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SANDHI

HISTORICAL EVOLUTION OF INDIA

An assessment of ideals of the Aryan Civilization



A synoptic collation of research by
SandHI Summer Interns of 2015

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

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S A N D H I

HISTORICAL EVOLUTION OF INDIA

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A Tribute



The book attempts to re-explore the immense significance of the historical arrival of Swami Vivekananda on the world stage, on the occasion of the Parliament of Religions in Chicago, on this day of September 11, 1893; to take over the universal mind of humanity...

SandHI, a Science and Heritage Initiative of IIT Kharagpur

(A mega-initiative sponsored by the MHRD, Government of India)

will present an Exhibition on

- Language Systems - Music and Cognition - Meditation and Therapy - Iconography
History of Science and Technology & Science of Indian History (Myth and Truth)
Geo-Exploration, Coastal Heritage, Urban Design and Engineering
Special Mega Project: Varanasi - End-of-life Care - Generosity
Creative Economy and Regeneration -

September 11 - 13, 2015

at

Indian Council of Cultural Relations (ICCR)

9A, Ho Chi Minh Sarani, Kolkata



S A N D H I



“The going forth of Vivekananda, marked out by the Master as the heroic soul destined to take the world between his two hands and change it, was the first visible sign to the world that India was awake not only to survive but to conquer.”

Sri Aurobindo



“It is probably true quite generally that in the history of human thinking the most fruitful developments frequently take place at those points where two different lines of thought meet.”



Werner Heisenberg

Preamble

The Department of Higher Education, Ministry of Human Resources Development, Government of India has steered a series of national and regional level workshops, for launching pilot projects, for creating centers of excellence based on a spirit of inter and intra-institutional convergence promoting research, development, innovation (RDI) initiatives. The idea is to pro-activate and augment a 'people-centric' course of India's future growth plans, strategies and development programs based on clusters of projects executed by IITs and other allied institutes.

Addressing the aforesaid course, the Indian Institute of Technology Kharagpur has made a distinctive and forerunning headway for creating and initiating a cluster of projects under the 'Science Heritage Interface' scheme of Government of India. Other IITs and Institutes of national importance have also followed.

The present report is one of many to represent the headway. The report represents the effort to forward the vision of IIT Kharagpur, which will serve both as an umbrella to plan, design and activate a 'people-centric' ground reality for a cluster of projects. The vision is based on the twin foundations of Indo-centric theme and an operational-cum-organizational structure of scientific exploration, at the same time. These projects represent inter and intra-institutional convergence of research, development, innovation (RDI) initiatives. The vision is called 'SANDHI'. 'SANDHI' literally means convergence and confluence. 'SandHI' is also the platform of inter-disciplinary and inter-institutional assimilation. SandHI is the acronym of 'Science-Heritage Initiative'.

Under 'SANDHI', there are four levels of activity: First, a deeper level of philosophical research based on scientific exploration; Secondly, an outward recovery of Indian heritage systems based on the epistemological domain of Indian science and technology driven traditions; thirdly, a re-positioning of traditional community planning and engineering systems based on the Indian ethos; leading to a fourth and demonstrative level, i.e., a pro-active resurrection of traditional knowledge systems of India based on creative economy regeneration and marketing in various corners of reality – concerning the people, their economy, their folk and the all-round liveability of the surrounding they belong to.



The background

To best address these levels, SandHI has three bandwidths of projects. First, it has a deeper level, where deep science and heritage interface based projects have been designed. Secondly, there are large scale Geo-exploratory and geo-technical riparian based paleo-hydrological investigations; epigraphic investigation and iconographic-archaeological interpretations; and contemporary application/tourism revival based projects, which are also inclusive of a very Mega iconic project on 'Varanasi', the living and sustainable river-based urban habitat of India and the world for over 3500 years or more. Third and finally, SandHI has formulated a set of creative economic generation projects of which one is to re-explore the application and design of terracotta technology as a building material based on a pilot project in Kumartuli belt, Kolkata.

Variety and network of projects – exploration through cooperative inquiry

Constituting Level one, which is an agglomeration of Deep science and heritage interface based projects, there are:

1. Two language based projects
2. Two music projects and
3. Two iconography-shape grammar driven heritage and historical exploration projects

The two language projects are for developing a scientific rationale of the huge and abstruse ambit of the Indo-European Language Systems (IELS) applying a range of approaches from computational linguistic algorithms (lab-tested) to cognitive geo-spatial and ethnographic pool-mapping techniques (empirical-graphic) that are based on the trans-personal edifice of 'Hierarchy of needs'; and also a sonic (etymologic/articulation based) matching innovations (fresh approach) technique using signal processing software applied on the basis of *varnamala* (the hierarchy of vowels and consonants based on the sonic etymologic of the word (*sabda*) and its meaning or cognition/recognition pattern (*artha*).

The two music projects aim at Decoding and Exploring Ancient Classification of Indian Classical Music through Machine Learning Methods and Audience

Response. The first project looks at the decoding of Ancient Classifications of Indian Ragas and the second project aims at a deep evaluation of Audience Response to Indian Classical Music Classification.

The two iconographic projects are trying to establish a scientific correlation between 2-D footprints of the built environment (Architecture) based on a Ecologic-Climatic construct and anthropocentric patterns and establish a relationship with 3-D systems of iconographic patterns or 'footprints' called 'Mandala' as evident in designs of Temple, Sacred Precincts and General Settlement forms in Indian architecture and also in regions and countries beyond India.

The second Iconography driven project is attempting to establish linkages between iconographic re-interpretation of architecture and engineering patterns of Vedic and Buddhist periods based on:

1. Identification of underlying common patterns: built-forms; shape grammar; principles of design; styles and continuity embedded in the two layers
2. Earmarking a methodology to establish the continuity and re-interpretation of Indian history

Additionally there are four other deep exploratory projects namely:

1. The Effect of Meditation, Pranayam and Meditative Sounds on the Cognitive and Emotional Performance of Human Brain: a study using an integrated signal and image-based approach
2. Improving 'End-of-Life Care' (EoLC) for the Elderly by Integrating Indic Perspectives on Ageing and Dying called '*Vanaprastha/Sannyasamarga* leading to '*Moksha*'
3. Reconfiguring Dāna (Generosity) as a new Institutional Financial Mechanism for Social Enterprises based on Indic perspectives
4. Exploring historical Evidence, myth and geophysical Modelling to Assess the Tectonic Movement and Risks Associated with the Odisha Coastal 'Heritage' Belt

The interesting part is the relative association and convergence of various projects, like Language and Music – sharing a system of notations, syntax and



grammar; Music and Meditation – converging to a common platform of therapeutic objective and cathartic healing; Iconography and Music – extracting common patterns of audience-response and audience-demand-systems and so on. To aim is to arrive at the spirit of grand thought, the grand convergence. This is SandHI.

The present report is a wonderful work of a team of brilliant minds. They are a collation of summer interns of the year 2015. They are from IIT Kharagpur and IIT Roorkee. They are the works of young vibrant minds - fresh, open, unadulterated and free. Each piece has been presented in a format differing slightly from the other, keeping the spirit of an open-ended exploration.

Sixteen micro research pieces have been stitched together. Together they portray an aftermath, a running thought that follows a seminal and forerunning work of Swami Vivekananda entitled 'Historical evolution of India'. A detailed description of the masterpiece has been earmarked as the Foreword. The foreword provides the ambit and the overarching gamut under which these micro thought pieces co-exist

and re-create a harmony, respect and renewed confidence in the depths of the very history of our motherland. To specially note are the insertion pages that are positioned before every micro researched piece. In each there is an excerpt from the masterpiece that foreruns the spirit of the micro research conducted by a single or a group of student interns within a short span of two summer months of 2015.

The report is therefore a tribute to the historic event that took place on September 11, 1893. It is an event that has changed the world and also an event that marked the beginning of a recovery of our ancient civilization, so that she speaks out her latest creative word – for all human people; thereby marking the beginning of a new age – a golden period of the humankind.

The idea and its Great Spirit are evident in the following words and in the subsequent lines of World Poet Rabindranath Tagore, forwarded in the following pages:



*India of the ages is not dead nor has She spoken her last creative word;
She lives and has still something to do for herself and the human peoples.
And that which must seek now to awake is not an Anglicized oriental
people, docile pupil of the West and doomed to repeat the cycle of the
Occident's success and failure, but still the ancient immemorial Shakti
recovering Her deepest self, lifting Her head higher toward the supreme
source of light and strength and turning to discover the complete
meaning and a vaster form of her Dharma.*



Shri Aurobindo

*Arya: A Philosophical Review (January 1921)
'The Foundations of Indian culture'*

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ॐ नमो भगवते

Om Namō Bhagavate Ramakrishnaya
नासतःसत्जायते — Existence cannot be produced by non-existence

Foreword: Historical Evolution of India
(Based on the works of Swami Vivekananda)

Joy Sen, Principal Investigator, SandHI



Theme of the Foreword



“

It may be debatable whether material history is the expression of an original idea; but it is an indubitable fact that spiritual history is always so. 'It is of the One existence that yearning hearts speak in diverse ways' - has said a Vedic seer (RV: 1.164.46); and this is true not only in an abstract way, but in a concrete form also.

Like the mystic Asswattha tree of the Upanishad, [the Bodhi Tree] 'with its roots above and the branches below', the Vedic tradition, in a broad sense, it stands at the very source of almost all forms of spiritual cults. And the interpretation of this tradition can be attempted with best results if we do not place the Vedas on the isolated heights of the past, but with a total (complete) vision of the present retrace our steps to the roots discovering, with a penetrating insight, the links at every steps.

”

Sri Anirvan
Vedic Exegesis

'The Cultural Heritage of India', Volume one,
RMIC, Kolkata (2001)



Bharat Tirtha

Rabindranath Thakur

*No one knows at whose call
How many streams of humanity
Came from where, in irresistible currents,
And lost their identity in this (India's) ocean (of men).
Here Aryan, hero non-Aryan,
Here Dravid and Cheen,
Hordes of Saka, Huna, Pathan and Mughal
Became merged in one body.
The door has opened in the West today,
All bring presents from there,
They will give and take, mix and mingle,
Will not turn back—
In this ocean's shores of India's great Humanist realization!*

....

*Come O Aryan, come, non-Aryan,
Hindu-Mussalman,
Come, come today, you English,
Come, come, O Christian.
Come, Brahmana, purifying your mind, [17]
Clasp the hands of all,
Come, O ye outcasted and 'fallen',
May the burden of all ignominy
Be taken off your backs.
Come, hasten to the Mother's anointing;
For the auspicious vessel has not yet been filled
With water from all shrines,
Purified by the touch of all
(castes, creeds and classes).
In this ocean's shores of India's great Humanist realization!*



(Bharatmata – a painting by Abanindranath Thakur)



The Complete Aryan Ideal: The Indian Pilgrimage The Universal Melting Pot of the Aryans and the Non-Aryans



In the poem Bharat-tirtha, World Poet Rabindranath Tagore envisioned an India imbued with the noblest of her ideals: that of universal tolerance, universal acceptance, and universal exchange. The poem depicts the universal soul of Indian philosophy, culture, tradition. The poem is the string of garland around which the flowers of poesy is imitated and established successfully. Every flower is a truth-realization. The garland is the sutra of eternal time.

The World Poet hails motherland as the land of great births of Greatest of Sages and Maha-purushas. According to him, the land is so pious and honourable to be worshipped whole heartedly. India is the land which welcomes every individual human race, tribe with same warmth of heart. This is the ideal of the Aryan Sages (Arya Rishis) of eternal truth-realizations (Vedas).

Tagore calls for universal brotherhood and complete spiritual awakening from bondage, tyranny. Until and unless the soul of the individual, the soul of India is awakened, it cannot resist attacks on its culture.

We know that Tagore was a believer in a transparent, interactive, dialogic world, given to a deep sense of universal sympathy, generosity and mutuality, and in which nations would not be parochial, xenophobic-centripetal but poised towards a morally, spiritually enlightened community or confederation of nations through the espousal of centrifugal all-assimilating outlook, multilateral imagination and the principle of universality. The realization got embodied in the beautiful lyric called Bharat-tirtha, meaning THE GREAT INDIAN PILGRIM – THE GREAT INDIAN MELTING POT. This is the ideal of the Aryan Sages (Arya Rishis) of eternal truth-realizations (Vedas). India is evolving to bloom as that universal Lotus of all humanity.

- Developed by Dwaipayana Mitra



Recycling an ancient beginning

Non-existence can never be the cause of what exists. Something cannot come out of nothing. That the law of causation is omnipotent and knows no time or place when it did not exist is a doctrine as old as the Aryan race, sung by its ancient poet-seers, formulated by its philosophers, and made the corner-stone upon which the Hindu (Indian) man even of today builds his whole scheme of life.

