and this spelt doom to the Indus Valley Civilization. Once in its decline, the area became ripe for military conquest, especially being the gateway to the resource rich India. This attracted waves of invasions from Central Asia and Europe, which has been recorded very well through Y-DNA Haplogroups. Invasions continued over centuries, even until the times of Alexander.

<https://www.thehindu.com/sci-tech/science/how-genetics-is-settling-the-aryan-migration-debate/article19090301.ece>

The invaders spoke Indo European languages, and a lot of intermixing through marriages happened. The invasions centered mostly around north India. In these regions, the usage of Tamil declined seeing how the European languages were closer to Sanskrit, and the latter alone was spoken in North India. Soon though, by the time of Gautama Buddha, this Sanskrit would degrade into a number of regional vernaculars such as Prakrit and Pali.

It is unfortunate that this last section of European invasions alone has been highlighted by Europeans and labeled as the complete picture of Indian history, and the neglect of all the earlier layers of history, each with their own evidences, is a blunder beyond excuse.

Alphabets and Geometry

Most of the alphabet systems used in the world as of today can be traced to either of two scripts - the Brahmi script of India, and the Phoenician script of the Middle East. Naturally, it has always been a topic of interest to researchers to see if the two may be related to each other in some manner.

Brahmi script in its exclusivity has been traced to Ashokan age edicts from 5th century BC. On this basis, among many theories proposed for the origin of Brahmi, was the hypothesis by Buhler, Falk and others, that the Phoenician-Aramaic alphabet might have been brought into India as Brahmi. The evidence here is similarity with in letters between Brahmi and Aramaic scripts. [See https://en.wikipedia.org/wiki/Brahmi_script with cited references]

However, writing has been in India earlier than that, most notably the Indus script. Among a collection of more than 500 characters in this script, the 50 Brahmi letters can clearly be spotted. This is the theory by Marshall, Kak, Feuerstein, Frawley and others, that Brahmi is derived from the Indus Script.

I had earlier proved this theory, by publishing the results of feature wise comparison between the Brahmi, Indus and Aramaic scripts, and the Brahmi were found to be significantly closer to the Indus, rather than the Aramaic alphabet. Brahmi included in or derived from Indus makes one point clear: it is older than the Aramaic alphabet, since Indus script is dated to 3500BC, whereas even the oldest source of western writing ie, the Egyptian Hieroglyphics only go back as far as 3200BC.

If this is the case, how does one explain the similarity between Brahmi and Aramaic? It surely isn't coincidence, and this article explores the connection, building upon few facts:

1. Vedic language is the origin of all languages in the world, including Sanskrit, Tamil and Hebrew. This was a statement made by Mahaperiyava Kanchi Shankaracharya to a group of researchers on the subject. He also went on to prove how Vedic phonemes or Aksharas transformed and mutated into multiple forms worldwide. Another statement of Mahaperiyava records that the Adam and Eve of Genesis is a reproduction of the Vedic narrative of Atma and Jiva, even the names being derived therein.
2. In the subcontinent, as six languages, including Tamil grew out of the Vedic culture, people started losing identity and connection with Vedas and their information. However, the sages present in this time were very alert and aware of this fact, since they were regularly reciting the Vedas which had within them error correction against transformations and mispronunciations using rules of Shiksha and Chandas. Consequently, sages noted the growing difference between Vedic recitations and the 6 spoken languages, and knew that this trend would result in losing the Vedas altogether. For this reason, they distilled the Vedic language and created what would be known as Sanskrit. As the very name Krit indicated, it is a well created, synthesized language,

taking vocabulary from the Vedic language. This is why Mahaperiyava said that Sanskrit too was a derivative of Vedic language.

3. Apart from the Brahmins who were entrusted with reciting Vedas, Sanskrit was also used as a link language. Kings who learnt from sages in Gurukulas learnt Sanskrit. This was the lingua franca used between regions and cultures in military and trade contexts.
4. India from ancient history was always well known for its resource richness, and was always a hotspot for trade. However, this would largely be dictated by India's location and borders. Throughout the north and East were the impenetrable Himalayas. Most of the south was a peninsula, bordered by seas, and the Indian Ocean which was known for its turbulence. This only left the northwest, which was plain land and the Indus river, and this was the gateway for trade, with regions in central Asia and Europe. These names are mentioned in Mahabharata - Afghanistan and Kandahar as Gandhara, Persia as Pahlava, Baluchistan as Rishika, Bactria as Bahlika, Xinjiang and Xion as Huna, Saka as Scythia, and Yavana as Ionian Greece and Anatolia.
5. Since Sanskrit was the communication language, and since there were frequent interactions between India and these regions, there was a prevalence of Sanskrit literacy among these regions. But side by side, the Vedic language was also evolving into the regional languages in those regions. Thus, we see Sanskrit as a key source of influence in this development of languages. As a result, we see the languages such as Armenian, Persian, Tocharian, Greek and Anatolian, all grouped linguistically as the Indo European languages, because of the similarities with Sanskrit.
6. The next stage in history is the Indus Valley Civilization, whose artefacts are available starting around 3300BC. There are stark differences between the Kuru and Indus cultures. First, Kuru, descending from Vedic culture, abided in preferences to minimal materialism. Construction was made often using mud, wood and straw, which would easily disintegrate into nature. Even weapons of war involved more usage of energy vibration rather than material resources, for example Ashvathama invoking the Brahmastra using a blade of grass. However, one sees copious usage of stone and metal in the Indus culture. Thus this is a post Mahabharata offshoot culture characterised by more inclination towards materialism, which was also seen in other cultures in the same time period, such as Sumeria.
7. The Indus people were contemporary or successive to the Kuru culture. Thus, they mostly spoke Tamil along with Sanskrit as a lingua franca. But it is clearly seen that the Indus people traded with Sumeria, Mesopotamia and possibly Egypt - a feature we particularly do not see among the people of Mahabharata. We do not know what prompted this relation - Whether it was adventurous land and sea exploration, or climatic changes, or thirst for more money, or a more liberal outlook towards people who were called "Mlecchas".
8. The areas of West Asia such as Sumeria started civilizations as early as 5000 or 4000BC, and by the time the Indus Valley developed, these were flourishing with their own languages derived from Vedic. So the question is, in what language did the Indus people communicate to them? Certainly they couldn't use Sanskrit, since west Asia wasn't exposed to Sanskrit and the trade practices, unlike Greece or central Asia. It is this reason that prompted and fueled the development of Indus Script- a pictographic

sign language of sorts used for trade with these regions. Of course, Brahmi Aksharas were incorporated whenever names would be written. And since Sanskrit was close to useless in the context of West Asian trade, the pictographic symbols communicated the Dravidian language Tamil, just as many researchers such as Parpola had concluded.

9. From various studies, one understands unfavorable climatic changes occurred in the region, and this spelt doom to the Indus Valley Civilization. Once in its decline, the area became ripe for military conquest, especially being the gateway to the resource rich India. This attracted waves of invasions from Central Asia and Europe, which has been recorded very well through Y-DNA Haplogroups. Invasions continued over centuries, even until the times of Alexander. This section of history is well studied under the misnomer "Aryan Migration".

Later in this section are depicted results of a small scale cymatic experiment, proving a remarkable match between the sounds of Aksharas and corresponding Brahmi alphabet patterns. This would make Brahmi impossible to derive from any earlier script except the sounds of the Aksharas themselves.

We have already seen how 50 Aksharas had a fundamental connection to the Sri Yantra, in describing a functional map of the universe, and the concepts and meanings of each Akshara in this connection. This means that each of the 50 alphabets of Brahmi is laden with meaning, which is seen from the names of Akshara Devatas, as well as Avarana Devatas of Sri Yantra mapped to the Akshara. The related meanings can be seen in the very shapes of the Aksharas, which are in reality, the cymatic signatures made by the sounds themselves.

Thus, in summary, one understands that the Brahmi-Indus Script is older than any west Asian script, and that it has such depth in concept that it is not possible to derive Brahmi from anything but fundamental sound itself.

Then, how does one explain the connection between Brahmi and Aramaic-Phoenician alphabets that some researchers have shown? There is only one answer to this - the middle Eastern scripts have been derived from Brahmi.

Middle Eastern scripts have conventionally been traced to the Egyptian Hieroglyphics as their ultimate source, and one might wonder how to reconcile Brahmi with this. However, it isn't surprising, since the Indus Script was also a pictographic script, and much like the latter had the 50 Brahmi letters as its subset, the similar may be said of the Egyptian too.

There have been worldwide, writing systems evolved from pictograms, such as the Chinese, which exists to this day as pictographic, without any sort of phonetic alphabet. Why then, would the Egyptian writing system go contrary to such trend and transform to include phonetic characters rather than continue with pictographs? The reason most likely is external influence, by India, through trade. Indeed, Indus Valley artefacts have been found in Egypt, and active trade did go on between the two.

It is possible that there was some exchange of scholars and ideas from Egypt to India or vice versa, and through these, the Egyptians learnt of the phonetic system ie Brahmi used in the Indus Scripts. The practicality of this system in writing names etc must have been apparent, leading to the Egyptians adopting the script eventually, as a subset of the Egyptian Hieroglyphics. The Brahmi had close to 50 letters, however most middle Eastern languages have between 20 and 30 alphabets. Thus only the existent sounds, closest in pronunciation, were taken from the Brahmi set.

The Vedas had staunch rules of pronunciation such as Shiksha, Chandas etc, as well as great respect given to the shapes of the scripts, which were often inscribed in Yantras etc. Thus, when this knowledge was carried over to Egypt, these factors, ie sound and shape were regarded as paramount, needed to be preserved. Liberty could be taken though, with respect to meaning. Further, as the script evolved to Phoenician, Aramaic and Hebrew, the spiritual wisdom of these letters were carried forward, and formed a major part of Judaic mysticism. [See <http://www.walkingkabbalah.com/hebrew-alphabet-letter-meanings/>]

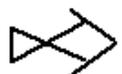
For example, the second alphabet Beth, seen as Phoenician , Aramaic , and Hebrew , all derive from the Egyptian Hieroglyphic  for a house, which further traces back to Brahmi , which is the Ba letter defined by Akshara Devata Bandhini. The meaning of Bandhini is to capture, imprison, enclose or contain - the same meaning implied by house.

The meaning of the alphabets are not always physically explicit, and are often symbolisms alluding to subtler and more abstract concepts, and these are beautifully explained and captured in Jewish mystic understanding. For example, the sixth alphabet, Vav seen as , , , derived from , represents a hook or peg. The real meaning of the letter, is the extension, particularly of Divine Grace, toward mankind, and a tall standing peg is only a pictorial approximation of this idea. The Brahmi source for this letter is Va , and the Akshara Devata is Varada, representing the concept of Divine Grace or Vara.

From these examples one can see how Egyptians integrated the Brahmi letters from India, into their hieroglyphics. First, the Brahmi letters corresponding to the 22 Egyptian phonemes were spotted. Next, the meaning of the Brahmi Akshara Devata is studied, and the word closest in meaning containing the concerned phoneme was chosen. Assuming a meagre 2200 words in a language also, one would end up with as many as 100 words on average starting with each letter. Thus, finding one among the 100, that would give closest meaning, wouldn't be a challenge. Since the Akshara Devata meanings are reinforced in the very shape of the Aksharas, they could easily be adopted as pictographs for the chosen Egyptian words.

In the above example, the concept depicted by Va, ie Divine Grace, was represented by the word Vav for peg, since it could be taken pictorially as an extension of God's grace into Earth. The shape of Va  , only reinforced the meaning of Divine Grace, since it represented a shower drop falling from the skies, as blessing from God, Va known very well in sanskrit as Water or Jala Bija. This vertical fall, seen as the vertical line, lends itself conveniently to describing the peg, in Egyptian, with the same image turned upside down as .

The following Table gives a description of the correspondences for all 22 alphabets as used in the Hebrew Bible, with their meanings, approximate and subtle.

Phoen.	Aram.	Hebrew	Egyptian	Brahmi	Meaning
Ⲁ A	Ⲁ	א	 Aleph - Ox Head	𑀀 A - Amrutha	God as Alakh- ultimate origin, as supreme Creative power, represented by head.
Ⲃ B	Ⲃ	ב	 Beth - House	𑀁 Ba - Bandhini	Bandhini means to enclose, contain, life contained within body.
Ⲅ G	Ⲅ	ג	 Gimel - Throwing Stick	𑀃 Ga - Gayathri Dhumra	Pervading nature of Dhumra (smoke) indicates mobility and movement. 2 Lines in Gimel also show feet.
Ⲇ D	Ⲇ	ד	 Daleth - Door	𑀅 Da - Damari	Damari represents Pingala the physical channel, which is a door for spiritual progress.
Ⲉ H	Ⲉ	ה	 He - Man Prays	𑀇 Ha - Hamsavathi	Hamsa is primordial Chidakasha or God, as Ajapa, the breath chant. He represents breath.
Ⲋ V	Ⲋ	ו	 Vav - Hook, Peg	𑀉 Va - Varadha	Vara is grace of God. Extension pictorially shown as peg.
Ⲍ Z	Ⲍ	ז	 Zayin - Axe	𑀋 Ja - Jaya Bhogada	Two curves represent swords. Victory over obstacles implied. Same concept with axe.

⊞ X	𑖞	𑖛	 Heh - Fence	⋮ Ah - Akshara	Visarga Ah followed by Ka gives guttural sound of Heh. Heh means indestructible soul, as in A+kshara.
⊗ TH	𑖜	𑖞	 Teth - Wheel	⊕ Tha - Sthanvi Neelakanta	Represents purifying nature (removing poison etc is Neelakanta). Represents eternity - restore to primordial purity.
𑖞 I	𑖞	𑖞	 Yod - Arm	𑖞 Ya - Yashasvini	Ya is Vayu Bija, represents fundamental life force - foundation for life and creation - the Divine Spark that is Yod.
𑖞 K	𑖞	𑖞	 Kaph - Palm	⊕ Ka - Kalaratri Bhutavinyasini	Bhutavinyasini is concentration/convergence of elements, or origin from where all diverges. Cupped palm denotes receiving, concentrating in one place.
𑖞 L	𑖞	𑖞	 Lamed - Goad	𑖞 La - Lamboshti	Lamba meaning length, to rise high from ground, where La is Prithvi Bija. Represents Jnana or wisdom, symbolised by Ankusha or goad.
𑖞 M	𑖞	𑖞	 Mim - Water	𑖞 Ma - Mahamaya	Mahamaya is fundamental creative state, the primordial waters. Open and closed Ma/Mim represent liberation and delusion respectively.
𑖞 N	𑖞	𑖞	 Nun - Snake	𑖞 Na - Narya Anantha Shakti	Nun symbol as snake or sprout indicates growth. Anantha is infinite indicating expansion, growth aspect.
𑖞 Sh	𑖞	𑖞	 Shha - Shhanda Anukriya	𑖞 Shha - Shhanda Anukriya	Anukriya means supportive, which is the real meaning of Samekh.

			Samekh - Fish		Support from God to rise.
○ Ø	◡	ע	 'Ayin - Eye	◁ Ai - Aishwaryatmika	Aim is Saraswathi Bija - responsible for knowledge. Same is represented by the eye.
פ P	פ	פ	 Pe - Mouth	𑌒 Pa - Parvati Icchashakti	Iccha is fundamental Divine Will as Life, whose essence is speech - "Word Soul".
צ C	צ	צ	 Tsade - Plant	𑌔 Cha - Chamunda Sushuma	Chamunda is destruction, negation of activity etc. Tsade means to hunt down.
ק Q	ק	ק	 Qoph - Monkey	𑌖 Kha - Khandita Kadyothini	Khandita means separation or distinction - necessity to differentiate real from unreal to rise from monkey - animalistic level to God.
ר R	ר	ר	 Resh - Head	𑌘 Ra - Raktha	Ra is Agni Bija, representing Jnana, Jyotirlinga etc - fundamental state of existence - seen as head
ש S	ש	ש	 Shin - Bow	𑌚 Sha - Shridevi Mangalagauri	Shin represents bringing of three Gunas together. Breaking down large obstacles through sheer determination. This transcendence is Sridevi.
ת T	ת	ת	 Taw - Mark	𑌜 Tha - Thamasya	Thamasya means darkness, inertness, night, as the end of day, referring to end of all activity, symbolised with a mark - Taw, until next cycle starts.

Thus, one can see that the Brahmi Aksharas were taken and adopted into the Egyptian Hieroglyphics - in shape, sound and meaning, to form a phonetic subset, which later evolved into many alphabets such as Phoenician, Aramaic, Hebrew, Arabic, Greek and Latin. One can also see the importance and significance given to these Aksharas in Abrahamic religion,

because of the concepts they represented. On this basis one can understand that phonetic based writing systems all around the world, can be traced back to a single alphabet source - Brahmi, and this in turn traces back to the cymatic patterns of the phonemes themselves.

As seen in earlier sections, one can see how the Brahmi alphabet subset of 22 Aksharas accurately describes the coding part of DNA. Similarly, one can understand the non-coding part of DNA through the Aksharas both included and excluded from this subset, in terms of codons. To put these into perspective, one must first understand the scope of the Aksharas, and the alphabet set as its subset.

An earlier article elaborated upon the concepts of the Sri Yantra, which is a conceptual map of the entirety of existence. It was seen that these concepts, when invoked using vibrations, particularly sound energy, formed the various phonemes of the Universal Vedic language, each one powerful to invoke the energies represented by the phonemes. This set was known as the Aksharas, and formed the fundamental building blocks of words and Mantras contained in the Vedas.

However, as languages developed, cultivating individual civilizations, there was a threat of the Vedic wisdom being lost, and for this reason, the seers or Rishis, made an attempt to preserve the Vedas for posterity. For this purpose, they introduced Sanskrit - a distilled form of the Vedic language, comprising 50 of the 60+ phonemes. These 50 Aksharas were written using the Brahmi script, which is derived from the cymatic patterns obtained when voicing these Aksharas, as shown in the end of this article.

This subset of 50 Aksharas is a complete subset, in that it can encompass all of the concepts in nature using one or more Aksharas. It can also express the other Aksharas of Vedic language as combinations or derivatives of the 50. However, there is no better evidence for its completeness than in the Brahmi script. Particularly, one takes the inner three enclosures of the Sri Yantra, which by itself forms the Bala Yantra. One can then verify that all the 50 Akshara Brahmi shapes can be derived from the Bala Yantra.

From this one can understand that this set of 50 Aksharas has a geometrical as well as conceptual basis, and is self-contained as well as a comprehensive set. It is this set that manifests as the genetic codes for the noncoding regions of the DNA.

	+	ᳵ	Λ	ᳶ	⌈	
	ka	kha	ga	gha	ṅa	
	[kə]	[kʰə]	[gə]	[gʰə]	[ŋə]	

	᳚	᳛	᳜	᳝	᳞	
	ca	cha	ja	jha	ṅa	
	[cə]	[cʰə]	[jə]	[jʰə]	[ŋə]	

	᳚	᳛	᳜	᳝	᳞	
	ca	cha	ja	jha	ṅa	
	[cə]	[cʰə]	[jə]	[jʰə]	[ŋə]	

८	○	𑂔	𑂕	𑂖
ṭa	ṭha	ḍa	ḍha	ṇa
[ṭə]	[ṭʰə]	[ḍə]	[ḍʰə]	[ṇə]

𑂗	⊙	𑂘	𑂙	𑂚
ta	tha	da	dha	na
[tə]	[tʰə]	[də]	[dʰə]	[nə]

	𑌒	𑌔	𑌖	𑌘	𑌚	
	pa	pha	ba	bha	ma	
	[pə]	[pʰə]	[bə]	[bʱə]	[mə]	

	𑌙	𑌛	𑌜	𑌞	
	ya	ra	la	va	
	[jə]	[rə]	[lə]	[və]	

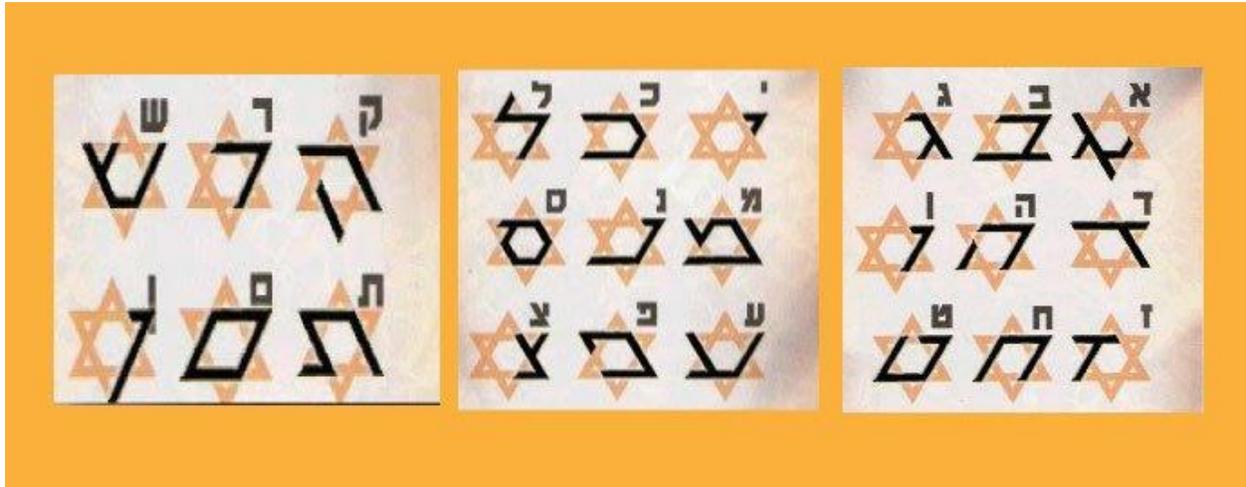
𑖀	𑖁	𑖂	𑖃
śa	ṣa	sa	ha
[ɕə]	[ʂə]	[sə]	[fə]

𑖄	𑖅	𑖆	𑖇	𑖈	𑖉
a	ā	i	ī	u	ū
[ə]	[a:]	[i]	[i:]	[u]	[u:]

X	χ	ʔ	ʔ̄
ṛ	ṝ	ḷ	ḹ
[r]	[r:]	[l]	[l:]

Δ	Δ̄	ḷ	ḹ	ḷ̣	ḹ̣
e	ai	o	au	aṅ	aṅ̄
[e/ɛ]	[əy]	[o/ɔ]	[au]	[aŋ]	[əŋ]