There was an inquisitiveness in the race to start with, which very soon developed into bold analysis, and though, in the first attempt, the work turned out might be like the attempts with shaky hands of the future master-sculptor, it very soon gave way to strict science, bold attempts, and startling results.

Its boldness made these men search every brick of their sacrificial altars; scan, cement, and pulverise every word of their scriptures; arrange, re-arrange, doubt, deny, or explain the ceremonies. It turned their gods inside out, and assigned only a secondary place to their omnipotent, omniscient, omnipresent Creator of the universe, their ancestral Father-in-heaven; or threw Him altogether overboard as useless, and started a world-religion without Him with even now the largest following of any religion.

The science of geometry and the arrangement of bricks

It evolved the science of geometry from the arrangements of bricks to build various altars, and startled the world with astronomical knowledge that arose from the attempts accurately to time their worship and oblations.

The science of mathematics, chemistry, and music

It made their contribution to the science of mathematics the largest of any race, ancient or modern, and to their knowledge of chemistry, of metallic compounds in medicine, their scale of musical notes, their invention of the bow-instruments — (all) of great service in the building of modern European civilisation.

The science of building up the child-mind

It led them to invent the science of building up the child-mind through shining fables, of which every child in every civilised country learns in a nursery or a school and carries an impress through life.

The science of language and number systems

Behind and before this analytical keenness, covering it as in a velvet sheath, was the other great mental peculiarity of the race — poetic insight. Its religion, its philosophy, its history, its ethics, its politics were all inlaid in a flower-bed of poetic imagery — the miracle of language which was called Sanskrit or "perfected", lending itself to expressing and manipulating them better than any other tongue.

The aid of melodious numbers was invoked even to express the hard facts of mathematics.

The SandHI of analytical power and poetic visions

This analytical power and the boldness of poetical visions which urged it onward are the two great internal



causes in the make-up of the Hindu (Indian) race. They together formed, as it were, the keynote to the national character. This combination is what is always making the race press onwards beyond the senses — the secret of those speculations which are like the steel blades the artisans used to manufacture — cutting through bars of iron, yet pliable enough to be easily bent into a circle.

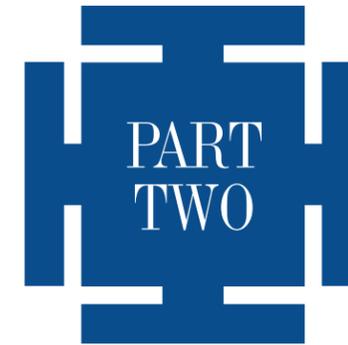
They wrought poetry in silver and gold; the symphony of jewels, the maze of marble wonders, the music of colours, the fine fabrics which belong more to the fairyland of dreams than to the real — have back of them thousands of years of working of this national trait.

Arts and sciences, even the realities of domestic life, are covered with a mass of poetical conceptions, which are pressed forward till the sensuous touches the super-sensuous and the real gets the rose-hue of the unreal.

The earliest glimpse of the Aryan race

The earliest glimpses we have of this race show it already in the possession of this characteristic, as an instrument of some use in its hands.

Many forms of religion and society must have been left behind in the onward march, before we find the race as depicted in the scriptures, the Vedas.....



The subsequent glimpse of the Aryan race

Many forms of religion and society must have been left behind in the onward march, before we find the race as depicted in the scriptures, the Vedas.

An organised pantheon, elaborate ceremonials, divisions of society into hereditary classes necessitated by a variety of occupations, a great many necessities and a good many luxuries of life are already there.

The impact of climate on Indian culture and the making of civilization

Most modern scholars have agreed that surroundings as to climate and conditions, purely Indian, were not yet working on the race.

Onwards through several centuries, we come to a multitude surrounded by the snows of Himalayas on the north and the heat of the south — vast plains, interminable forests, through which mighty rivers roll their tides. We catch a glimpse of different races — Dravidians, Tartars, and Aborigines pouring in their quota of blood, of speech, of manners and religions. And at last a great nation emerges to our view — still keeping the type of the Aryan — stronger, broader, and more organised by the assimilation. We find the central assimilative core giving its type and character to the whole mass, clinging on with great pride to its name of "Aryan", and, though willing to give other races the benefits of its civilisation, it was by no means willing to admit them within the "Aryan" pale.

The Indian climate again gave a higher direction to the genius of the race. In a land where nature was propitious and yielded easy victories, the national mind started to grapple with and conquer the higher problems of life in the field of thought.

Devolution and social entropy

Naturally the thinker, the priest, became the highest class in the Indian society, and not the man of the sword. The priests again, even at that dawn of history, put most of their energy in elaborating rituals; and when the nation began to find the load of ceremonies and lifeless rituals too heavy — came the first philosophical speculations, and the royal race was the first to break through the maze of killing rituals.

A tripartite devolution of the Indian system of society

- *On the one hand, the majority of the priests impelled by economic considerations were bound to defend that form of religion which made their existence a necessity of society and assigned them the highest place in the scale of caste;*

- *On the other hand, the king-caste, whose strong right hand guarded and guided the nation and who now found itself as leading in the higher thoughts also, were loathed to give up the first place to men who only knew how to conduct a ceremonial.*

- *There were then others, recruited from both the priests and king-castes, who ridiculed equally the ritualists and philosophers, declared spiritualism as fraud and priest craft, and upheld the attainment of material comforts as the highest goal of life.*

The fourth branch of Indian society – why?

- *The people, tired of ceremonials and wondering at the philosophers, joined in masses the materialists.*

This was the beginning of that caste question and that triangular fight in India between ceremonials, philosophy, and materialism which has come down unsolved to our own days.



PART THREE

The continuous unsolved problem – who is Aryan?

This was the beginning of that caste question and that triangular fight in India between ceremonials, philosophy, and materialism which has come down unsolved to our own days.

The first solution: the lessons from the Gita

- origin, continuity and discontinuity

The first solution of the difficulty attempted was by applying the eclecticism which from the earliest days had taught the people to see in differences the same truth in various garbs. The great leader of this school, Krishna — himself of royal race — and his sermon, the Gîtâ, have after various vicissitudes, brought about by the upheavals of the Jains, the Buddhists, and other sects, fairly established themselves as the "Prophet" of India and the truest philosophy of life.

Though the tension was toned down for the time, it did not satisfy the social wants which were among the causes — the claim of the king-race to stand first in the scale of caste and the popular intolerance of priestly privilege. Krishna had opened the gates of spiritual knowledge and attainment to all irrespective of sex or caste, but he left undisturbed the same problem on the social side. This again has come down to our own days, in spite of the gigantic struggle of the Buddhists, Vaishnavas, etc. to attain social equality for all.

Modern India admits spiritual equality of all souls — but strictly keeps the social difference.

The second solution: the way of Shaky Muni

Thus we find the struggle renewed all along the line in the seventh century before the Christian era and finally in the sixth, overwhelming the ancient order of things under Shâkya Muni, the Buddha. In their reaction against the privileged priesthood, Buddhists swept off almost every bit of the old ritual of the Vedas, subordinated the gods of the Vedas to the position of servants to their own human saints, and declared the "Creator and Supreme Ruler" as an invention of priestcraft and superstition.

But the aim of Buddhism was reform of the Vedic religion by standing against ceremonials requiring offerings of animals, against hereditary caste and exclusive priesthood, and against belief in permanent souls. It never attempted to destroy that religion, or overturn the social order. It introduced a vigorous method by organising a class of Sannyâsins into a strong monastic brotherhood, and the Brahmavâdinis into a body of nuns — by introducing images of saints in the place of altar-fires.

It is probable that the reformers had for centuries the majority of the Indian people with them. The older forces were never entirely pacified, but they underwent a good deal of modification during the centuries of Buddhist supremacy.

Reverting to the Aryan ideal: later Buddhist reformation

- a counter response called Buddhism

In ancient India the centres of national life were always the intellectual and spiritual and not political. Of old, as



now, political and social power has been always subordinated to spiritual and intellectual. The outburst of national life was around colleges of sages and spiritual teachers. We thus find the Samitis of the Panchâlas, of the Kâshyas (of Varanasi), the Maithilas standing out as great centres of spiritual culture and philosophy, even in the Upanishads. Again these centres in turn became the focus of political ambition of the various divisions of the Aryans.

The great epic Mahâbhârata tells us of the war of the Kurus and Panchalas for supremacy over the nation, in which they destroyed each other. The spiritual supremacy veered round and centred in the East among the Magadhas and Maithilas, and after the Kuru-Panchala war a sort of supremacy was obtained by the kings of Magadha.

The Buddhist reformation and its chief field of activity were also in the same eastern region; and when the Maurya kings, forced possibly by the bar sinister on their escutcheon, patronised and led the new movement, the new priest power joined hands with the political power of the empire of Pataliputra. The popularity of Buddhism and its fresh vigour made the Maurya kings the greatest emperors that India ever had. The power of the Maurya sovereigns made Buddhism that world-wide religion that we see even today.

The exclusiveness of the old form of Vedic religions debarred it from taking ready help from outside. At the same time it kept it pure and free from many debasing elements which Buddhism in its propagandist zeal was forced to assimilate.

This extreme adaptability in the long run made Indian Buddhism lose almost all its individuality, and extreme desire to be of the people made it unfit to cope with the intellectual forces of the mother religion in a few centuries. The Vedic party in the meanwhile got rid of a good deal of its most objectionable features, as animal sacrifice, and took lessons from the rival daughter in the judicious use of images, temple processions, and other impressive performances, and stood ready to take within her fold the whole empire of Indian Buddhism, already tottering to its fall.

And the crash came with the Scythian invasions and the total destruction of the empire of Pataliputra.

Reverting to the Aryan ideal

- later Brahminical reformation

The invaders, already incensed at the invasion of their central Asiatic home by the preachers of Buddhism,

found in the sun-worship of the Brahmins a great sympathy with their own solar religion — and when the Brahminist party were ready to adapt and spiritualise many of the customs of the new-comers, the invaders threw themselves heart and soul into the Brahminic cause.

Then there is a veil of darkness and shifting shadows; there are tumults of war, rumours of massacres; and the next scene rises upon a new phase of things.

The empire of Magadha was gone. Most of northern India was under the rule of petty chiefs always at war with one another. Buddhism was almost extinct except in some eastern and Himalayan provinces and in the extreme south and the nation after centuries of struggle against the power of a hereditary priesthood awoke to find itself in the clutches of a double priesthood of hereditary Brahmins and exclusive monks of the new regime, with all the powers of the Buddhist organisation and without their sympathy for the people.

The third solution: the ways of Shankara and Ramanujam

- a counter response called 'Hinduism'

A renascent India, bought by the velvet and blood of the heroic Rajputs, defined by the merciless intellect of a Brahmin from the same historical thought-centre of Mithila, led by a new philosophical impulse organised by Shankara and his bands of Sannyasins, and beautified by the arts and literature of the courts of Mâlavâ — arose on the ruins of the old.

The task before it was profound, problems vaster than any their ancestors had ever faced. A comparatively small and compact race of the same blood and speech and the same social and religious aspiration, trying to save its unity by unscalable walls around itself, grew huge by multiplication and addition during the Buddhist supremacy; and (it) was divided by race, colour, speech, spiritual instinct, and social ambitions into hopelessly jarring factions. And this had to be unified and welded into one gigantic nation. This task Buddhism had also come to solve, and had taken it up when the proportions were not so vast.

So long it was a question of Aryanising the other types that were pressing for admission and thus, out of different elements, making a huge Aryan body. In spite of concessions and compromises, Buddhism was eminently successful and remained the national religion of India. But the time came when the allurements of sensual forms of worship,



indiscriminately taken in along with various low races, were too dangerous for the central Aryan core, and a longer contact would certainly have destroyed the civilisation of the Aryans.

Then came a natural reaction for self-preservation, and Buddhism and separate sect ceased to live in most parts of its land of birth.

The reaction-movement, led in close succession by Kumârila in the north, and Shankara and Râmânûja in the south, has become the last embodiment of that vast accumulation of sects and doctrines and rituals called Hinduism...

The fourth solution: the Gupta period and aftermath

The reaction-movement, led in close succession by Kumârila in the north, and Shankara and Râmânûja in the south, has become the last embodiment of that vast accumulation of sects and doctrines and rituals called Hinduism.