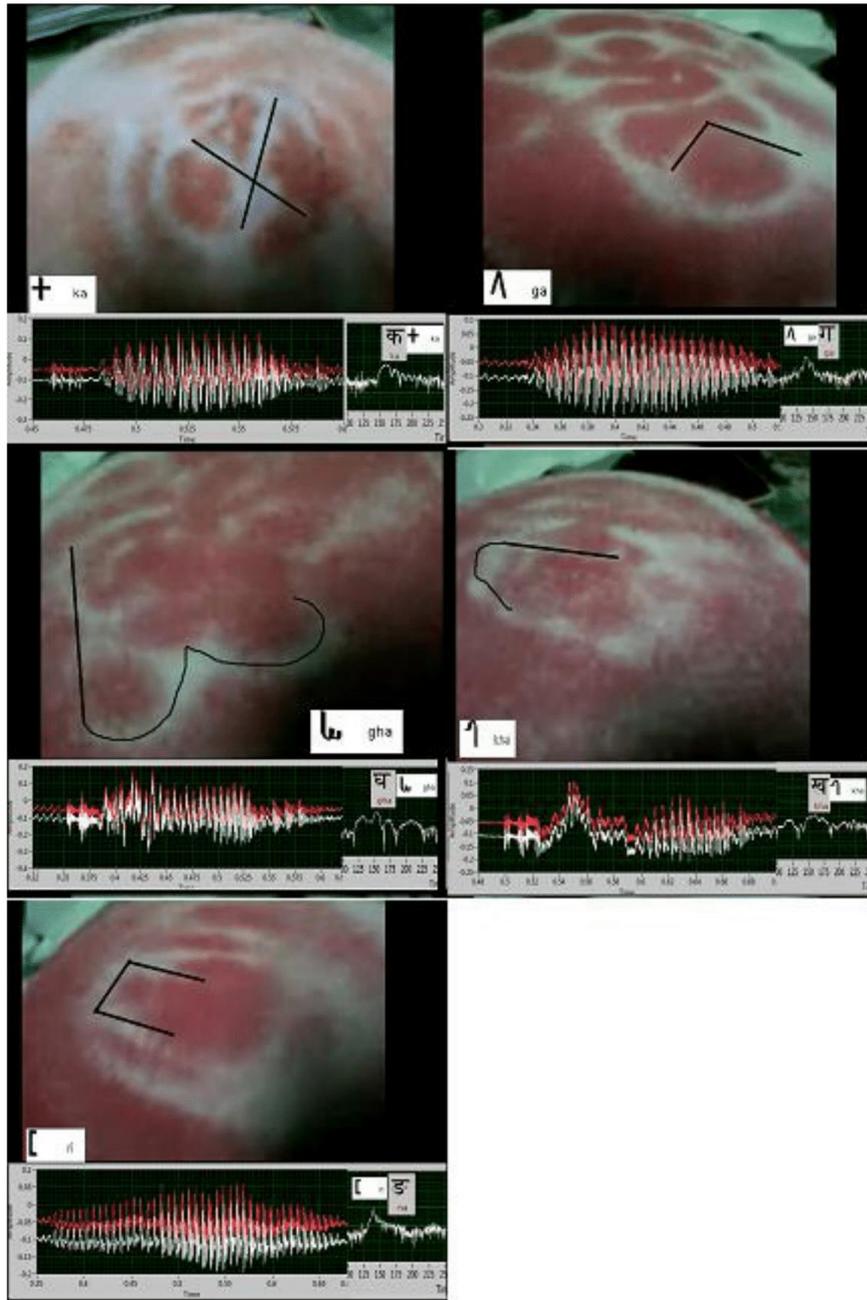
A subset of this set of the 50 Aksharas yields the 22 alphabet set of Egyptian or Hebrew. It is important to know that just like the 50, the 22 alphabet set is also a complete self-contained comprehensive set, having a geometric and thus conceptual basis. In particular, the geometric basis is the hexagram figure known as Star of David or Shatkona, which is formed by taking just one upward and one downward triangle from the Bala Yantra, and interlocking them. Thus, as a subset of Bala Yantra, one can extract the 22 alphabets of the Hebrew script from the Star of David, and this is an aspect well studied.



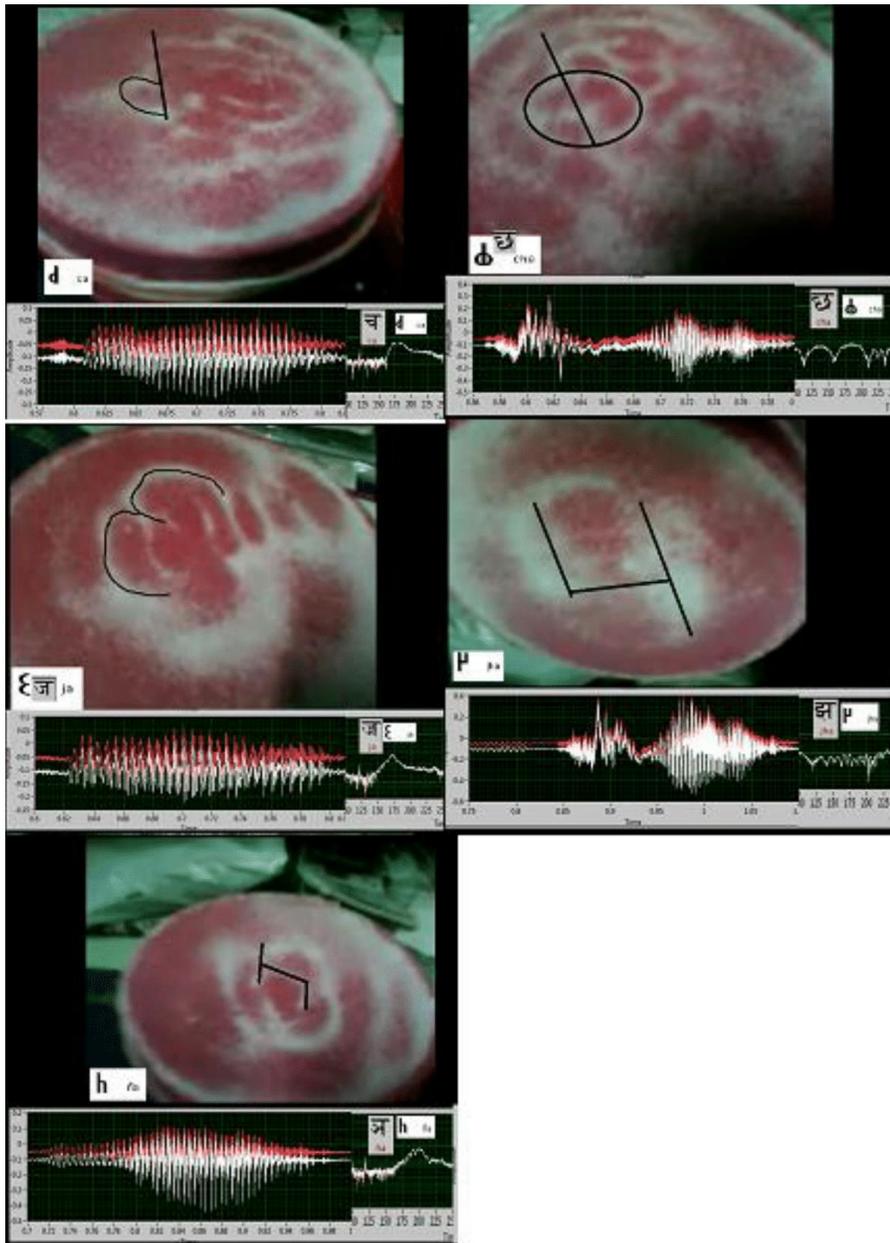
Thus the basis of the 22 proteins and the coding DNA is this 22 alphabet set, which is a comprehensive subset of Brahmi and thus of the vedic Aksharas. Thus, one can understand the foundations of the genetic code in Aksharas, the set of concepts underlying the entire universe.

Observed Cymatic patterns - Cymatic patterns of the Brahmi Alphabet

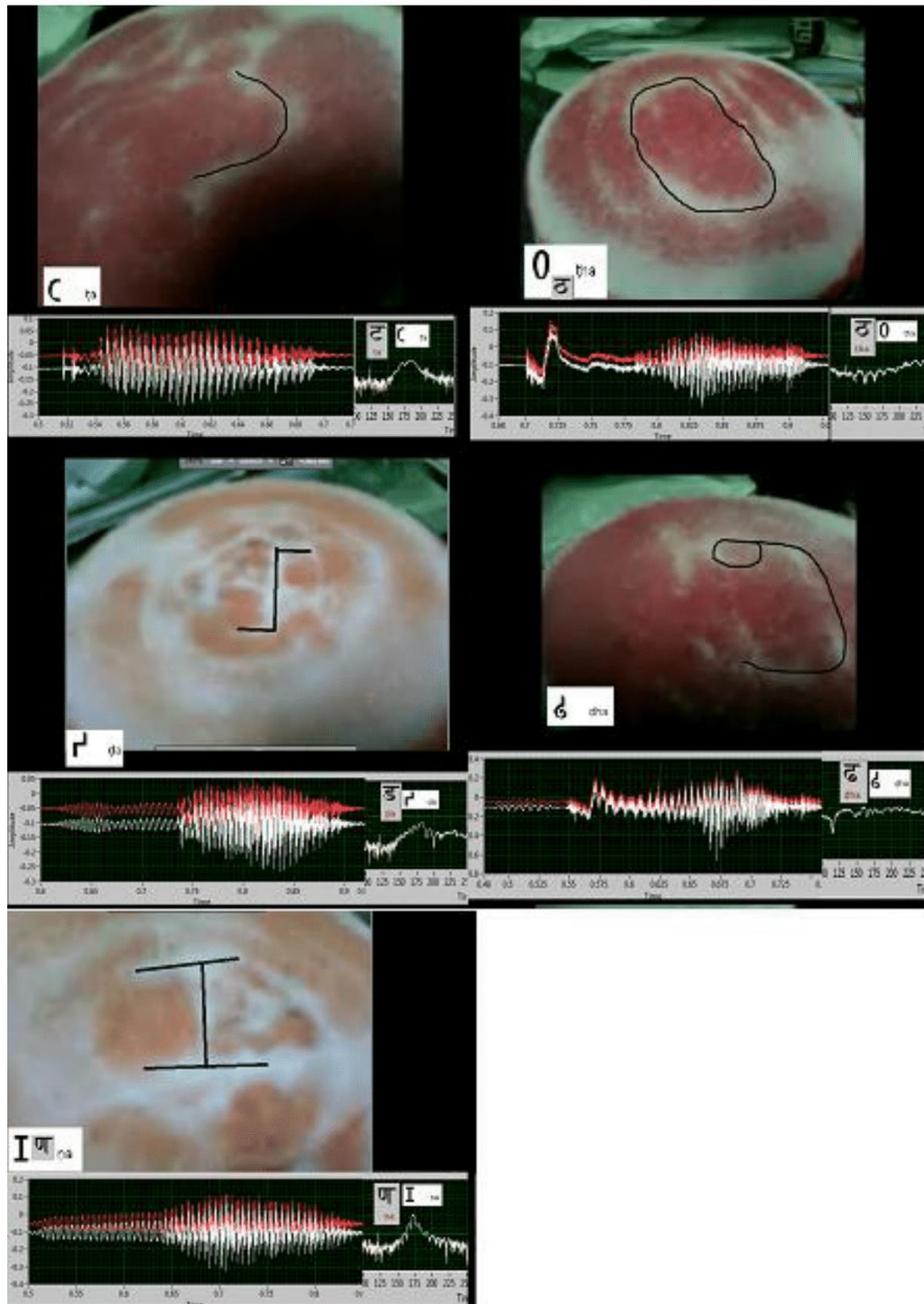
1. Velar Consonants - Ka, Kha, Ga, Gha and Nga



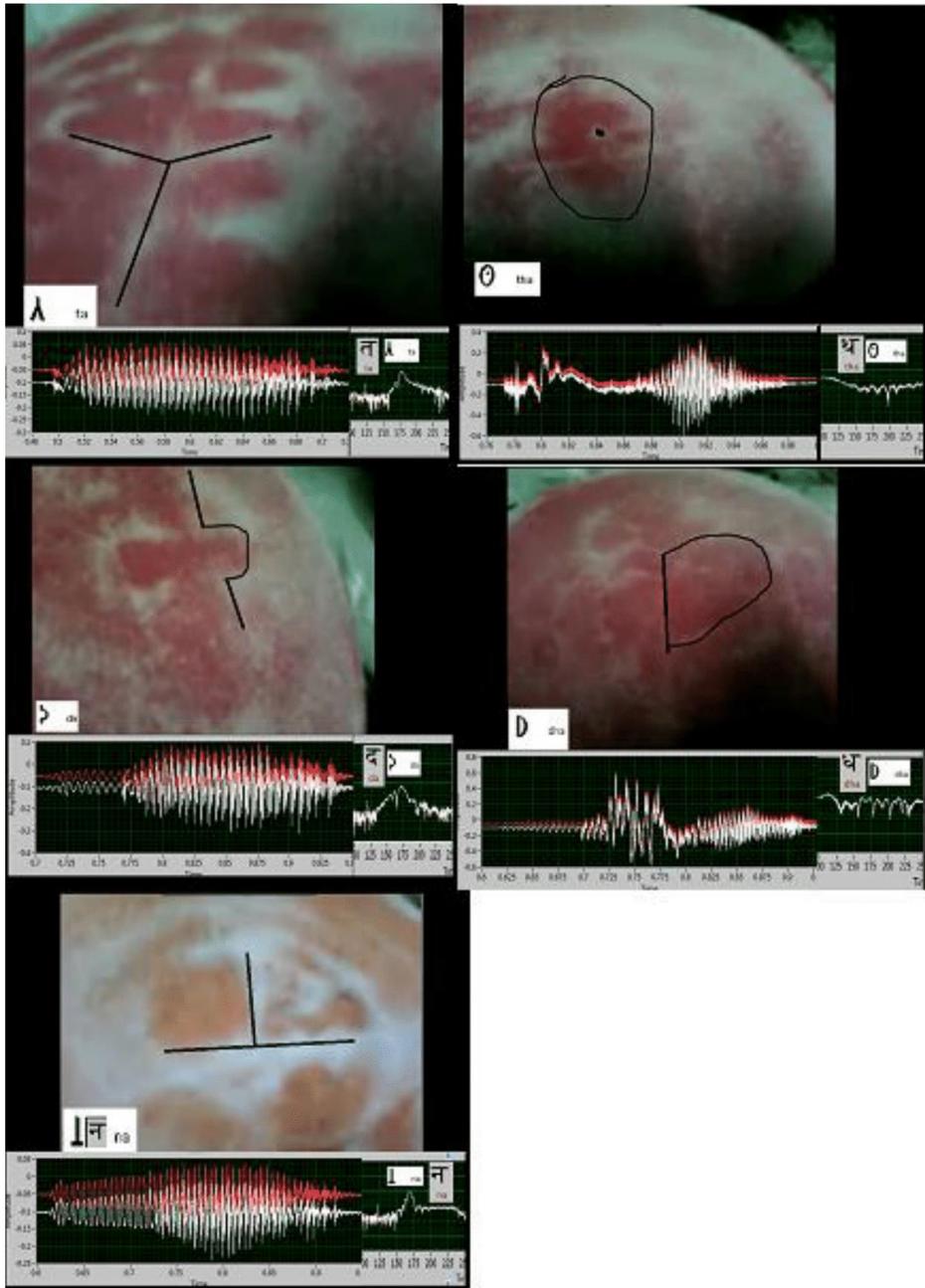
2. Palatal Consonants – Cha, Chha, Ja, Jha and Nja



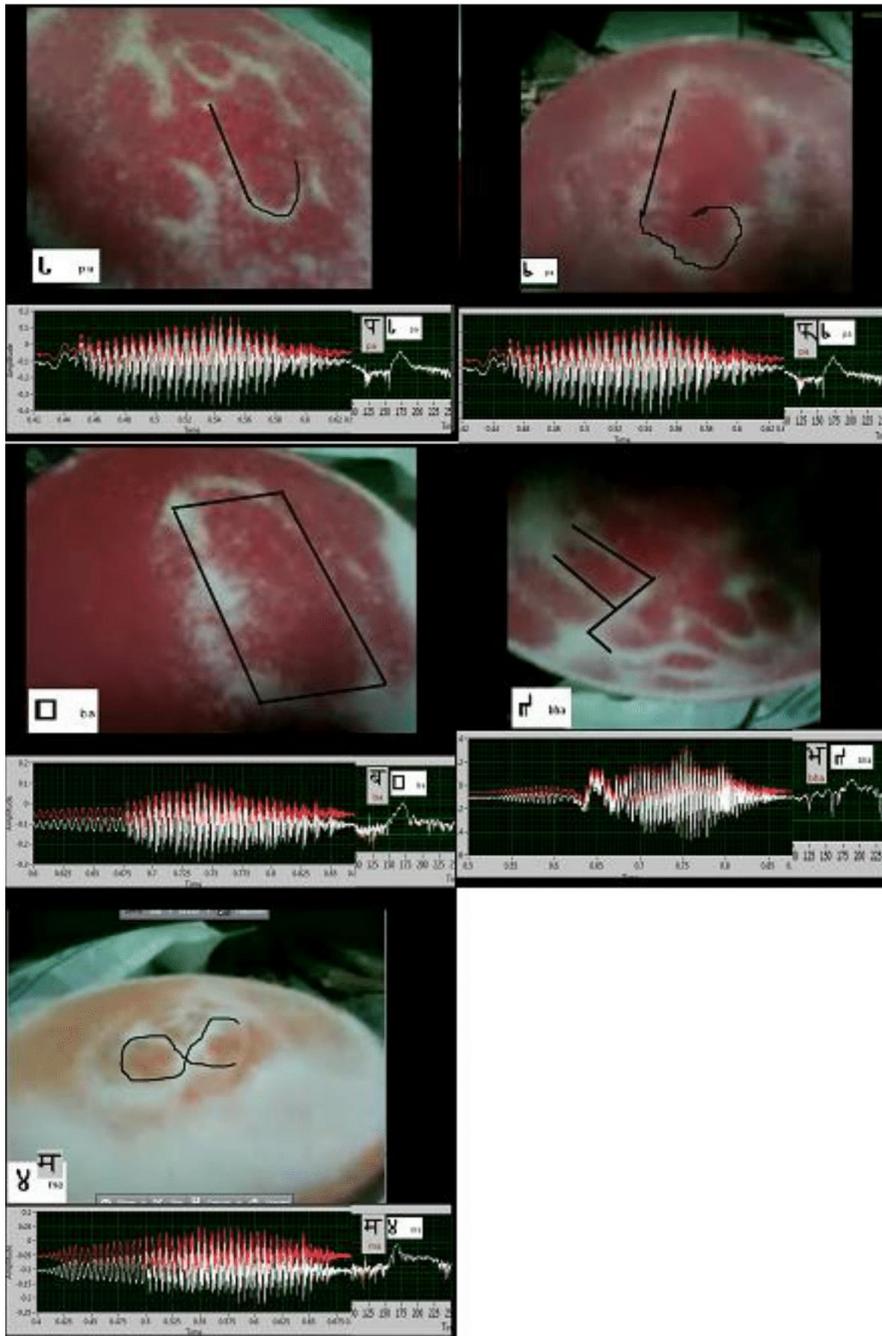
3. Retroflex Consonants – Ta, Tha, Da, Dha and Na



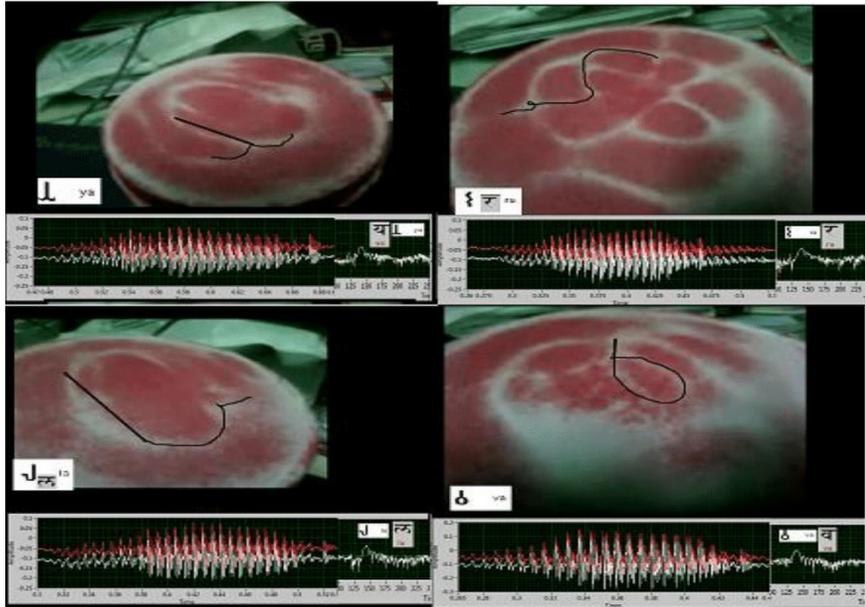
4. Apico-Dental Consonants - Ta, Tha, Da, Dha and Na



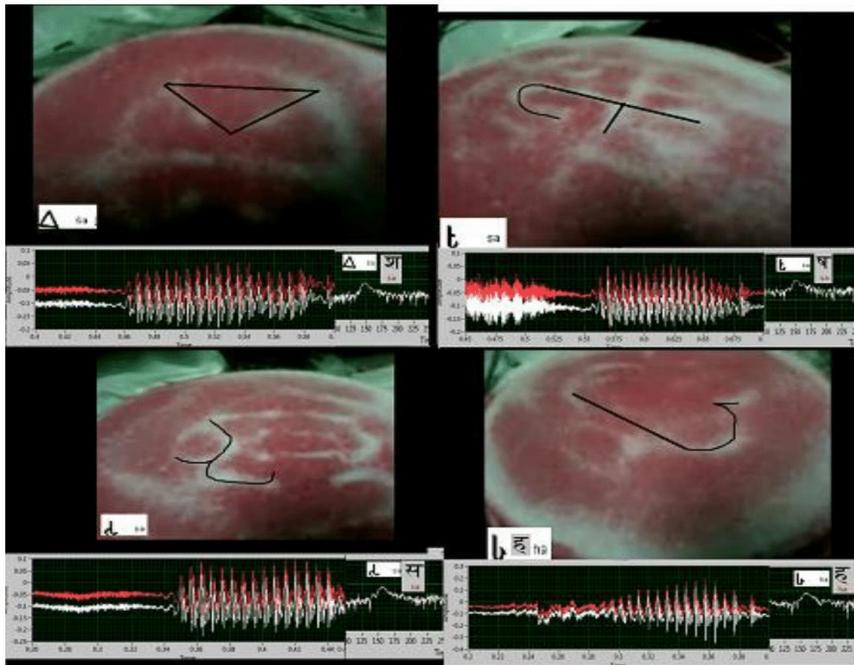
5. Labial Consonants – Pa, Pha, Ba, Bha and Ma