For the last thousand years or more, its great task has been assimilation, with now and then an outburst of reformation. This reaction first wanted to revive the rituals of the Vedas — failing which, it made the Upanishads or the philosophic portions of the Vedas its basis. It brought Vyasa's system of Mimâmsâ philosophy and Krishna's sermon, the Gita, to the forefront; and all succeeding movements have followed the same. The movement of Shankara forced its way through its high intellectuality; but it could be of little service to the masses, because of its adherence to strict caste-laws, very small scope for ordinary emotion, and making Sanskrit the only vehicle of communication. Ramanuja on the other hand, with a most practical philosophy, a great appeal to the emotions, an entire denial of birthrights before spiritual attainments, and appeals through the popular tongue completely succeeded in bringing the masses back to the Vedic religion.

Reverting to the Aryan ideal

- many sages and many ways: early period

The northern reaction of ritualism was followed by the fitful glory of the Malava empire. With the destruction of that in a short time, northern India went to sleep as it were, for a long period, to be rudely awakened by the thundering onrush of Mohammedan cavalry across the passes of Afghanistan. In the south, however, the spiritual upheaval of Shankara and Ramanuja was

followed by the usual Indian sequence of united races and powerful empires. It was the home of refuge of Indian religion and civilisation, when northern India from sea to sea lay bound at the feet of Central Asiatic conquerors.

The Mohammedan tried for centuries to subjugate the south, but can scarcely be said to have got even a strong foothold; and when the strong and united empire of the Moguls was very near completing its conquest, the hills and plateaus of the south poured in their bands of fighting peasant horsemen, determined to die for the religion which Râmdâs preached and Tukâ sang; and in a short time the gigantic empire of the Moguls was only a name.

Reverting to the Aryan ideal

- many sages and many ways: later period

The movements in northern India during the Mohammedan period are characterised by their uniform attempt to hold the masses back from joining the religion of the conquerors — which brought in its train social and spiritual equality for all.

The friars of the orders founded by Râmânanda, Kabir, Dâdu, Chaitanya, or Nânak were all agreed in preaching the equality of man, however differing from each other in philosophy. Their energy was for the most part spent in checking the rapid conquest of Islam among the masses, and they had very little left to give birth to new thoughts and aspirations. Though evidently successful in their purpose of keeping the masses within the fold of the old religion, and tempering the fanaticism of the Mohammedans, they were mere apologists, struggling to obtain permission to live.

One great prophet, however, arose in the north, Govind Singh, the last Guru of the Sikhs, with creative genius; and the result of his spiritual work was followed by the well-known political organisation of the Sikhs. We have seen throughout the history of India, a spiritual upheaval is almost always succeeded by a political unity extending over more or less area of the continent, which in its turn helps to strengthen the spiritual aspiration that brings it to being.

But the spiritual aspiration that preceded the rise of the Mahratta or the Sikh empire was entirely reactionary. We seek in vain to find in the court of Poona or Lahore even a ray of reflection of that intellectual glory which surrounded the courts of the Moguls, much less the brilliance of Malava or Vidyânagara. It was



intellectually the darkest period of Indian history; and both these meteoric empires, representing the upheaval of mass-fanaticism and hating culture with all their hearts, lost all their motive power as soon as they had succeeded in destroying the rule of the hated Mohammedans.

Away from the Aryan ideal

- the colonial invasions: early period

Then there came again a period of confusion. Friends and foes, the Mogul empire and its destroyers, and the till then peaceful foreign traders, French and English, all joined in a mêlée of fight. For more than half a century there was nothing but war and pillage and destruction.

And when the smoke and dust cleared, England was stalking victorious over the rest. There has been half a century of peace and law and order under the sway of Britain. Time alone will prove if it is the order of progress or not.

Crisis in civilization: towards the post-colonial

- the colonial hangover

There have been a few religious movements amongst the Indian people during the British rule, following the same line that was taken up by northern Indian sects during the sway of the empire of Delhi.

They are the voices of the dead or the dying — the feeble tones of a terrorised people, pleading for permission to live. They are ever eager to adjust their spiritual or social surroundings according to the tastes of the conquerors — if they are only left the right to live, especially the sects under the English domination, in which social differences with the conquering race are more glaring than the spiritual.

The Hindu sects of the century seem to have set one ideal of truth before them — the approval of their English masters.

No wonder that these sects have mushroom lives to live. The vast body of the Indian people religiously hold aloof from them, and the only popular recognition they get is the jubilation of the people when they die.

But possibly, for some time yet, it cannot be otherwise.



VEDAS - ORACLES OF COSMOLOGY, HUMAN EVOLUTION AND ETHICS



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THEME OF THE PAPER



...It led them to invent the science of building up the child-mind through shining fables, of which every child in every civilised country learns in a nursery or a school and carries an impress through life...

...This analytical power and the boldness of poetical visions which urged it onward are the two great internal causes in the make-up of the Hindu (Indian) race. They together formed, as it were, the keynote to the national character. This combination is what is always making the race press onwards beyond the senses — the secret of those speculations which are like the steel blades the artisans used to manufacture — cutting through bars of iron, yet pliable enough to be easily bent into a circle.

They wrought poetry in silver and gold; the symphony of jewels, the maze of marble wonders, the music of colours, the fine fabrics which belong more to the fairyland of dreams than to the real — have back of them thousands of years of working of this national trait.

Arts and sciences, even the realities of domestic life, are covered with a mass of poetical conceptions, which are pressed forward till the sensuous touches the super-sensuous and the real gets the rose-hue of the unreal.



Swami Vivekananda
Historical Evolution of India



Vedas-Oracles of Cosmology, Human Evolution and Ethics

Priyanka Sahoo

Abstract

The Vedas are the ultimate true source of knowledge of Human codes of conduct, ethics and evolution with a fantastic rendition of the Cosmology of the Universe. The Vedas contain the way of life and contain ancient records of various important scientific processes and events of what we call as 'modern science and technology'. Vedic literature tends to reflect the world view, spiritual preoccupations, and social attitudes of the modern world. The roots of various findings of the modern world in the field of Science can be traced back to the Vedas which was written years back. The Vedic philosophers were seers who could predict the outer sciences on the basis of study of their inner science. In this paper, the author has tried to establish a connecting link between the science and behavioural patterns of the modern world and the Veda. The fact that the scientists who are trying to prove ground breaking concepts about the Universe that have been actually seeded from the Vedic period is proven through this paper.

Keywords: Cosmology, Inner and Outer Science, Spirituality, Modern Science, Human Evolution

1. Introduction

The Vedas are among the most ancient scriptures on this planet and yet the most comprehensive in content. The Sanskrit word Veda means "knowledge, wisdom" is derived from the root vid-"to know". This is reconstructed as being derived from the Proto-Indo-European root u[eid-, meaning "see" or "know". Vedas are not books or writings that someone invented or moral codes that someone made up. They are a series of discoveries of both the inner and the outer world. They are the 'treasure troves' of spiritual knowledge covering all aspects of human life. It deals with various aspects like how to eat, how to build a bullock cart, how to build an airplane with solid fuels, how to deal with your neighbour, how to deal with the beings of the beyond and how to attain to your ultimate nature. The Vedas are like a blueprint to the existence in many dimensions, it is the code of ethics, a way of living through which one may achieve moksha (enlightenment, liberation). It provides a rational view of reality, the way of life and an entire worldview guiding people for ages and generations the spiritual way. And they will, no doubt, remain, forever, the most comprehensive and universal of all ancient scriptures. As a later compendium which were written, there are four Vedas-Rig Veda (The Book of Mantra), Yajur Veda (The Book of Ritual), Atharva Veda (The Book of Spell) and Sama Veda (The Book of Song).

2. Study approach

2.1. Vedas: A source of Cosmology

- The concept of Rita (order) which governs the universe and the quest for the truth or Satya (truth)
- The concept of the Yugas (time cycle) or the Vedic conception of division of time which is related to the life of Brahma.
- The combination of rhythm, truth and time cycle (embodiment of Tantra, Mantra and Yantra)

2.2. Vedas: A source of Human Ethics – a tangible reflection of cosmology

The concepts of:

- Ashrama: The Rhythm of Ecosystems and harmony with the divine
- Dharma: The Rhythm of Processes or the sustenance of the 'divine order'– Rita
- Karma: The Law of Causality or the Law of Action

These concepts culminating to the ethical concept of Purushartha.



Karma – The Law of Causality

While *Karma* shares with *Rita* the natural and moral aspects of the cosmic law, Karma independently and uniquely embodies within itself the concept of the Law of Causality which cannot be linked to *Rita*. Despite this *Karma* and *Rita* definitely share some common ground. It is the principle of causality that makes the doctrine of *Karma* so unique. It interconnects every voluntary and involuntary activity or event which is occurring in the universe especially to human beings.

If *Rita* is "Truth in action", *Karma* is the "Law of action". Everything we do is caused (at least in part) by what we have done in the past and in turn will cause our future actions. Thus every act, moral and otherwise, is the result of some previous act which caused it. *Karma* thus operates as a causal explanation for everything that happens, particularly to human beings.

The Transpersonal Evolution of Human Consciousness

Maslow's hierarchy of needs deals with life as a pyramid of growth or self-evolution from the lower physical needs to safety needs, need for love and belonging, need for self-esteem and then self-actualization. Self-actualization is at the top of Maslow's hierarchy of needs - attaining "human" maturity or self-actualization - and is considered a part of the humanistic approach to personality. The Yogic process of achieving *Moksha*

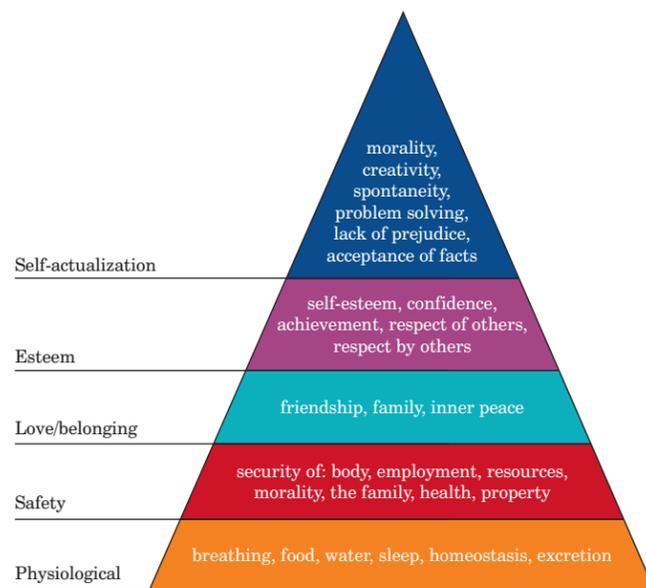


Figure 3 - Maslow's Hierarchy of Needs (Reproduced from the Yoga of Responsibility)

or the highest level of "universal perfection" includes nurturing the external characteristic as well as internal conscience which integrates at all levels to producing a 'complete whole being'. According to the Vedas, the man who follows the path of righteousness becomes one with the Supreme Soul. The ultimate aim (*Purushartha*) of every human being is to reach the highest level of consciousness. Transpersonal Perspective considers altered states of consciousness to be more highly evolved forms of consciousness. It integrates the spiritual and transcendent aspects of human experience. The concept of human evolution and the ways to attain it has been described in the Vedas in detail.

2.4. Interpretation of the Vedas

- One can see pure science in this explanation: The revolution of electrons and the spinning of the nuclei in atoms, the rotation and revolution of earth, the solar system, the galaxy, and so on are all guided from within the system and this force which gives the energy and guidance for their movement is known as Brahman. It is this same energy manifested as *Jeevaathma* in the living being which controls the heart, lungs, the liver, the blood circulation, the sensory organs, the functional organs, etc.
- Bohr and Schrödinger, the founders of quantum physics, were avid readers of the Vedic texts and observed that their experiments in quantum physics were consistent with what they had read in the Vedas. Schrodinger in his book 'Meine Weltansicht' has mentioned the following: "This life of yours which you are living is not merely a piece of this entire existence, but in a certain sense the whole; only this whole is not so constituted that it can be surveyed in one single glance." In other words, "I am in the east and the west, I am above and below, I am this entire world."
- Walter J. Moore mentioned in Schrodinger: *Life and Thought* "The unity and continuity of Vedanta are reflected in the unity and continuity of wave mechanics." This is entirely consistent with the Vedic concept of All in One.
- Ideas regarding a cyclic behaviour of the universe have also been proposed by prominent physicists like Sir Roger Penrose and Paul Steinhardt. Vedic cosmology also states that within the lifespan of the universe, there are periodic partial devastations of the universe. The Vedic predictions about the life of the universe which is to the tune of some billions of years corresponds approximately to the scientifically data calculated by the cosmologists and physicists. We can thus begin to see the potentiality of Vedic cosmology in creating a bridge between science and religion.



4. Conclusion

4.1. Major findings

- The Vedic systems have always focused on raising human perception, not on raising human knowledge.
- The Vedic theories and mantras have long time back already explained the principle of various scientific theories involving biological sciences, chemistry, physics, mathematics, etc. explain the theories of electromagnetism, aerodynamics, astrophysics, quantum physics, social sciences, etc.
- The Vedas teach that we are more than physical bodies operating according to the laws of physics and chemistry. We, the eternal conscious self (*Atma*), are inherently connected to the greater whole (*Paramatma*), and this eternal inherent connection is totally transcendental to matter.
- All living entities (*Atmas*) have the power to recognize the *Paramatma* within them. The Vedas teach us how to do it. Similarly, as living entities, we must scientifically study the great work of the evidential books of the Vedas in order to help us realize the facts of this universe and beyond, and our natural position in it.
- Veda teaches that consciousness is singular, all happenings are played out in one universal consciousness and there is no multiplicity of selves.
- In the Vedic view, there is no distinction between the outer and inner sciences. One can approach the outer sciences with an inner vision and turn them into inner sciences as well. In this way, the outer sciences can become inner sciences. That is why we find such diverse subjects from astronomy and mathematics, to music and even grammar defined as paths of Yoga or spiritual paths.
- It remains possible to approach such outer sciences as physics as spiritual paths or paths of Yoga. They can be part of an inner science of Self-realization if one uses them to connect to the universal Being and Consciousness within the world and within ourselves. Much of modern physics is heading in this direction as it looks for an underlying consciousness to explain the underlying unity of the laws of physics.
- The rhythmic power of the mantra, the power of truth and the cycle of time are instrumental in realising one's inner science.
- The philosophy of *Dharma* relates to the path of righteousness, *Karma* relates to the harmonious correlation between action and its impact and *Ashrama* relates to the soul experiencing divinity through nature by leading a simple life devoid of attachments.

- The Vedas provide the ultimate knowledge to achieve '*Moksha*' or become one with the Supreme Soul or the Ultimate Truth.

4.2. Further research

The Vedas suggest the presence of an undifferentiated form of material energy '*Pradhana*' which is believed to be the source of all forms of energy basic manifested form of grosser elements of the cosmos like the planets, asteroids, stars, etc. This is in line with the general relativity, where space is seen as an agent that can be deformed by the presence of mass-energy. Thus there is a fertile ground of research on the basic component elements with which the cosmos and its components are created and the successive manifestation of these elements

As we have briefly seen, the Vedic literatures offer amazing avenues for research in science and a broader understanding in religion. Further studies into the matter using the Vedic view may prove fruitful not only in the attenuation of the conflict between the two fields of knowledge but in the development of a scientific understanding of the process of self-realization (in other words, finding out who we really are), which is the ultimate aim of both.

4.3. Research questions

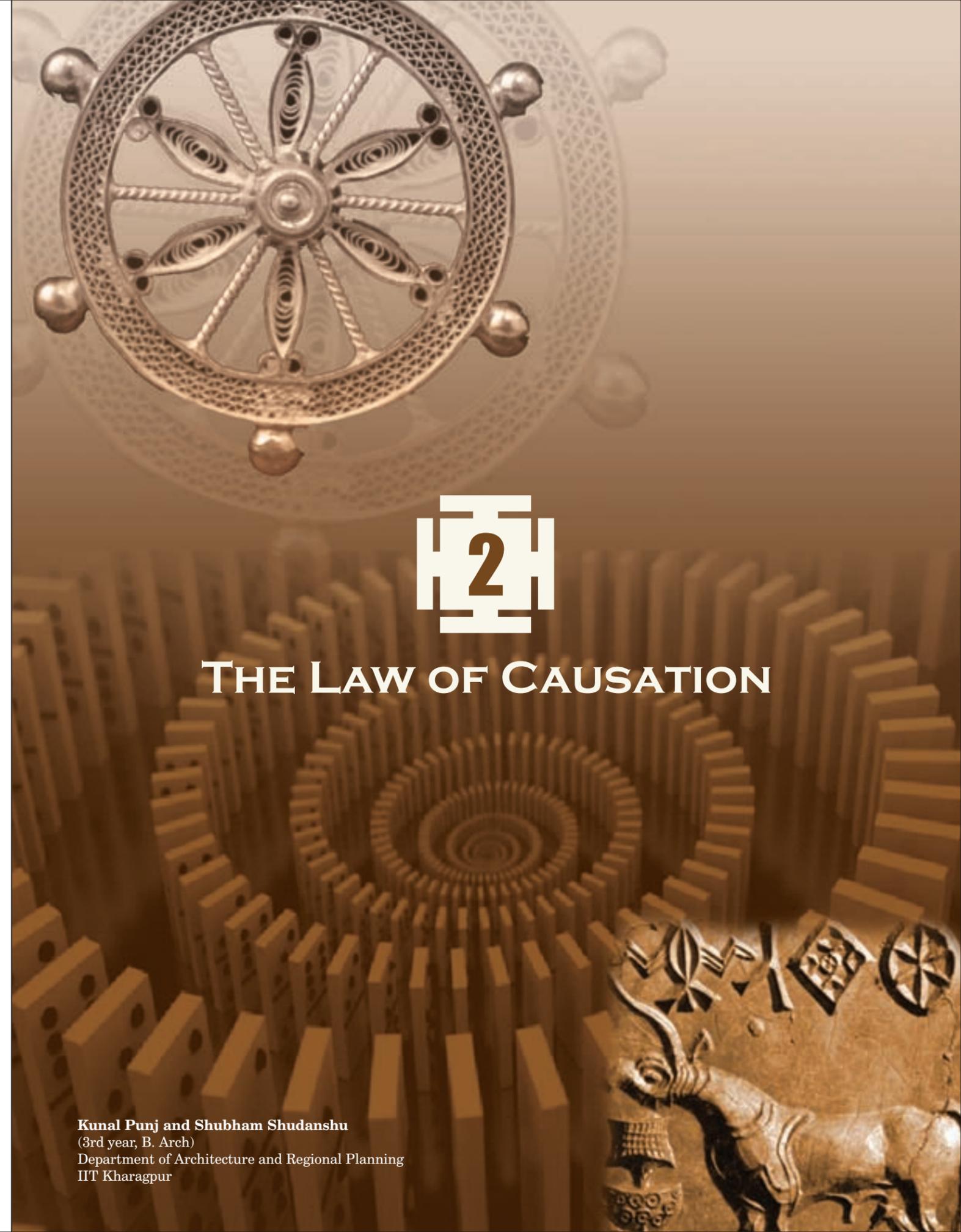
If the mention of Vedas regarding the lifespan of the universe is true then is its prediction regarding "*Pralaya*" true? Is there actually a Supreme Force or The Ultimate Energy which is believed to be 'God' which is the centre of almost all religions governing all the natural processes of the universe? As a starting point, can the triple material foundations of Ashrama - Dharma - right Karma pave a new way to community planning and settlement ethics?

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2

THE LAW OF CAUSATION

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THEME OF THE PAPER



Non-existence can never be the cause of what exists. Something cannot come out of nothing. That the law of causation is omnipotent and knows no time or place when it did not exist is a doctrine as old as the Aryan race, sung by its ancient poet-seers, formulated by its philosophers, and made the corner-stone upon which the Hindu (Indian) man even of today builds his whole scheme of life.

...Its boldness made these men search every brick of their sacrificial altars; scan, cement, and pulverise every word of their scriptures; arrange, re-arrange, doubt, deny, or explain the ceremonies. It turned their gods inside out, and assigned only a secondary place to their omnipotent, omniscient, omnipresent Creator of the universe, their ancestral Father-in-heaven; or threw Him altogether overboard as useless, and started a world-religion without Him with even now the largest following of any religion.



Swami Vivekananda
Historical Evolution of India



The Law of Causation

Kunal Punj & Shubham Shudhanshu

Abstract

Ever wondered on what "principle" or "law" the Universe works?

What you create is what you receive. The Universe is a balanced and stable play of energies. Any pulse of energy that one perpetuates, leads to the repercussive perpetuation of another. The Energy that you perpetuate comes back to you. This is what the Law of Karma is all about..

We are the instruments of the energy flow in the universe; the soul is the flow of energy in the universe. This point leads us to the concepts of transmigration, metempsychosis and palingenesis (all of which technically mean reincarnation or rebirth) that have been discussed in this work. The concept of reincarnations is all supposed to be maintained and governed by a 'documented dataset' called the Akashic Records that are believed to be a summation of all our Karmic Deeds and the (perpetuated and repercussive) Energy Flows associated with it.

All of the situations or energy flows that one gets are subjected to events that have been pre-planned as a rippling repercussion of your Karmic Deeds... This is what the Law of Karma explains.



You are the universe expressing itself for a little while.



Introduction

At some point in life individuals wonder about the reason behind facing certain events. On failing to come up with a logical cause, they usually conjecture these events to be the will of 'God'.

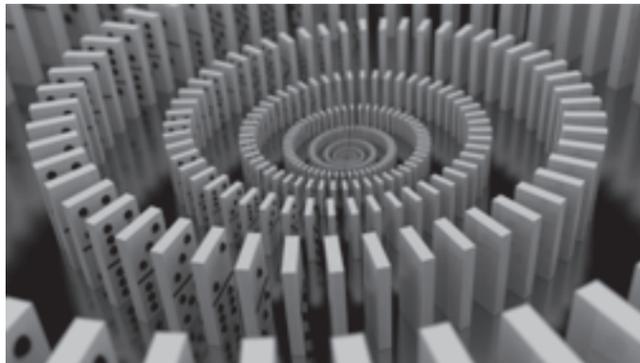
Every action be it psychic (Samskara) or somatic (Kriya) produces vibrations that perpetuate throughout the Universe until they hit back the perpetrator with an effect. This leads to a subsequent action from the perpetrator that leads to another repercussive effect, and likewise the cycle of cause and effect goes on. This is the unending Universal chain of cause and effect. This is the Universal Function that the world works on. This is what is called The Law of Causation.

Swami Vivekananda, not unlike many other spiritual Gurus throughout time and space, has said:

“Whenever we have set some power in motion, one is accountable for taking and experiencing the full consequences of it.”

This can be easily related to the Domino Effect.

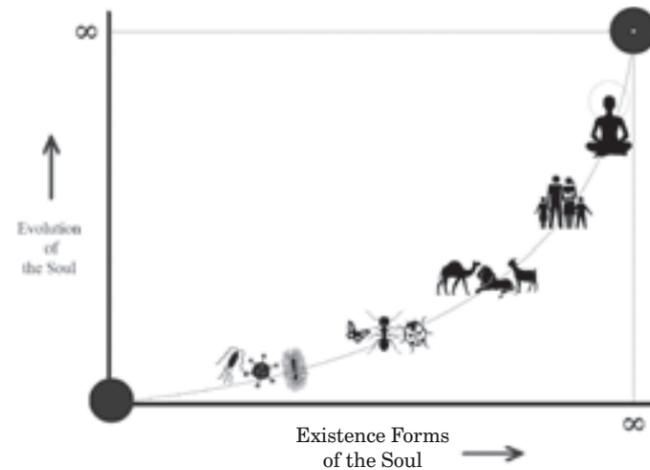
Even infinitesimal magnitudes of forces are capable of setting the whole domino in motion, causing a chain reaction: producing an action always produces a reaction to it – this reaction acts as the subsequent action, causing another reaction, and this way the whole chain of 'vibrations' (as we like to put it) is set into work. This whole phenomenon of 'vibrations' in the domino chain continues until no more reaction is possible, that is when no more actions are produced. This is when you have the whole phenomenon settled to peace which is what is called as the 'Moksha'.



The graph (see above) depicts the chronological movement of the soul from one form of existence to the next as it develops spiritually. The more spiritually developed the soul gets (by doing good Karma), the closer it gets to the highest and most stable state of energy – the state of Moksha.

On attaining Moksha, the soul realizes that it is a part of the supreme energy called the 'Brahm', which had been flowing from one instrument to the other only to realize that there has

only been One energy flowing through the 'Brahmand' (and that there is no myriad of energies): the soul realizes that this One energy also makes 'You'.



The Law of Karma

It is the law that keeps the Universe functioning in an order despite all the chaos. The world actually functions on the currency of Karma. One can only buy according to how and where one spends one's currency at. This is how the Universe functions.

Everything in the world is actually composed of atoms and its entire energy move in the form of vibrations. When one says that something/thought is on a higher energy plane, one means to say that the vibrations produced in that particular process are higher. The atoms in every thought/action we produce have certain vibrational amplitude according to which the exchange of energy from one form of matter to another takes place.

Every action that one does is consequential – every action that one does is repercussive in nature. And these are the repercussions that one has to serve to – this is the point of our discussion here.