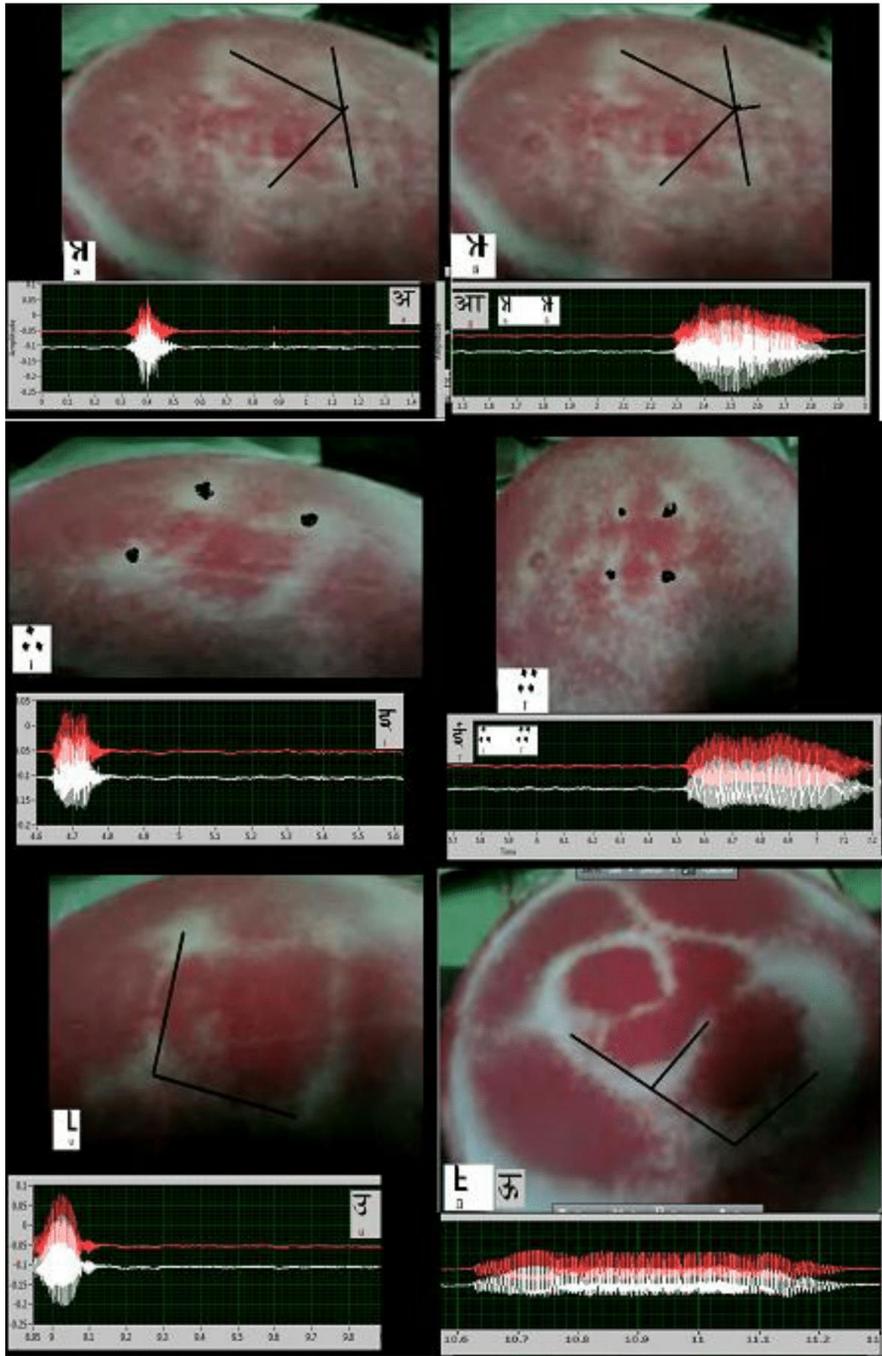
6. Approximants - Ya, Ra, La and Va



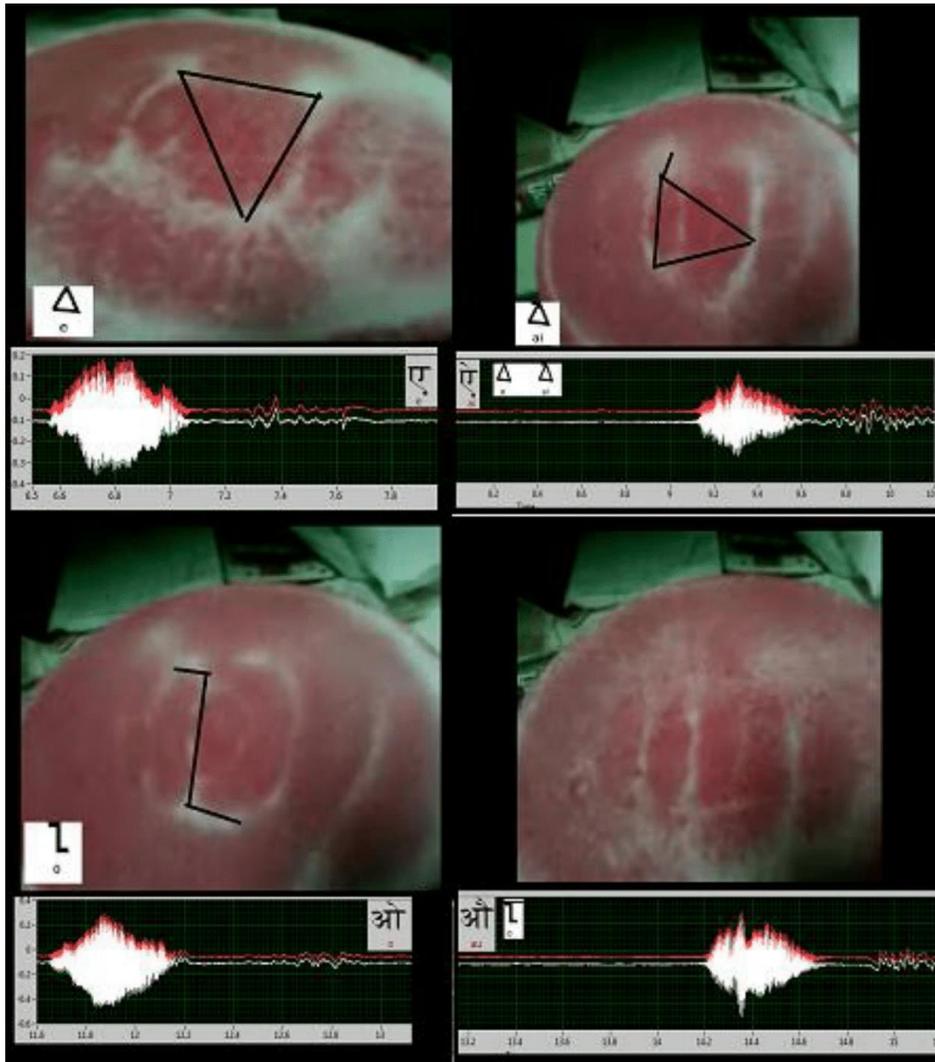
7. Sibilants - Sha, Shha, Sa and Ha



8. Vowels 1 - A, Aa, I, Ii, U and Uu

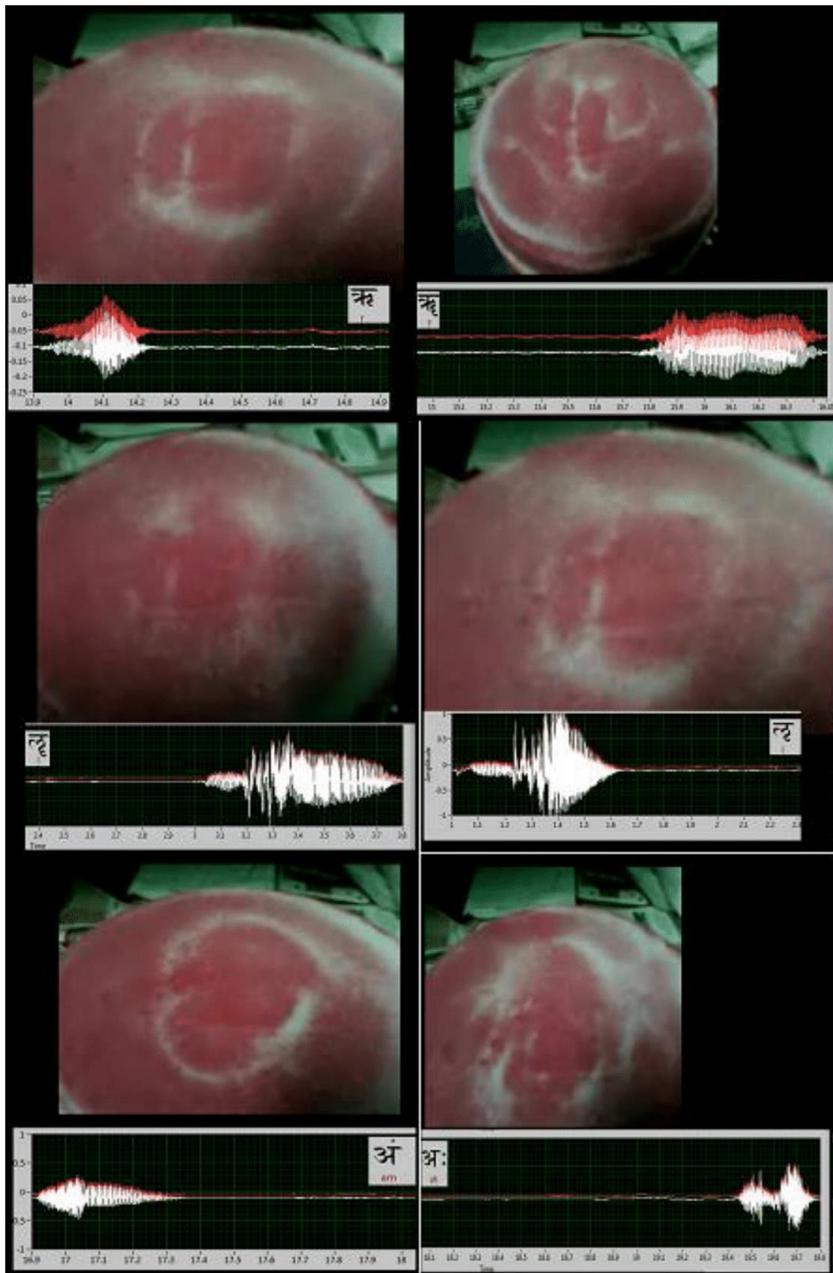


9. Vowels 2 – E, Ai, O and Au

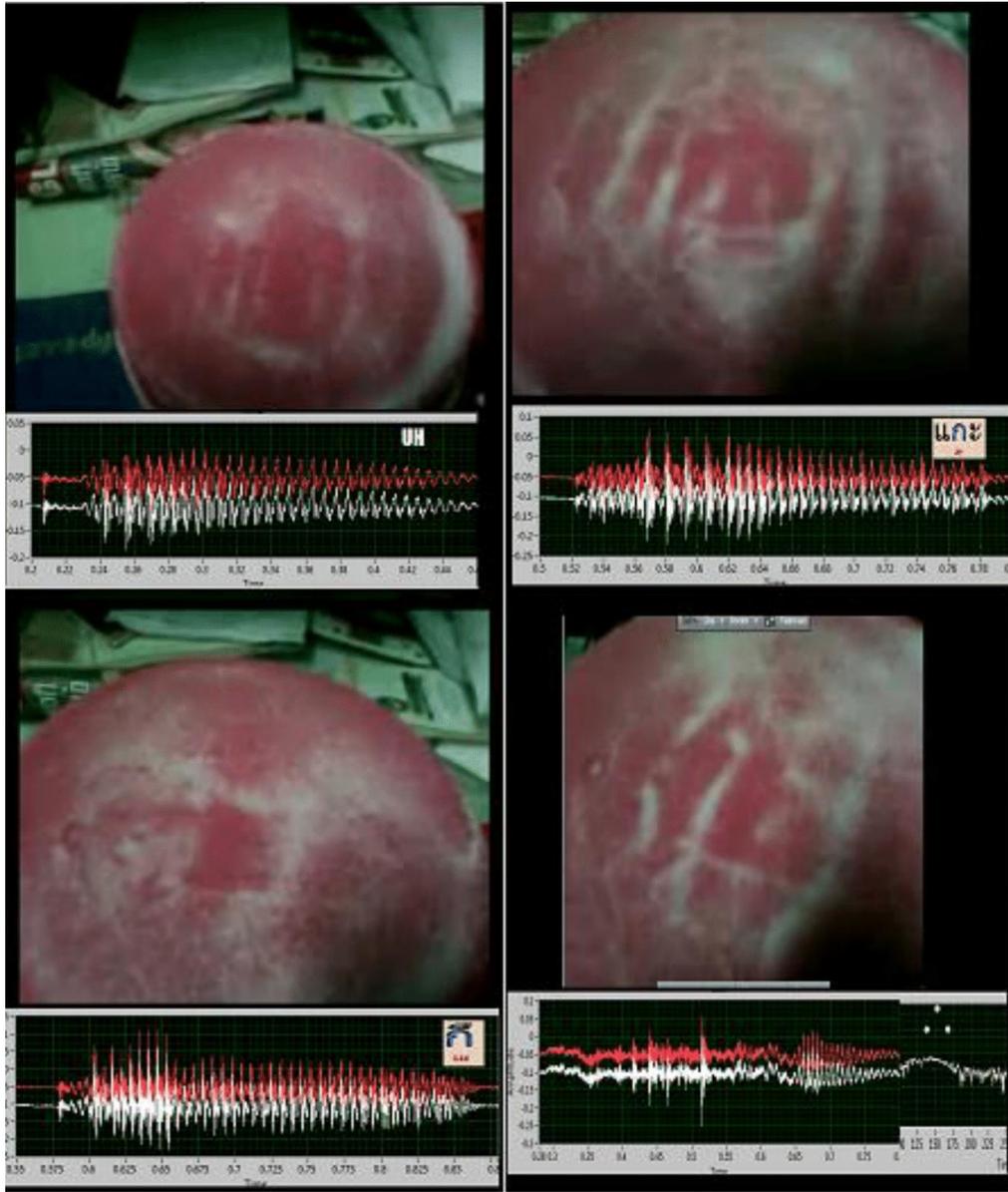


Observed Cymatic patterns - Cymatic patterns of select phonemes not found in the Brahmi Alphabet