As science suggests, all matter that exists in this world tends to achieve the most stable form that is the state of neutral or no energy. This is what the Law of Karma is all about – when one produces a set of vibrations, one is the only accountable and the neutralizing entity to this energy flow – the only one who is accountable to bear all the repercussions and the 'vibrations' of the past actions is the perpetrator itself.

One lifetime might not be enough to neutralize or account for all the vibrations produced by one's actions. The soul is the carrier of the vibrations; the body is just an instrument that the soul uses to experience it. Other than the human body there is no other physical existence that is an instrument strong enough to practice the Karmic deeds and actually generate rather than merely experience the vibrations and the



consequences of it. Because of this, sometimes there is no obvious and/or visible co-relation between one's actions and their consequences.

- Karma is generated only in human life.
- The rest of our incarnations are believed to be the lives of facing the consequences of our previous actions.

Transmigration & Metempsychosis

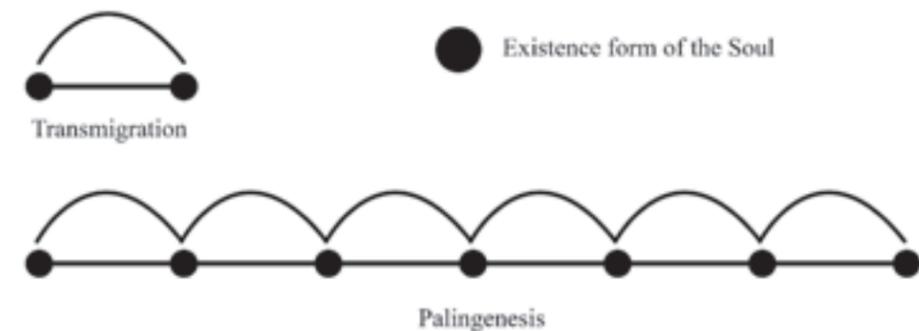
Transmigration and the Metempsychosis is a concept that deals with the continuation of the soul and not the instrument of flesh. The cycle of rebirth is eternal unless the soul is released by knowledge or arduous effort (spiritual and yogic practices).

This release (moksha) is a form of salvation, and is possible only for the most devout, that is, the whole process of transmigration of souls goes on till all our Akashic Records are settled and all vibrations and energy forms are achieved to the most stable form. As discussed earlier, this is where the role and the importance of spiritual practices and meditation is held. By the practice of manipulating and successfully controlling the vibrations, it becomes much easier to stay away from the earthly distractions, and the energy releases that come with it.

After getting freed from the chains of the body, the soul assumes an ethereal vehicle, and passes into the region of the "Nirvana" or the Supreme, where it remains till it is sent back to this world to inhabit some other body, human or animal. After undergoing successive reincarnations, when the soul is sufficiently purified, it is received as the Gods, and it returns to the eternal source from which it first proceeded.

Akashic Records are actually nothing but a compendium of all our Karmic deeds (energies) maintained somewhere in a non-physical plane called an Astral Plane (the whole concept of Akashic Records has been developed by Theosophists). It is the summation of all our Karmic deeds (energies), as explained by the following empirical equation.

$$\text{Akashic Records} = f(\text{Karmic Deeds}) = \sum_{i^{\text{th}} \text{ Deed}} (\text{energy perpetuated}_i - \text{energy experienced}_i)$$



Its relevance in different religions

Hinduism

The Upanishads have a strong mention of Karma and the Karmic actions, the concept based on which the soul passes through and on to various stages of existence (also including the non-physical planes of existence).

The Holy book of Bhagvada Gita states:

Never was there a time when I did not exist, nor you, nor all these kings; nor in the future shall any of us cease to be. As the embodied soul continuously passes, in this body, from childhood to youth to old age, the soul similarly passes into another body at death. A sober person is not bewildered by such a change.

A sober person here is referred to as the soul that has reached the "Nirvana". There are no more rebirths and reincarnations to it anymore. The realized soul is one that has realized the actual truth and has removed the shade of MY-ness and I-ness from it, realizing that it is nothing but a part of the supreme "Brahm".

The Bhagvada Gita also characterizes our Karma into three major parts:

Karma - The actions leading to the elevating of the soul.

Vikarma - The actions that deprive our soul of upliftment.

Akarma - The actions that neither create good nor bad vibrations.

Buddhism

Buddhists also have a similar belief as the Hindu belief when it comes to the reincarnation of the soul (consciousness). The rebirth of the individual is based on the Karmic actions of the individual. The forms to which the consciousness again gets aggregated to, might be a human, an animal or a supernatural power. The consciousness escapes this process of death and rebirth only when it removes the arrogant "I" part from itself.



The next achieved state is described as the rays of the sun that never touch the ground.

Lord Buddha's concept was distinct, but was based on and consistent with the notion of a sequence of lives over time but was constrained by two core concepts: that there is no substantial self-matter tying these lives together (i.e. there is no specific atman, instead it also keeps taking a modified birth with the birth of a new physical instrument it is meant to act with and react to) and that all the things in this world (no matter how complex they are) are subject to dissolution into the basic elements of nature, including the body and the arrogance of "I" it has lived with through its lifetime.

Jainism

Jainism is all about practicing moral behaviour and character. Leaving the play of Samsara is the ultimate goal of every soul. Your Karmic actions are responsible for the kind of birth you have in the next lifetime. The Jain texts postulates four Gatis or four kinds of existence that a soul can have. The four Gatis can be stated as the following:

- Deva (Birth in the Heaven as Demi Gods)
- Manushya (Birth as a human)
- Tiryañca (Birth as insects or the microorganisms)
- Nāraki (Birth in the Hell)

Depending on its karma, a soul transmigrates and reincarnates within the scope of the above mentioned cosmology of destinies. The four main destinies are further divided into sub-categories and still smaller sub-sub-categories. In all, Jain texts speak of a cycle of 8.4 million birth destinies in which souls find themselves again and again as they cycle within samsara.

The state of "Moksha" is what the noblest and the highest state the soul can achieve. Jainism is known as the "path to liberation".

The knowledge and the agreement of the fact that Karmic actions actually cause reincarnations is a widely accepted truth in almost every religious, philosophical, theological and spiritual culture throughout the world, maybe conveyed across in some different manner.

The higher our spiritual vibration, the quicker our karma returns to us, that is, people that actually practice spiritualism and meditation are masters of controlling the energies, (or as we put it) 'vibrations'. Many on the earth plane are subjected to 'Instant Karma'. This means that whatever one gives out comes back to them instantly. It means that they have become more evolved and the soul is not allowing karmic debt to accumulate.

It is a scientifically backed fact that every action (again somatic or psychotic) produces and uses up some energy (and hence, vibrations) when converted. And the waves produced by these vibrational energies actually never die out but wander about the universe till they are manifested again to produce another action (energy) with the existent energy and the vibration around, as a source reservoir to it.

Nirvana and Moksha

Nirvana (nīṛvāṇa)

तस्यहेतुरविद्यातदभावात्संयोगाभावोहानंतदृशेःकैवल्यम्।

- Yoga Sutra

Noun

Nirvana (synonym to 'Kaivalyam') is the ultimate state of existence of the soul, still in the physical bounds after an individual has neutralized one's Akashic Records. After attaining Nirvana, an individual ceases to commit any Karmic deeds, ceasing to cause any energy footprint, positive or negative.

Moksha ('mokṣa)

जातिनीतिकुलगोत्रदूरगंनामरूपगुणदोषवर्जितम्।
देशकालविषयातिवर्तियद्ब्रह्मतत्त्वमसिभावयात्मनि ॥२५४॥

- VivekChudamani

Noun

Moksha is the final state of existence of the soul, unbounded to the physical world.

As discussed before,

$$\text{Akashic Records} = f(\text{Karmic Deeds}) = \sum_{i^{\text{th}} \text{ Deed}} (\text{energy perpetuated,} - \text{energy experienced,})$$

The state of Nirvana is achieved by the soul when its Akashic Record is neutralized that is to say,

$$\text{Akashic Records} = 0$$



Another important concept to be observed from the equation here is that you cannot actually cancel the energies by creating the opposite, that is, you cannot cancel your Bad Karma by doing Good Karma. The only way to neutralize the vibrational energy produced is by experiencing the repercussions of your Karma.

Even if the Karma of the soul has been more positive than the negative that is even if the Akashic Records are positive, it cannot achieve the state of Nirvana since it would still be bounded by the Good Deeds and the Good Energy of the physical world. The state of Nirvana is when you have no vibrational energy footprint in the universe, that is, when you consider yourself detached from the worldly deeds.

Symbols



Conclusion

What will become of you then is decided by what you are now. Everything that you do or think, create vibes and energies that you are the only one accountable for. In the end, there is no 'you'. The 'you' that you feel, you are today is nothing but a physical form of the Supreme, to be realized.

"Do good, be good !!" – This is the religion that Swami Vivekananda believed in and this is by far the most simple and honest form a religion that you will find to follow.

Do the right Karma and you will find yourself in a better tomorrow, growing more spiritual and blissful by the day.

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MUSIC AND ITS DEEP ECOLOGICAL FOUNDATION: A STUDY ON VEDIC CULTURE AND ITS PARALLELS

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THEME OF THE PAPER



It evolved the science of geometry from the arrangements of bricks to build various altars, and startled the world with astronomical knowledge that arose from the attempts accurately to time their worship and oblations.

It made their contribution to the science of mathematics the largest of any race, ancient or modern, and to their knowledge of chemistry, of metallic compounds in medicine, their scale of musical notes, their invention of the bow-instruments — (all) of great service in the building of modern European civilisation.



Swami Vivekananda
Historical Evolution of India



Music and its Deep Ecological Foundation: A study on Vedic Culture and its Parallels

Emil Abraham

Abstract

Deep ecological world view of the early civilizations was rooted in the interconnectedness of the systems where nothing is seen as an isolated being rather a participatory element in the web of cosmos. Science, religion, arts, ethics, literature – all these were considered inextricably interconnected and they formed part of a whole, complementing each other. This paper focuses on the realm of music and its cosmological overtones as a means to comprehend the unifying foundation that throws light to the Aryan (the noble) way of thought. Deep ecological approach towards music in Vedic culture and in several parallel cultures, especially the Greek culture, expressed in cosmological is briefly studied in this paper.

Keywords: Ancient Music, Vedic philosophy, Pythagorean philosophy, Music and Cosmology

1. Introduction

History of music can be traced back right to the beginning of civilizations. Music has always been an expression of the cultural ethos and was interwoven with the world view of the society. Although we find visible diversity in the music of different traditions, there is a high probability of finding an undercurrent of unity that was at the roots of their approach towards music. In this paper, it is termed as 'a deep ecological outlook' that embraced all the spheres of human life including science, spirituality, celebrations, agriculture etc. Music was seen as the underlying factor of the whole of reality and was given mystical and cosmological significance. This approach can be easily traced in Vedic culture and in several other ancient civilizations. Understanding the deep ecological foundations of music in those streams of thought can throw

light on the cultural connect amongst the ancient civilizations and Vedic culture.

2. Outline

The study is based on the philosophical roots of music than on the structural and aesthetic aspects of the art. The first part of the paper gives a brief introduction to the role of music in Vedic culture and its link to Vedic cosmology. The second part gives a glimpse on the philosophical roots of music in various cultures with a great emphasis on the Greeks. The paper is concluded by synthesizing the thoughts on music and by establishing the deep ecological connect that could be traced in the ancient civilizations.

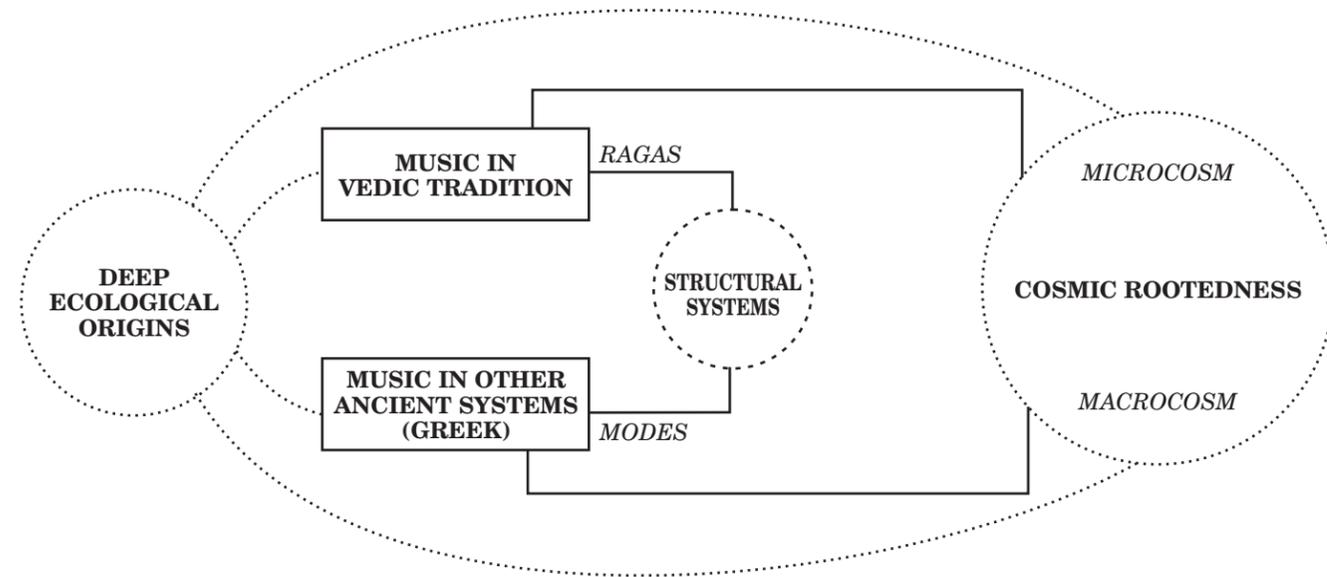


Figure 1: The conceptual structure; Source: Author

3. Review of Literature

3.1. Roots of Music in the Vedic culture

The music of India is one of the oldest unbroken musical traditions in the world. It is said that the origins of this system go back to the Vedas. Music was often referred to as *Panchama Veda* (the "Fifth Veda") and was regarded as a means of revelation. *Sangita*, which originally meant drama, music and dance, was closely associated with religion and philosophy. The Vedas ("knowledge") are hymns to be sung, and the occult power of their recitation is evidently of equal importance to their semantic content.ⁱ The recital and chant of mantras has been an essential element of Vedic ritual throughout the centuries.

The theory of *nada*, usually translated as "causal sound," is the foundation for the Vedic concept of music.ⁱⁱ The sound was considered equal to cosmic energy. And so music and religion were always closely intertwined. According to Vedic philosophy, the ultimate goal of human existence is *moksha*; and *nadopasana* (literally, the worship of sound) is taught as an important means for reaching *ananda*, the divine bliss. This devotional approach to music is a significant feature of Vedic culture.ⁱⁱⁱ

Sound was at the root of the Vedic understanding of reality. "Rig Vedic man was enveloped by sound... looked for centres of experience in the experience of sound; found the model of complete, absolute instantaneity and communication in

sound."^{iv} According to Hindu mythology the first art to have been revealed to mankind by Siva was music, an art that was considered to be the key to the understanding of the universe, which is thought to be structured upon musical harmony.^v

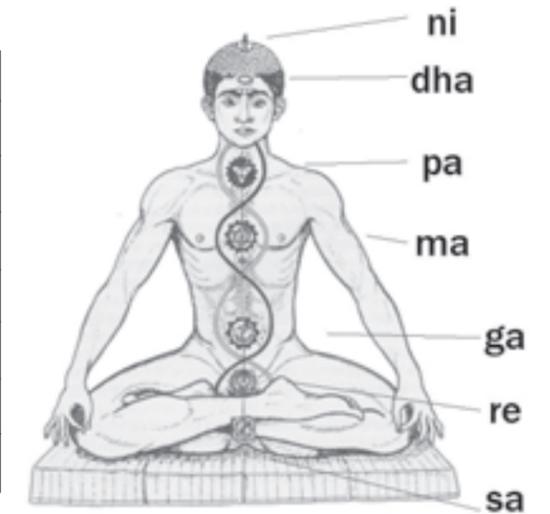
Cosmic significance of Indian music

Irish poet William Butler Yeats described Indian music as "not an art, but life itself." It had an aura of religious mysticism as well as cosmic symbolism. It was simultaneously linked with the realm of sensory entertainment and with the philosophy and practice of yoga.^{vi} Music was approached in two ways: either as the empirical use of physical peculiarities and aesthetics, or as the systematic application of the cosmic laws common to sound. The latter approach is called as *marga* (directional) based on absolute laws and is universal and unchangeable, while the former, which is called *desi* (regional), varies endlessly according to place and time. The power of a music constructed according to *marga* rules is extraordinary, its influence over animate and inanimate things is considered unlimited. Music was thought to be intertwined with the metaphysical aspects of macrocosm and microcosm.

Vedas conceived universe as a vibrational matrix issuing from the primordial vibration of creation. On the illusory level of *maya*, all forms are the result of novel vibrational arrangements or patterns within the matrix, which are in a constant flux. Each form therefore is believed to have its own unique corresponding sound. The ancient grammarian Bhartrihari called the science of sounds as the chemistry of the

Table 2: *Saptaswaras* and its relations

Swara	Expansion	Meaning	Animal	Chakra	God
Sa	Shadja	six-born	Peacock	<i>mūlādhāra</i>	Ganapati
Re	Rishabha	bull	Bull	<i>svādhiṣṭhāna</i>	Agni
Ga	Gandhara	sky	Goat	<i>maṇipūra</i>	Rudra
Ma	Madhyama	middle	Dove	<i>anāhata</i>	Vishnu
Pa	Panchama	fifth	Cuckoo	<i>viśuddha</i>	Naarada
Dha	Dhaivata	earth	Horse	<i>ājñā</i>	Sadasiva
Ni	Nishadam	hunter	Elephant	<i>sahasrāra</i>	Surya

Figure 2: *Saptaswaras* and chakras; Source: Pinterest

universe. The Vedas affirm that there is no sort of transformation in the structure or appearance of things that cannot be achieved through the influence of organized sounds.^{vii} The correct singing of a Vedic hymn is considered essential not only to the validity of the ritual but also to the stability of the universe.^{viii}

Vedic music is based on *swaras* that are linked to macrocosmic and planetary aspects as well as microcosmic aspects of 7 chakras in the body. Each *shuddha swara* is believed to have originated in the sound of a different animal. *Swaras* are mapped onto the chakras in the body in ascending order just as the way they ascend through the *saptak*. *Komal* notes are associated with the left side of each chakra; the left channel, *Ida Nadi* which is the side of emotion and intuition. *Shuddha* and *tivra* notes are associated with the right side; the right channel, *Pingala Nadi* which is the side of logic.^{ix}

The Indian music is based upon the principle of the *Raga* (also means nature), which shows it to be akin to nature. Different ragas are constructed subject to the cosmic law and correspondences abound therefore between both individual pitches, as well as ragas, and the deities, colours, rasa, castes, seasons, times of day, etc. Ragas, are considered to have effect on specific chakras depending on the notes they contain. (see Fig. 1) Ancient Sanskrit literary works like *Yamalashataka Tantra*, *Shakya Tantra* and *Uddishbodyam* mention the power of raga in influencing the state of consciousness of both musicians and listeners alike.^x *Tala*, the musical rhythm was often equated to the concept of time in Vedic thought. *Bharatakalpalata Maitjari* states: "Rhythm should be taken into consideration as time, and that time is known as Shiva. *Nada* has come from Shiva. *Nada* is the creation of the mind and mind makes time. Thus rhythm is itself a form of time."^x

The deeper we delve into the streams of Indian music the clearer its interconnection with cosmology, mythology, and philosophy becomes. Here comes the question if the outlook towards music as the integral element in the matrix of reality, is found only in systems that follow Vedic tradition. The next part deals with the deeper roots of music as seen in other civilizations, especially the Greeks.

3.2. Foundations of music: excerpts from history

There can be various similarities that can be established in the development of the structure of music and musical instruments in various cultures. Like in the Vedic culture, the early Chinese, Persians, Egyptians, Israelites, and Greeks employed both vocal and instrumental music in their cultural and religious ceremonies. Cultural relations can be established by studying the linguistic connect among all these traditions; like the Greek word *syntagma* can refer to either a political or a musical system, just as the Sanskrit *grama* can denote a village or a musical scale.^{xi} The South Indian drum *tambattam* that was known in Babylonia under the name of *timbutu*, and the South Indian *kinnari* shared its name with King David's *kinnor*. Similarly there are several instances that substantiate the cultural connect in ancient times. The following part explains the philosophical foundations of music so as to establish a unity of the fundamental thought that enveloped the ancient cultures.

3.2.1. Greek civilization and the Pythagorean concept of the music of the spheres

Music was an integral part of Greek culture. Festivals, rituals, parties, work, games, theatre, and war were all accompanied by

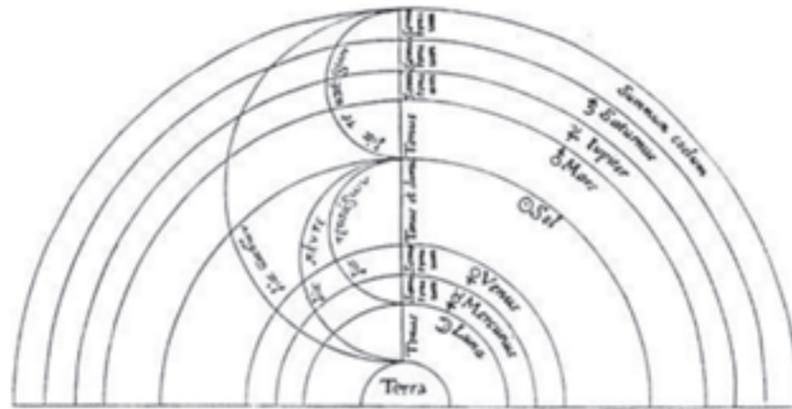


Figure 3: Music of the spheres; Source: Stanley's *The History of Philosophy*

The interval between the earth and the sphere of the fixed stars was considered to be a diapason—the most perfect harmonic interval. The musical intervals is given as the basis of the arrangement of the celestial spheres: From the sphere of the earth to the sphere of the moon; one tone; from the sphere of the moon to that of Mercury, one half-tone; etc. The sum of these intervals equals the six whole tones of the octave.

music. Like in Indian music, the ancient Greek music was primarily monophonic; that is, music built on single melodies based on a system of modes/scales. Plato depreciated the notion that music was intended solely to create cheerful and agreeable emotions and asserted that nothing could more strongly influence human being's innermost feelings than music.^{xiii}

To Pythagoreans music was one of the important realms of mathematics, and they believed that harmonies were controlled by mathematical proportions. The numerous parts of creation were divided into a vast number of planes or spheres, to each of which they assigned a tone, a number, a name, a colour, and a form. These deductions were demonstrated upon the different planes of intelligence and substance ranging from the most abstract logical premise to the most concrete geometrical solid; and the existence of certain natural laws were established. Thus establishing music as an exact science, Pythagoreans applied the law of harmonic intervals to all the phenomena of Nature, even going so far as to demonstrate the harmonic relationship of the planets, constellations, and elements to each other.

Music and form: There was a close association between the musical and spatial sciences. Most of the extant terms of pre-Euclidean Greek geometry were derived from music theory or harmonics. For example, 'diastema' means an interval, spatial or musical, just as 'chord' still has a geometrical as well as a musical meaning. The geometrical representation of an interval as a line terminated by vertical strokes could equally be compared to the picture of the monochord string. When a building was erected, the structure was likened to a musical chord, which was harmonic only when it fully satisfied the mathematical requirements of harmonic intervals. The realization of this analogy between sound and form must have been the reason why Goethe declared, "architecture is crystallized music."

3.2.2. Correlation between the Greek and the Vedic outlooks

The link between Vedic and Greek music is vivid in the words of the renowned musician Sir Yehudi Menuhin: "We would find

all, or most, strands beginning in India; for only in India have all possible modes been investigated, tabulated, and each assigned a particular place and purpose. Of these many hundreds, some found their way to Greece..."^{xiv} There are clues in the Vedic literature that relates music to the celestial bodies, as seen in the Pythagorean thought. It is to be noted that the Samaveda, where the hymns were supposed to be sung, was often compared to the sky.^{xv} The structure of *tala*, the typical concert format, the "binary oppositions" of composed and improvised alternations of material in performance, and the raga's inherent tendencies towards the creation of symmetrical and asymmetrical melodic patterns can be seen as symbolizing cyclical Hindu cosmological beliefs.^{xvi} As the Vedic culture related ragas to various gods Pythagoreans recognized a connection between the seven Greek modes and the planets. As an example, Pliny declares that Saturn moves in the Dorian mode and Jupiter in the Phrygian mode. It is also apparent that as in the Vedic system of ragas, Greeks too considered that the different temperaments are keyed to the various modes.