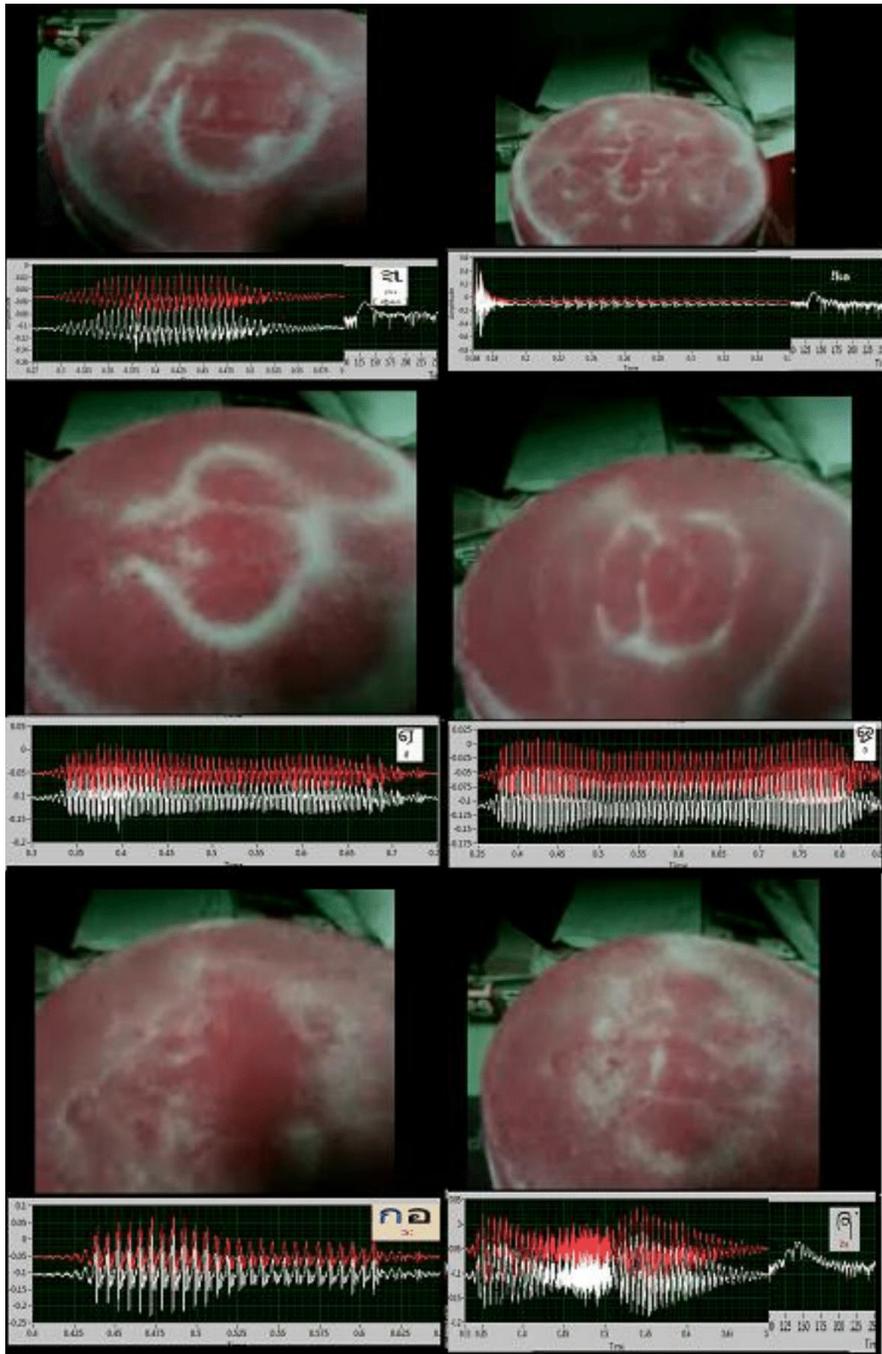
1. Vowels R, Rr, L, ll, Am and Ah



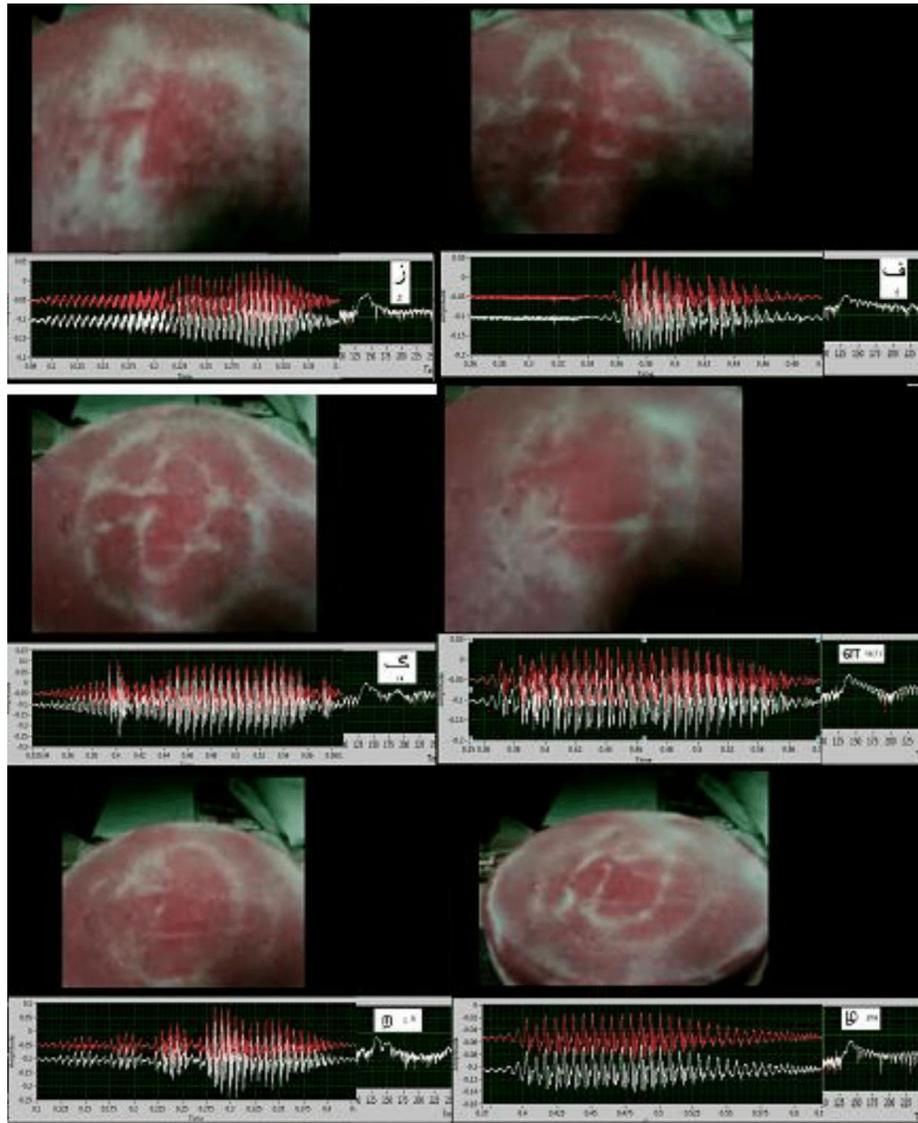
2. Vowels Uh, Ae, Ew and Gluttural letter (Aytam in Tamil)



3. Letters Jna, !Xa (click), E, O, Aw and Za (French Je sound)



4. Letters Z, F, Guttural Qaf, La, Rra, Zha



Sai and Venkatesha

In the present age of Kali Yuga, Amma who is Parabrahman has taken the form of Lord Venkatesha. This is proved in the temple of Thirukodikaval near Kumbakonam, where Lalitha Maha Tripurasundari gives Darshan as Venkatesha.

The reason for this manifestation is particularly so that Amma can bring everybody to spiritual progress, towards finally attaining liberation. Accordingly, Amma Lalitha Venkatesha who is Brahman appears as various deities or Gurus in each of the 16 stages as explained above. Indeed the deities mentioned till now, which cover all major faiths of the world, are all none other than Lalitha Venkatesha.

Venkatesha is the God, the Parabrahman, the Mother that manifest in all these stages in these different forms. He is the entire Spiritual path Himself. In Thirumala, He the pure bliss of Sahaja as Ananda Nilayam Venkatesha. Near Kumbakonam, He is the purer form of this as Suddhananda Nilayam Oppiliappan.

Venkatesha appears as Venkusa the Guru in Selu, Maharashtra. He was the Guru of Sai Baba, and during Mahasamadhi declared that Sai is His representative. Sai Baba, who is Dattatreya incarnate is the Guru of the present Kali Yuga. This can be seen in the fact that no other Guru Samadhi attracts as many devotees and visitors as Sai Baba of Shirdi. Thus, Sai is Venkatesha.

Thiruparkadal: Prasanna Venkatesha is Doosheshwara Shiva
Valasaravakkam: Venkatesha is Venkata Subrahmanya
Thiruvattaru: Adi Keshava worshipped as Thiru Allah by Arcot Nawab
Sogane, Shimoga and Secunderabad: Venkatesha is Panduranga Vittaleshwara
Vepanjeri: Venkatesha is Dashavatara Vishnu Roopa
Jillelaguda: Venkatesha is Hari Hara Roopa with Lingam as crown and Matsya tail
Thirumala Suryaprabha Vahanam: Venkatesha is Surya Narayana
Thirumala Bhoopala Vahanam: Venkatesha is Dikpaala
Thirumala Hamsa Vahanam: Venkatesha is Saraswathi
Thirumala Kalpavriksha Vahanam: Venkatesha is Kalpavriksha
Vellore Nava Sai Mandir: Sai Baba as Navagrahas
Mulbekh and Alchi: Maitreya with features of Venkatesha
Kolhapur: Alankara of Venkatesha for Mahalakshmi
Chempazhanthi: Balaji Venkatesha as Bala Durga with same hand postures
Kallidaikurichi: Sri Yantra as Kambangudi Kulathur Sastha
Chinnalampatti: Venkatesha Alankara for Hanuman
Kollam: Christ as Guru with Chinmudra and Baalaa Yantra in Jagat Jyoti Mandir
Ranganayakam by Dikshitar: Ranganatha is Ganapathi Samaana Vishwaksena
Entha Mathramuna by Annamayya: Venkatesha is Adi Bhairava
Venkatesha Sahasranama: Venkatesha is Buddha
Pralaya Payodhi by Jayadeva: Jagannatha Keshava is Buddha

As a means to appreciating the Divine Wisdom and to venerate and celebrate it, one can view Venkatesha as a Vishwaroopam viewing in Amma's form ask the concepts in their different realms. The basis for mapping are the Aksharas, as specified by texts like Matraka Nighantu. Each Akshara links to concepts in other realms and thus those can be understood.

A Varga from Amrutha to Alshara are seen in forehead, face, right eye, left eye, right ear, left ear, right nostril, left nostril, right cheek, left cheek, upper lip, lower lip, upper teeth, lower teeth, tongue and throat. Ka Varga from Kalaratri to Ngarna are in right upper arm, right lower arm, right wrist, right palm, right fingers. Similarly Cha Varga from Chamunda to Jnanarupa are seen in left upper arm, left lower arm, left wrist, left palm and left fingers. Retroflex Ta Varga and dental Tha Vargas are seen in right and left thighs, knees, calves, ankles and toes respectively. Pa Varga is seen in right hip, left hip, spine, abdomen and navel. Ya Varga from Yashaswini to Varada are seen in heart, right shoulder, neck and left shoulder. Sha, Shha, Sa, Ha are seen in right and left thorax, right and left abdomen. Ksha is mapped to the crown.

Fused phonemes are also mapped to the form of Venkatesha. The clicks corresponding to 8 Vargas starting from A varga may be seen in Tilak, Chakra, Shankha, Right leg, left leg, stomach, heart and crown. For the Aksharas of seventh Avarana, Vakdevatas are mapped with right cheek, right shoulder, right chest, right stomach, left stomach, left chest, left shoulder, left cheek representing respectively La, Rra, Za, Zha, E, O, Na, Li.

Other stages among the 16 not mapped to Aksharas are also seen. Stages 1, 8, 13 and 3 are seen as tongue, heart, legs and feet. Stages 15 and 16 are seen in feet and heart. Stage 4 is seen as the 10 Siddhis mapped to right shoulder, right fingers, right thigh, right toes, left toes, left thigh, left fingers, left shoulder. The 8 Matrikas of stage 10 are seen in toes, right side, head, left side, left knee, right knee, right shoulder, left shoulder. Finally stage 14 as the 10 Mudras are seen in the same pattern for 1st 8 as the Matrikas, and for the last 2 Mudras, are seen in head and toes. The header manifestations for stages 4, 10 and 14 may be seen in the chakra, shankha and crown respectively. Finally the 3 Devatas of stage 15 are seen in right, left eyes and Tilak.

The various facets of wisdom explored in the article have all been combined to form a single image, in the context of Sai Venkatesha, in a 9:16 ratio, suitable as a cell phone wallpaper. The image is about 12MB in png and is very detailed, and can be understood using the following guidelines.