The relationships between both the philosophies are explained as follows: "Words are the Vedic Yoga: they unite mind and matter. Pure, ecstatic contemplation of phonetic sound reverberating on the ether in the sacred chant may be compared to the contemplation of geometrical forms and mathematical laws by the Pythagoreans. The Word is God, Number is God – both concepts result in a kind of intoxication. Only the Pythagorean Master can hear the music of the spheres: only the perfected Hindu sage can hear the primordial sound *Nada*."^{xvii} What is notable is the underlying thread of musical symbolism tying together these diverse traditions. Whether it is the divine *vina* of Saraswati, the monochords of Pythagoras or the lyre of Orpheus, the image of the vibrating string envelopes these musical cosmologies.

3.2.3. Cosmic significance of music in other cultures

Music and Egyptian conceptions of gods were strongly interrelated. Plato, in describing the antiquity of music among the Egyptians, said that songs and poetry had existed in Egypt for at least ten thousand years, and that they were of such an exalted and inspiring nature that only gods or godlike men



could have composed them.^{xviii} The ancient Egyptians credited one of the powerful gods Hathor with the invention of music, and Osiris is said to have used music in his effort to civilize the world.^{xix} The Egyptians confined their sacred songs to the seven primary sounds, forbidding any others to be uttered in their temples. In one of their hymns one of the gods describes himself thus: "I am the great indestructible lyre of the whole world, attuning the songs of the heavens."^{xx} The concept of relating heavenly bodies with music was already underlying in Egyptian thoughts.

The ancient Egyptians also celebrated the idea of a musical universe by employing harmonic proportions in the design of their pyramids and burial chambers. In the book *Egyptian Sonics*, acoustician John Stuart Reid found evidence that the Egyptians had developed an advanced sonic science by around 2520 BC. His acoustical experiments in the Kings Chamber of the Great Pyramid demonstrated that certain resonant frequencies would create vibratory patterns corresponding to some twenty hieroglyphs, suggesting that Egyptian writing may actually have its genesis in this early science of resonance.^{xxi}

In the Jewish mystical system of Kabbala, they taught that the Divine Word, the speech of God, creates and sustains both the heavens and the earth. Genesis tells that creation began with the sound of God.^{xxii} According to the Rabbi Moshe Chaim Luzzato, "All those things above are carried out by music and all the luminaries, when they go out from their source, are motivated by music."^{xxiii} The Zohar says that the constellations themselves create music and the music of the sun is so wonderful that if the ears of man would not be blocked then he would be capable of hearing this music. Every element in Nature is considered to have its individual keynote.^{xxiv} If these elements are combined in a composite structure the result is a chord that, if sounded, will disintegrate the compound into its integral parts. The allegory of the walls of Jericho falling when the trumpets of Israel were sounded is undoubtedly intended to set forth the significance of vibration. A blend on the Vedic concept of sacred sound and Pythagorean thought on music of the spheres can be seen in the approach to music in Kabbala.

The emphasis on divine sound is carried on in the Christian traditions as well. St. John starts his gospel with the statement "In the beginning was the word...and the word was God."^{xxv} It is similar to the Vedic concept of everything having come from the primordial word that is considered as the vibratory aspect of the Brahman. Imagery of sound and music has a key role in the biblical writings. The book of Revelations says thus: "music exploded into a cosmic chorus of praise, as every creature in heaven and on earth ... added their voices..."^{xxvi} In Sufi traditions, music (*Qawwali*) is considered to lead one to *Wajad*, the sacred ecstasy which the Sufis experience, which is said to be the moment when the devotee becomes filled with the cosmic knowledge words could never express. Other than the ones mentioned above, there are many other religious and cultural traditions where the role of music goes much beyond the aspects of auditory pleasure and aesthetic appreciation, to the deeper realms of science, mysticism and metaphysics.

4. Conclusion: Music as a harmony of Microcosm and Macrocosm

The deep ecological perspective that had its foundation on cosmic interconnectedness can be looked at as a seed buried in the origins of human thought. The common philosophical link that we can trace from several ancient cultures including Vedic civilization is the idea of the "world-order" (as above so below), a theme that is reflected in the mythology and cosmological conceptions. Music is one among the many systems in which this order is expressed.

Abraham Seidenberg, the renowned American mathematician, argued that the origins of arithmetic and geometry are to be found in the ritual arts: for example, the oldest precise descriptions of geometrical procedures are found in the *Sulvasutras*, ancient Indian works on altar construction, a liturgical tradition that goes back to the *Rigveda*.^{xxvii} Joseph Campbell showed how the cosmic connect was expressed in the planning of the ancient Egypt "...The whole city now is conceived as an imitation on earth of the celestial order, a sociological middle cosmos... between the macrocosm of the universe and the microcosm of the individual, making visible their essential form..."^{xxviii} For the ancient Greeks, architecture was indeed 'frozen music', the art of building regulated by cosmic measures and musical canons. Louis Mumford says that the biotechnics were a critical factor in the prehistoric development of technology and the constructive arts. For the early Greeks, and many others, the most important 'biotechnics' were the musical arts (the arts of the Muses);^{xxix} and this fact explains the extraordinary value placed on musical numbers in the ancient arts and sciences. Thus we can even say that study of the ancient musical systems can, to a great extent, unveil the construct of all the other systems of knowledge as well.

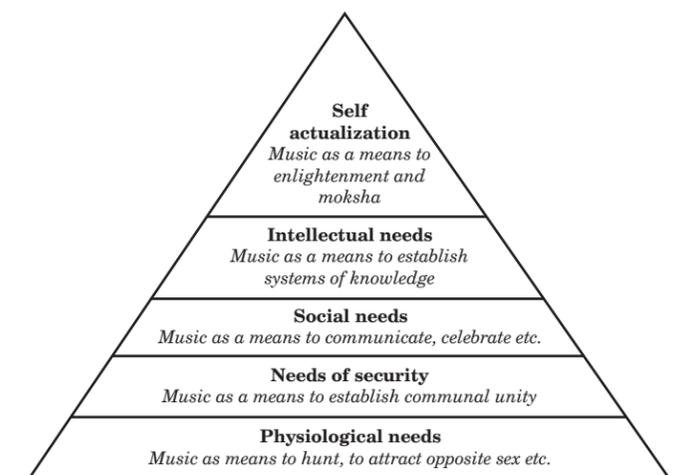


Figure 4: Hierarchy of needs and dimensions of Music
Source: Author



The various records from the ancient history tell that the search for the cosmic dimensions; the movement towards the impersonal self, was considered the sublime motive of human life. In east that pursuit was primarily based on intuition and in west it was based on perception. Music, that envelopes both those aspects, presented a bridge between the tangible and the intangible aspects of reality; a connect between mundane and spiritual; a link that permeates in all the levels of human needs, from the physiological level to the level of self-actualization. (see fig.4) Musical traditions of the past throw light to a human knowledge system that believed in a movement towards the higher realms of evolution, beyond the mechanistic and reductionist paradigms, to a holistic and organic world-view, the system that characterized the Aryan ethos.

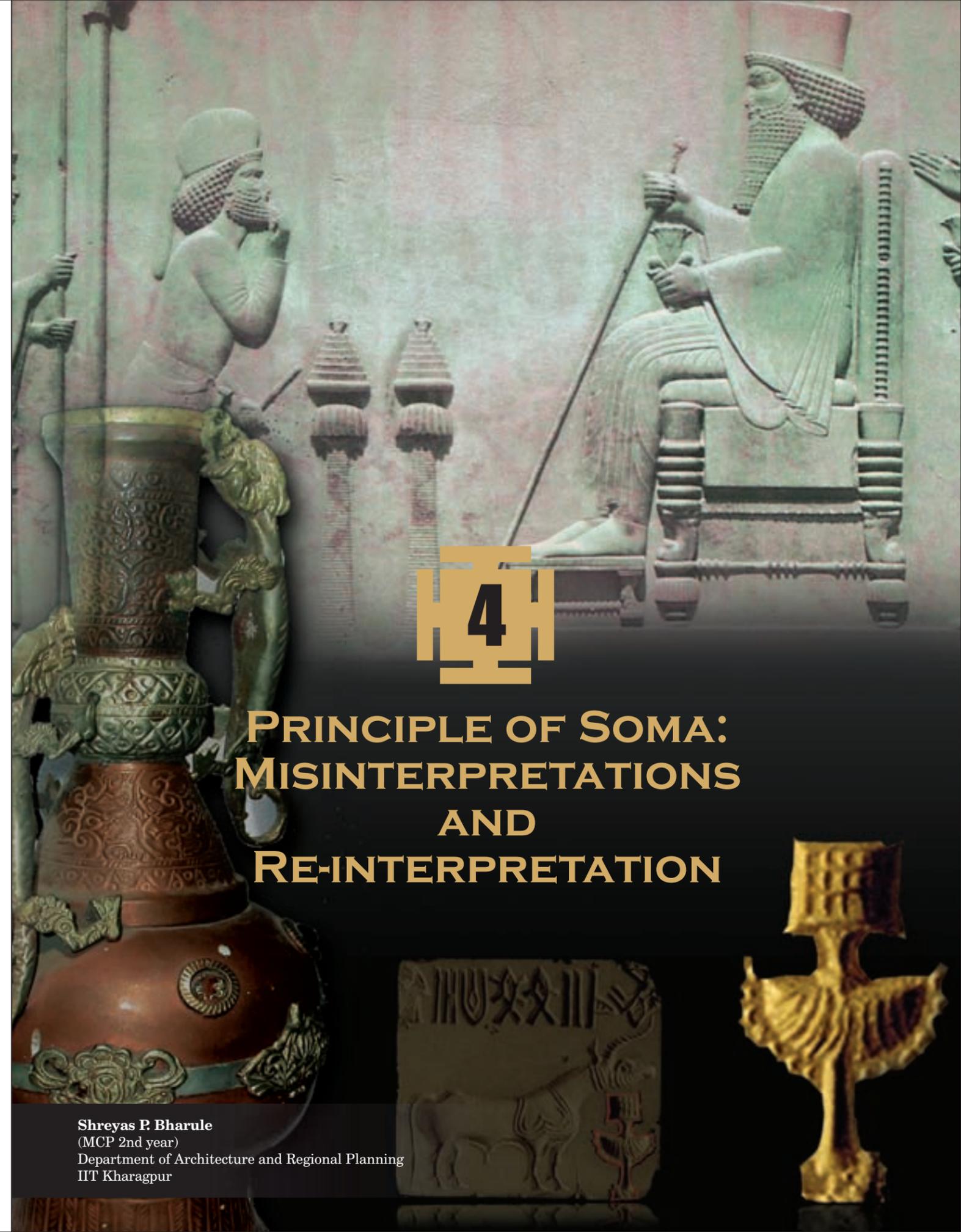
4.3. Further research

- Harmonic principles and its associations with sciences of the ancient world
- Relationship between music and numerological symbolism in Vedas and Kabbala
- Concept of *nada* and its overtones in Vedic cosmology
- Historical interaction between evolution of music and evolution of society. Can technological and sociological changes be attributed to be the cause for evolution in music; or vice versa?

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PRINCIPLE OF SOMA: MISINTERPRETATIONS AND RE-INTERPRETATION

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THEME OF THE PAPER



“

What concerns us most is the religious thought — on soul and God and all that appertains to religion. We will take the Samhitās. These are collections of hymns forming, as it were, the oldest Aryan literature, properly speaking, the oldest literature in the world. There may have been some scraps of literature of older date here and there, older than that even, but not books, or literature properly so called. As a collected book, this is the oldest the world has, and herein is portrayed the earliest feeling of the Aryans, their aspirations, the questions that arose about their manners and methods, and so on.

At the very outset we find a very curious idea. These hymns are sung in praise of different gods, Devas as they are called, the bright ones. There are quite a number of them. One is called Indra, another Varuna, another Mitra, Parjanya, and so on. Various mythological and allegorical figures come before us one after the other — for instance, Indra, the thunderer, striking the serpent who has withheld the rains from mankind. Then he lets fly his thunderbolt, the serpent is killed, and rain comes down in showers. The people are pleased, and they worship Indra with oblations. They make a sacrificial pyre, kill some animals, roast their flesh upon spits, and offer that meat to Indra. And they had a popular plant called Soma. What plant it was nobody knows now; it has entirely disappeared, but from the books we gather that, when crushed, it produced a sort of milky juice, and that was

fermented, and it can also be gathered that this fermented Soma juice was intoxicating. This also they offered to Indra and the other gods, and they also drank it themselves. Sometimes they drank a little too much, and so did the gods. Indra on occasions got drunk. There are passages to show that Indra at one time drank so much of this Soma juice that he talked irrelevant words. So with Varuna. He is another god, very powerful, and is in the same way protecting his votaries, and they are praising him with their libations of Soma.

So is the god of war, and so on. But the popular idea that strikes one as making the mythologies of the Samhitās entirely different from the other mythologies is, that along with every one of these gods is the idea of an infinity. This infinite is abstracted, and sometimes described as Āditya.