At the center is Venkatesha as the form of Amma for the present Kali Yuga. Sai is the chosen form of Guru for Kali Yuga, Himself being a disciple of Venkusa Venkatesha. Around the central image are 32 panels containing images of the 75 manifestations from different cultures. For cultures that encourage Sagunopasana, forms of deities as found in temples etc are used, and for others primarily on Nirgunopasana, religious symbolisms are used as representations. Among Sagunopasana, the representations of Venkatesha as various deities in different temples are used ie Thiruparkadal Venkatesha as Shiva, Thirukodikaval Venkatesha as Lalitha, Valasarawakkam Venkatasubramania etc.

The manifestations cover all sixteen stages, and as stage identifiers or delimiters, the header manifestations of each stage are represented in full sized panels. Outside these panels the 12 Adityas are represented by their zodiac symbols. In the 5th stage, Vasus are represented by the E8 image of particles, with the axes marked by symbols of the Ashta Bhairavas (Brahmi-Kamandalu, Vaishnavi-Chakra, Maheshwari-Trishula, Kaumari-Vel, Varahi-Plough, Mahendri-Vajra, Chamunda-Skull, Mahalakshmi-Lotus). In the 11th stage, Rudras are marked (spiraling outward are Mahadeva, Hara, Maharudra, Shankara, Neelalohitha, Eeshana, Vijaya, Bhima, Devadeva, Bhavodbhava, Adityatmaka). In the 15th stage Ashvinis are represented by the Life and Sense grids evolved using the golden rule. These 3 stages also delimit the Rig-Atharva, Yajur-Atharva and Sama-Atharva sections of the 16 stages.

Within each panel manifestations are presented. Along with the manifestations, the respective Aksharas are given in Brahmi script in gold. Also the names of corresponding Avarana Devatas in Nrahmanda, and their equivalent in Pindanda are mentioned. For the 22 alphabet subset of Aksharas, the proteins coded are also mentioned in abbreviated form. The corresponding Manvantara is specified by its haplogroup, and it is color coded to represent the corresponding Lokas VIBGYOR representing Patala to Atala Lokas.

For header manifestation panels, the MBTI types associated with each are mentioned. Each of the 16 stages is mapped in this article to a Sri Yantra Avarana, and those in turn are mapped to the 9 numbers. Thus the numbers are also mentioned for each of the stages. The numbers are color coded to represent the Chakras (Sahasrara-violet, Ajna-indigo, Visuddhi-blue, Anahata-green, Manipura-yellow, Svadishtana-orange and Muladhara-red). These colors also represent musical notes from Nishadham backward to Shadjam.

Due to size constraints the image is not included here, and may be obtained by contacting the author.

Appendix

Mahaperiyava on Sanskrit, Tamil and Vedic languages

Narrative 1:

Experiences with Maha Periyava: The Oldest Language in the World

When I went to the Kanchi Mutt to have the darshan of Sri Maha Periyava, there were four foreigners there, an Israeli, an Italian, a German and a British. They had come to do their PhD in Philology on the topic of 'the most ancient languages in the Occidental and the Oriental world'. They were studying Latin, Hebrew and Greek languages in the Occidental part and Sanskrit and Tamil in the Oriental part.

Maha Periyava was in his private quarters, performing His Nithya Karma Anushtanas and elaborate poojas; they had waited and desired to take a photo of Him but His kaingaryams refused permission. They were heartbroken that they could not take a picture. All the four of them were standing near a tree since morning waiting for Periyava to finish his poojas and give darshan. They asked His sevakas when He would be done with the poojas but got an unconvincing reply.

I told the foreigners that we Indians are used to the way of life at the Mutt, but how had they all been standing for the past 6 hours? One of them looked at his watch and exclaimed, "Oh my God, has it been 6 hours? He is a Man of Certainty and is Beyond Time!"

Maha Periyava came in after 10 minutes and we all went and prostrated before Him. Looking at the man (who had the camera hanging around his neck) who had wanted to take the photos, He gestured with His hands that he could take the pictures now. He posed for three photos and stopped him before taking the fourth.

"Why have you all come here and what is the purpose of your visit? ", asked Periyava.

"We have visited many places regarding our research on the most ancient language".

Periyava asked, "So, did you arrive at a conclusion as to which is the most ancient language?"

The Israeli replied, "Hebrew is the most ancient in the Occident; but in the Oriental, people say that both Sanskrit and Tamil are the oldest, but we are confused and that is why we are here for Your opinion".

Periyava said, "There is another language which is more ancient than all these, it is the Vedic Language. It is the source of even Sanskrit and Hebrew."

"There is a verse about rebirth in Hebrew, can you recite it completely?" asked Periyava to the Israeli by giving the man the first two words.

The Israeli recited it for 3 to 4 minutes. Periyava looked around and asked some boys, "You have all learnt Rig Veda, can you recite this particular verse? He suggested some mantras to the boys."

Those boys recited the Veda Mantras for 5 minutes.

Periyava then addressed the Israeli "Did you understand what these boys recited now?"

The four men remain quiet.

Maha Periyava smiled and turned to the boys and said "You all will definitely not understand what this man had recited in Hebrew!"

He then turned to the Israeli and said, "What you have chanted before is the same as what these boys have chanted!"

The 4 foreigners were stunned and did not know how to respond. Maha Periyava told them that he could prove it and asked for a paper and a pen.

"In Vedas it is mentioned that the world has been classified into 32 portions/regions. And in each of the 32 geographic regions, Vedas say how the Veda Aksharas have changed/got pronounced in those places!"

He asked each of them which region they came from and then explained to them how a particular Veda Aksharam got changed in their individual places! He asked the boys to recite a verse from Rig Veda again and told the men how each Aksharam in Rig Veda in that verse would sound in their Regions!

The Sarveshwaran then said, "I will now recite this verse with some difficulty as it has been a long time since I had Abhyasam and the Mahan started to chant the mantra slowly, slightly differing from the basic shloka aksharam so that it matched how it would sound in Hebrew. After he recited the aksharams he asked the Israeli if he understood the recital of the mantra and aksharam and observed any familiarity.

To the boys who recited the Vedas, He said, "I will now recite it in a slightly different form based on how each Aksharam will sound in Hebrew. Please do not think it is wrong; there is this injunction in the Vedas that it can be recited this way also."

To everybody's astonishment and surprise, the Israeli started to recite in Hebrew what Maha Periyava exactly chanted- the aksharas in a modified form, as it resembled the Hebrew language. The Israeli therefore chanted it together with Him!!!

We were all stunned!!!

After this demonstration Maha Periyava addressed everyone assembled there, "I told you earlier, the same verse in Rig Veda is present ditto in Hebrew, but the Aksharas have changed slightly. (As we say Yamuna but in the North it is Jamuna, Va in the south is Ba in West Bengal, Paa in Tamil is Haa in Kannada etc). Therefore, the most ancient language in the world is the Vedic language!"

Maha Periyava then asked for paper and pen to be supplied to the four men in order to prepare a table and fill it with how the Rig Veda Aksharams sounded in their language. This was completed in 15 minutes.

The Israeli was shocked and exclaimed, "This is something unimaginable!"

Periyava asked him, "What do you think now, do you now agree that everything has sprung from Vedas?"

The look on the Israeli's face was not convincing.

Periyava quipped, "What, Are you thinking why could Vedas not have originated from Hebrew?"

The man said, "Yes, it could have been the reverse also, the Vedas could have come from Hebrew".

Periyava replied smilingly, "You only have the lock, whereas we have both the key and the lock! It is even mentioned in the Vedas as to which Maharishi from here in India went to your region and spread/taught Vedas in Israel!"

The man was fully convinced in the end that the Vedic language is indeed the oldest and the most time honoured.

(Translated from Thiruvannamalai Shri Gowrishankar's Tamil video interview)

Narrative 2: All Sounds are in Sanskrit

Sanskrit has got all phonemes (sounds). In fact there is no sound vocalised by humans that is not present in that language. It has the f sound. 'Zha' is not, as is usually imagined, unique to Tamil. It exists in the Vedic language which is the source of Sanskrit. The 'da' in the Yajur Veda has to be pronounced as zha in the corresponding page in the Sama Veda. The three dot symbol 'Aytam' is present in Sanskrit also. There is a Panini sutra 'h kap pauc'. According to it if a visarga comes before a word beginning with ka (Ramah + Karunakarah), it will not have the h, as mentioned before, but of h as in aytam. Here it is the visarga that is the aytam that becomes the f before pa-kara.

What Tamils call 'kutriyalukaram', is present in Sanskrit also. In Sanskrit the vocalic 'r' and 'l' are not included among the consonants, but regarded as vowels.

There is no short 'e' or 'o' in Sanskrit. I felt this to be a minus point. On going through Patanjali's commentary on the sutras of Panini, I discovered that Sanskrit too had these short vowels and it was a comforting discovery. Patanjali says that, in chanting the 'satyamugri ranayaniya sakhas' of the Sama Veda, the short e and o are used. Thus Sanskrit embraces all the sounds it has also a script in which the sound of every letter is determined with utmost accuracy.

As the language of the gods it brings divine grace. The sounds of Sanskrit create beneficial vibrations of the 'nadis' and strengthen the nervous system, thereby contributing to our health.

Narrative 3:

A Language that has all Phonemes (Hindu Dharma: Siksa):

From the foregoing it is clear that Sanskrit has the "f" sound. In fact there is no sound vocalised by humans that is not present in that language. "Zha" is not, as is usually imagined, unique to Tamil. It exists in the Vedic language which is the source of Sanskrit. The "da" in the Yajurveda has to be pronounced as "zha" in the corresponding passages in the Samaveda. In the Rgveda also in some places the "da" has to be similarly pronounced. The very first word in the first sukta of the Rigveda, "Agnimile", has to be pronounced almost as "Agnimizhe" - not a full "zhe" for "le", but almost. There is a sound very close to "zha" in French. But neither in that language nor in Sanskrit is there a separate letter to represent that sound. "Ja" and "ga" serve the purpose of "zha" in French. In Sanskrit "la" serves the same purpose. (I am told there is "zha" in Chinese.)

The three-dot symbol in Tamil, called "aytam", is present in Sanskrit also. There is a Panini sutra, "h kap pauc". According to it, if a visarga comes before a word beginning with "ka"(Ramah + Karunakarah), it will not have the sound of "h", as mentioned before, but of "h" in the "aytam". Here it is the visarga that is the aytam that becomes the "f" before "pa-kara". Ramah + panditah = Rama f panditah. This "f" sound is called "upatmaniya". "Tma" suggests the sound created by blowing the pipe to build the kitchen fire. When you blow thus you get the "f" sound. The initial letter of the English word "flute" is "f", is it not? One more point about "fa". We generally pronounce "fa" as "pa". But it would be wrong to think that we [in the South] pronounce coffee as "kapi" in the same way. In Sanskrit "kapisa" means dark brown - that is the colour of coffee powder. Our kapisa is the white man's coffee.

What Tamils call kurriyalukaram is present in Sanskrit also -r and l. People write both "Rigveda" and "Rugveda" - the first letter of the word is neither "Ri" nor "Ru". It represents in fact the Kurriyalukara sound. It is between "u" and "i". We write "Krishna" in Roman. In the North some people write the same as "Krushna". It is amusing to listen to Andhras pronouncing "hrdayam" as "hrudayam". Both the "ra-kara" and "la-kara" of Sanskrit have vocalic forms. But in "la-kara" the vocalic form comes only in conjunction with another consonant. In the ra-kara vocalic form we have examples like "Rg", "rsi"; in the "la-kara" vocalic form we have "klpta". In Sanskrit the vocalic "r" and "l" are not included among the consonants but regarded as vowels: a, aa, u, ui, i, ir, l, e, ai, o, au, am, ah. There is no short "e" or "o" in Sanskrit. I felt this to be a minus point for that language. Parasakti, the Supreme Goddess, is the personification of all sounds. So should there not be all sounds in a language (like Sanskrit)? Why should it lack these two sounds (short "e" and short "o")? On going through Patanjali's commentary on the sutras of Panini, I discovered that Sanskrit too had these short vowels and it was a comforting discovery. Patanjali says that, in chanting the Satyamugri and Ranayaniya Sakhas of the Samaveda the short "e" and "o" are used. Thus Sanskrit embraces all sounds. It has also a script in which the sound of every letter is determined with the utmost accuracy

The Hajj: THE MISSION: Sri: Ultimate Goal of Man, Ultimate Truth is advised, recorded in highest thinking: Rig, Yajur, Sama, Atharva, condensed in Vedanta, condensed as Sri Vidya, in 16 stages of Shodashi Mantra: Satsanga, Dharma, Viveka, Vairagya, Yoga, Mumukshutva, Subheccha, Satya Vicharana, Anantha Vicharana, Jnana Vicharana, Tanumanasi, Sattvapatti, Asamsakthi, Padarthabhava, Thuryaga, Jeevanmukthi. Atma is Amma.

Sai: Vedic Global Spirituality degraded to divisive cultural stage. Amma's manifestation for each, as all-stage access for cultures. Thus, each manifestation is complete Guru within that stage. Present Globalization brings together the 48 manifestations.

Venkatesha: Amma's uniqueness in 48 manifestations. 48 are variations of Venkatesha, Amma's manifestation in Kali Yuga. Putting together, these are 48 aspects of the 16 stages. This is complete big picture encompassing language, religion, culture, geography, science, spirituality, Vedas, Sri Yantra and Shodashi.

STHoola (PHYSICAL) LEVEL: Local: Vedas preserved in India, may or may not be coincidence. Sai and Venkatesha in Shirdi, Tirupati of South India. So, temples in South India consisting of the 48 derived directly from Vedic principles, but perceived through various Hindu Agamas.

Global: Manifestations in various cultures grew into religions. Sacred sites, natural or constructed throughout the world.

Both are equivalent. However, local makes more sense as a Yatra, a Hajj for the Mission.

SOOKSHMA LEVEL: 48 manifestations of 16 stages represented in song. Invocation followed by 16 sections. Each with 24 syllables (Gayathri Chhandas) representing hours. All Aksharas of Vedic language covered. Vibhaktis go from 1 to 8 back to 1. Starting syllables of each line spell Shodashi Mantra. Three Kutas of 5, 6 and 4 stages, and 16th is Samashti. Three Kutas represent Rig, Yajur, Sama Vedas. Maya Bijas as 5th, 11th, 15th stages represent Atharva Veda. Song rendered in IPA alphabet with extra characters added from Tamil script, and IPA for click sounds.

TWO STAGES: Transmission of the mission.

Past: Ishwara to Jiva (my spiritual progress through the years)

Future: Jiva to Jagat (as channel for disseminating the mission)

The Sri Sai Venkatesh Hajj is a transition point.

Mapping between manifestations and shrines visited given. Essential Concept of the manifestation is given as link between the two.

Bahauallah Anantha Keerthi Bengaluru Bahai Bhawan.

Adinatha Rishabhadeva Nivrithi Marga Chikpete Digambar Temple.

Mediterranean-Atlantis Gorgon. Chennai Kalikambal Pratyangira.

Armenian Mithra - Jnanodaya Pratijna. Hong Ci Maitreya Budai.

Kazakh Koyash – Sun in Thamasya cooling mode. Chandra in Navasai.

Amerind-Andean Inti. Hrudaya Prema Jwalarupa Surya. Thiruvarur Yajnavalkya Shiva Surya.

Balkan Dzubog. Intellectual simulation. Budha in Navasai vellore.

Finnic Ukko. Trishula Ayudha. Kalikambal temple Chennai.

Burusho Boyo. Remove obstacles. Shani in Navasai Vellore.

Caucasus Dela Elyr Nykha Swasti Jeevadhaatha Nava Vruksha , Nav Sai Temple, Pallikonda

Levant Jehovah Sefirot. Dharma Vardhana Saguna. Bengaluru Chabad Lubavitcher.

Eshwari – Meenakshi Klyanam, Kalikambal temple.

Ganesha. Traya Gunaatheetha Pranava. Indalur Vishwaksena.

Sarva Vidya - Sai Venkatesh

Kala Bhairava Shad Sampatti Ashtanga Yoga Thiruvarur Adi Bhairava.

Niger-Congo Gye Nyame Ogun path to Turiya Nemili Veerabhadra

MesoAmerica Kukumatz Quetzalcoatl. Oordhva Adhara Charam. Thiruparkadal Garuda.

Subrahmanya. Guruguha Mumukshutva. Valasarawakkam Venkata Subramania.

Greece Apollo Kouros. Leela Manamohana Kendra. Secunderabad Vittaleswara Venkatadri.

Celtic-Germanic Danu Triskele. Sattva Rajasa Tamasa Traya Tridevi, Chennai Kalikambal koil

Yakut Azysyt. Tree of life. thiruvallangadu kalpavriksha.

Roman path to God. Navasai Parikrama. Vellore.

Micro-Melanesia Afekan. Sahasrapaath Gavipuram Bhuja Pralaya Veerabhadra

Yazidi Melek Taus – Peacock Angel. Shanmukha on peacock Thiruvarur.

Romani Chakra – wheel of time. Sudarshana Oppiliappankoil.

Hittite Arinna. Physical aspect of sun. Angaraka in Navasai.

AustroAsia Dao Mau Thorani. Annapoorna Bhumidevi. Oppiliappankoil Bhumidevi

Ossetian Xucau. Fire form creator God. Lingodbhava Thiruvarur.

Arabia Allah. Ekaakini. Thiruvattaru Thiru Allah Adi Keshava.

Fulani Geno. Eternity. Achaleshwara Thiruvarur.

Persia Ahura Mazda Agni Roopa Medha Mylapore Sai Dhuni

Surya Narayana. Desha Kaala Atheetha Leela. Domaluru Suryanarayana.

Pancha Bhuthas – Panchamukha Vishwakarma Thiruvarur.

KhoiSan Tora Nlari. Savikalpa Samadhi Ananda. Mambalam Kodanda Rama.

Pygmy Tore. Forest form of God. Sthala Vriksham Fig tree. Selu.

Nilo-Saharan Amun Ankh Sharanagathi Hasta Oppiliappankoil Oppiliappan.

Bamileke Nsi. Elephant mask. Ganesha in Gayatri temple Bangalore.

Australia Wuagyl Ngalyod. Kundalini Roopa Anantha Sesha Naga. Oppiliappankoil Ooragam Vighraha.

Tibet-Burma Kunzang Gyalwa Dupa. Avyaaja Karuna Moorthi Hong Ci Guanyin Avalokiteshwara

Yenisei-Dene Dzil Diyini Diigosini. Chatur Veda Parvatha Rishi. Meru Shikhara, Pallikonda Navasai Mandir.

Japonic Mitsu Tomoe. De yuan tao temple Villivakkam.

Mongol Tengri. Expansive blue God. Kanchi Ulagalandan in Oppiliappankoil.

Andaman Pulga. Swapna nibha Shaasana. Jillelaguda Matsya Linga Harihara.

Buddha Dharmakaya Brahma Satya Vicharan Bengaluru Mahabodhi Vihara

Dogon Nommo. Fish star form. Meenakshi Thiruvarur Gopuram.

Sumero-Mesopotamia Inanna Ishtar. Prakriti Ashtavarga Savikaara. Domaluru Vaishnavi Narayani.

Malagasy Babakoto. Vidya Pradha Pitru Roopa. Thirukodikkaval Yama Dharma.

Berber Tannit – Rain Goddess. Mariamman Thiruvarur.

Tai-Kadai Bu Luotuo Prajapathi Brahma Thiruvarur Vishwakarmeshwara Brahma

Zealandia-Polynesia Atua. Samsara Moksha Dvandvam. Rahu Kethu in Navasai.

Chinese Tao Yin Yang. Purusha Prakriti. Villivakkam De Yuan Tao temple.

Caribbean Atabey. Vishvagarbha Srishti Adi Shakti Nemili Bhadrakali Mahamaya

Amazonian Tupa Akshara Roopa Nada Brahmam Yeshwanthapur Tripada Gayathri

Durga Sarva Keerthi Anantha Shakthi. Chempazhanthy Bala Durga

Ek Omkar Niraakaara Adi Guru Sarvatma. Kallidaikurichi Kulathur Sri Yantra Sastha.

Siou-Algic Gitchi Manitou. Sahasrashirsha Sahasraksha. Vishwabrahman, Chennai Kalikambal Koil.

Somali Waaq. Bull Creator God. Standing Nandi Thiruvarur.

Turkic Anesa. Motherly love. Neelotpalamba Thiruvarur.

Sibero-Eskimo Silla Inukshuk. Sarva Vyaapi. Soma Vighraha, Indalur.

Anjaneya. Nidhidhyasana Samadhi Mukhya Prana Secunderabad Panchamukha Hanuman

Samoyedic Num. Giving physical aspect of sun. Shukra in navasai.

Philippine Apo Na. Mountain God. Thiruvarur Arunachaleshwara.

Slavic Perun. Ishwara Lila Brahmanda Aditya. Navagraha, Pallikonda Navasai Mandir.

Basque-Iberia Mari. Jagat Lila Renuka Nagamba Saadapet Sudarshan Naga Samedha Venkata Narasimha

Baltic Saule. Giving in Intellectual aspect. Guru in Navasai.

Bantu Mulungu. God removing troubles. Badri Narayana Hari. Domlur Surya temple.

Hmong-Mien Saub. Jiva Lila Pindanda Devata Dhanvantari, Yeshwanthapur Gayathri Devasthanam.

Vishnu. Prakruti Sankalpa Sattvapatti. Bengaluru Kote Venkataramana Dashavatara Roopa.

Yeshu Krishta. Ahankarahara Asamsakthi Neendakara Chapel of Peace.

Shiva. Sarvam Brahmam Padarthabhava. About Thiruparkadal Doosheshwara Prasanna Venkatesha.

SatChitAnandam. Selu Venkusa Babasaheb.

Sri Vidya Lalitha Ambika. Jeevanmukthi Leela Rasika.

Samashti Guru Roopa: Secunderabad Sai Baba

Samashti Thiru Roopa: Nemili Bala Tripurasundari.

Itinerary (June 3 - June 13, 2018):

S: Start from Swamimalai (home). Bus to Kumbakonam to Thirukodikaval. Walk to Thiruvalangadu. Bus to Mayiladuthurai to Indhalur. Bus to Kumbakonam to Oppiliappankoil. Train from Kumbakonam to Trichy to Chengalpattu.

M: Bus to Kanchipuram to Kaveripakkam. Auto to Thiruparkadal. Bus to Nemili. Walk to Bala Tripurasundari and Veerabhadra temple. Share Auto to Arakkonam. Train to Katpadi. Bus to Vellore to Nava Sai Mandir. Train to Bangalore.

T: Metro to Yeshwanthpur. Metro to Indiranagar. Bus/Auto to Domlur. Metro to KR Market Kote Venkataramana. Metro to Majestic. Walk to Freedom Park Mahabodhi Vihara. Metro to Cubbon Park. Bus to Coles Road Bahai. Bus to Vidhan Soudha. Metro to Majestic. Train to Tirunelveli.

W: Bus to New Bus Stand to Kallidaikurichi. walk to Kambangudi Kulathur. Bus to Tirunelveli. Train to Marthandam. Bus to Thiruvattaru. Bus to Trivandrum.

T: Bus to Chempazhanthu Anyoor. Train to Kollam. Car to Neendakara. Train to Bangalore.

F: Bus to Gavipuram. Metro to Majestic. Walk to Chikpet. Metro to Trinity. Walk to Hong Ci. Bus to Richmond Circle Chabad Lubavitch. Walk to MG Road. Metro to Majestic. Train to Secunderabad

S: Train to Malakpet. Auto to Jillelaguda Train to Secunderabad Walk to Vittaleshwara, Panchmukhi Hanuman. Train to Aurangabad

S: Train to Selu. Walk to Babasaheb Venkusa. Train to Nanded. Train to Secunderabad.

M: Metro to Paradise. Walk to Ramgopalpet Sai Baba. Back to Secunderabad. Train to Chennai.

T: Bus to Valasarawakkam. Bus to T.Nagar. Walk to Mambalam. Train to Saidapet to Beach Kalikambal to Mylapore to Park to Villivakkam to Park to Egmore. Train to Thiruvarur.

W: Walk to Thyagaraja Temple. Bus to Kumbakonam to Swamimalai.



||Om Sri Sai Venkateshaya Namah||