....One god is praised, and for the time being it is said that all the other gods obey his commands, and the very one who is said to be raised up by Varuna, is himself raised up, in the next book, to the highest position. They occupy the position of the Personal God in turns.

But the explanation is there in the book, and it is a grand explanation, one that has given the theme to all subsequent thought in India, and one that will be the theme of the whole world of religions: "Ekam Sat ViprāBahudhāVadanti — That which exists is One; sages call It by various names."

”

Swami Vivekananda
Vedic Religious Ideals

Principle of Soma: Misinterpretations and Re-interpretation

Shreyas P. Bharule

Abstract

Since the earlier mythological times, Soma has always been taken as a plant whose extracts were used as a sacred intoxicating drink of the gods. But according to the Vedas it is a creator and a fosterer, and aids in sustenance of a living being. It takes various forms and sizes to keep the life cycle in motion. Since recent past researches, Soma has become a string for the Vedic connections across different civilization while maintaining the same sacred importance. Soma with Agni has played a pivotal role in creation at different levels of the cosmos. Both Soma and Agni are also responsible for consciousness of the mind. In the following paper evidences from various texts and documents have been collected and discussed to find the true Interpretation of sacred entity: Soma.

Keywords: Soma, Abhisava, Adana, Visarga, Somatology

1. Introduction

To understand the original concept of Soma, one needs to go deep into Rig Veda & the Sama Vedic Upanishads out of the four Vedas. The Vedas as dated back to 12th century BCE and are amongst the oldest sacred text.

Soma has been mistaken as an intoxicating plant for a long time and till date but if one goes deep in the Rig Vedas hymns, there is no mention of it as an intoxicant. Instead the identity of Soma is explained at various levels of the Universe or Cosmos.

“सोममन्यतेपिबनयतसम्पिषन्त्योषधिम् ||
सोमयम्रहाणोविदुर्नतस्याश्रातिकश्चन ||”¹

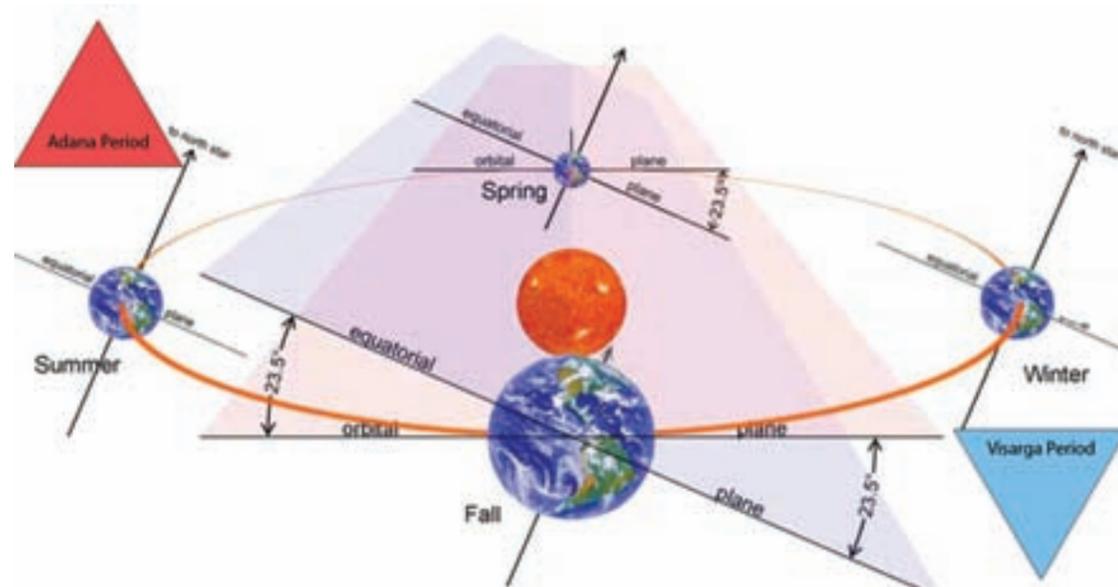
Griffith translates it to the following:-

“One thinks, when they have brayed the plant, that he hath drunk the Soma's juice;
of him whom Brahmans truly know as Soma no one ever tastes.”

The translation hints to the metaphysical aspect attached to Soma.

2. Study approach

- **The Soma Mandala: 9th Mandala – Rig Veda.** (114 hymns).
 - Sayana's Soma.
 - ♦ Rig Vedas' translator Sayana's comments on Soma in the Rig Veda
- **Various forms of Soma**
 - Descriptions based on Rig Veda references and evidences.
 - **Soma and Agni: Adana & Visarga**
 - ♦ The play of Equinox and Solstice.
 - **Soma –Water Principle**
- **Soma across the world**
 - The Vedic Argument and Avestan Evidence, with cues from Chu Ci dynasty (Jiu Ge or Nine Songs of Qu Yuan).
- **Soma- Rain Cycle Principle - Life Cycle Principle**
 - Rain-cycle principle: 5 chakras of Param Siddhi.



The cycle of equinoxes and Solstice; Source: Author

3. Review of Literature

3.1. Soma Mandala

The entire 9th Chapter of Rig Veda is dedicated to Soma and is referred to as the *Soma Mandala*. *Sayanacharya*, interprets Soma as both a plant and the moon. *Atharva Veda* mentions Soma to be growing in upper Himalayas. The *Brahmana* Literature & *Srautasutra*, there is a detailed description of purchase of Soma and transportation of the same in a cart followed by extraction of its juice, the *Abhisava*, with the help of stone pieces. However the actual meaning and Concept is deeper.

In the 9th chapter of Rig Veda, Soma when described as moon the "*DivyaShishu*" is referred to as the "*Child of Heaven*", It was carried from there (heaven) to the middle atmospheric region from where it descends as rain in the terrestrial region, here Soma gets associated with *Indra* the rain god; the Hindu mythological legend of the slaying of *Vritra* is nothing but a symbolic expression of the physical phenomena of rains, from here onwards Soma takes different forms in the lower regions and levels.

3.2. Agni and Soma

Agni and Soma play the most important role in birth, creation and sustenance. Agni is within Soma, and Somaⁱⁱⁱ rises after Agni for its sustenance. As said above, Soma is existent in all these regions, similarly, Agni pervades all the three regions in forms of Aditya (sun), Vidyut (lightning) and Agni (fire).

Soma absorbed by sun-rays ascends to the atmospheric region^{iv}, where it couples with Agni (the fire-principle). It is this merging of Soma and Agni that results in the formation of the rains in turn.

Agni and Soma along with Vayu make the tri-dosha (Humours) of Ayurveda which govern the physio-pathology of the living body. Vayu is the factor of movement which assists in their normal functions; Life is, in fact, equilibrium of Agni and Soma. The lamp is an ideal replica of this combination which burns till there is equilibrium of Agni (flame) and Soma (oil). Disturbance in any of them results in extinction of the lamp.

Yajna (sacrifice) is again the similar symbol of the life process governed by the proper combination of Agni and Soma and hence there is a mention of mythical Soma sacrifice ritual. Sacrificial fire is the symbol of digestive fire to which Soma is offered as oblation to maintain its energy.

3.3. Adana & Visarga: The play of Equinoxes

Adana, means to provide whereas *Visarga* means to disseminate. Throughout the year Indian subcontinent experiences six seasons.

In nature, the functions of *Adana* and *Visarga* are controlled by *Aditya* (sun) and Soma (moon) respectively. It is said that out of six seasons three - *Sisiira* (Winter), *Vasanta* (Spring) and *Grisma* (Summer) belong to the latter group. In the period of *Adana* (Summer season), the sun is stronger and as such takes away the terrestrial sap (water) while in that of *Visarga* the period is such it replenishes the earth with sap (Rain). Soma sacrifices were generally held in *Adana-kala* particularly in spring time which is the middle season of the period.

3.4. Soma as the Principle of Condensation

Soma, in the earlier portions of Rigveda, is always associated with water and not with any plant. Soma comes down on earth with rains and abides in various forms of terrestrial water including rivers and oceans. Such description does not fit to a plant but can denote only the water-principle which is behind



all the visible waters. Soma is described mostly in the 9th mandala of Rigveda. There is no word which could denote it as an herbal material.

Soma in the water-principle which resides primarily in water and secondarily in herbs (as tree sap) which are nourished by water. Soma's connection with water is mentioned in various ways:-

'Streams flow from Him. The waters follow His ordinance. He flows at the head of streams. He is lord and king of streams, Lord of spouses, an oceanic king and god. The waters are His sisters. As leader of waters, Soma rules over rains. He produces waters and causes heaven and earth to rain. He streams rains from heaven. The Soma drops themselves are several times compared with rain and Somais said to flow clearly with a stream of honey like the rain-charged cloud. Soma is the drop which grows in the waters'.^{vi}

Apart from water Soma is also present in Ghee, Honey and Milk.^{vii}

Soma is mentioned as *matsara*^{viii} (saturating) and *madayisnu*^{ix} (exhilarating). It is also called as *madhu*^x because of its being sweet and essence. The madhura rasa is stated produced from the predominance of Soma.^{xi} The jar full of honey carried in the chariot of Asvins, the sons of Goddess of the clouds, *Saranyu*, seems to be the representative of Soma. It is constantly moving.

4. Evidences of presence of Soma like materials in other Cultures

4.1. Indo-Iranian Soma – Haoma

Modern scholars have equated Soma with Avestan - *Haoma* and the pressing (sap extraction) and offering of Soma is said to be an important feature of Indo-Iranian worship. Avesta, the ancient collection of sacred texts of Zoroastrianism. In the texts, three things are found simultaneously - holy water, *Haoma* and the sweet smelling plant *Hadhanaepata*. *Haoma* and *Haoma*-juice also come together at several places as Soma and *Rasa* in Rigveda but as like in Rigveda, in Avesta too it is not clearly mentioned that *Haoma* was a plant. Again, *Haoma* is mentioned in association with the holy water, as is Soma in Rigveda. Likewise it is also described as coming down in thousand streams which sustain all waters.

An extensive research done by David Flattery and Martin Schwartz on *Haoma* suggests that in some contexts it is a plant having miraculous properties and providing health and immortality. In Avesta the picture of Soma is found in both ways — as water principle and as a plant. However, in Rigveda its herbal form is observed only in the tenth mandala whereas in Avesta both are mingled together.^{xii} The reason is that though Avesta originally inherits the Indo-Iranian culture having vedic style and materials, it has been recast from time to time and as such has imbibed even the post-Rigvedic tradition

in which Soma was definitely a plant used in Soma-sacrifice with elaborate rituals as found in *Brahmanas* and *Srautasutra* literature.

Therefore, from this angle, the present Rigveda stands anterior to the present *Avesta* and as such the description of Soma found in Rigveda can't be interpreted and assessed solely on the basis of that in the *Avesta*.

4.2. Shuma

Jiu Ge; The Nine Songs - Qu Yuan's famous poem, written in around 300 BCE and later compiled into the *Chi Ci* the poetry of the *Chu* State. The nine songs is considered to be based on Shaman songs popularly sung in the ancient *Chu* State. The contents of the *Chu Ci* material are a major primary source for historical information about the culture and religious beliefs in the territorial area of the former Kingdom of *Chu*.^{xiii}

It consists of eleven subtitled sections, two of which are *Da Siming* (Senior Lord of Life), and *Shao Siming* (Junior Lord of Life). As the character is traditionally interpreted, *Da Siming* is a male deity who has charge of life and death, and *Shao Siming* is a female deity who is in charge of fertility and offspring. The lines in the poem mostly take the form of a dialog between the two deities, but they are sometimes expressed as part of a single person's speech.

Shuma appears in *Da Siming* as the twig of a plant picked and offered to *Da Siming* by *Shao Siming* at the eternal farewell. A few lines are quoted here:

"Pluck the shuma and the yaohua;
Present them to the one who departs:
We are getting older, toward the end of our lives,
But we are no nearer each other."

In the poem, Qu Yuan mentions a term *Shuma*. *Shu-ma* in Chinese, is a compound word, *Shu* meaning 'Sparse', 'distant' and or 'empty' and *ma* meaning 'hemp'. Scholars such as Wen Yiduo, interpreted *shu ma* as "sparse or distant hemp", but many scholars follow Wang Yi's interpretation, which suggests *shu ma* as "mythical hemp".

Apart from *Shu-ma*, there are various forms of Hemp which have been associated with ancient China. Hemp has been a major agricultural crop for its fiber and seed oil since ancient times. But like Soma-*Haoma* the biological existences of *shuma* is absent, this makes it interestingly associated with Soma or *Haoma* since ancient Chinese practised similar rituals.

4.3. Other assumed identities of Soma

4.3.1. Indus Valley civilization

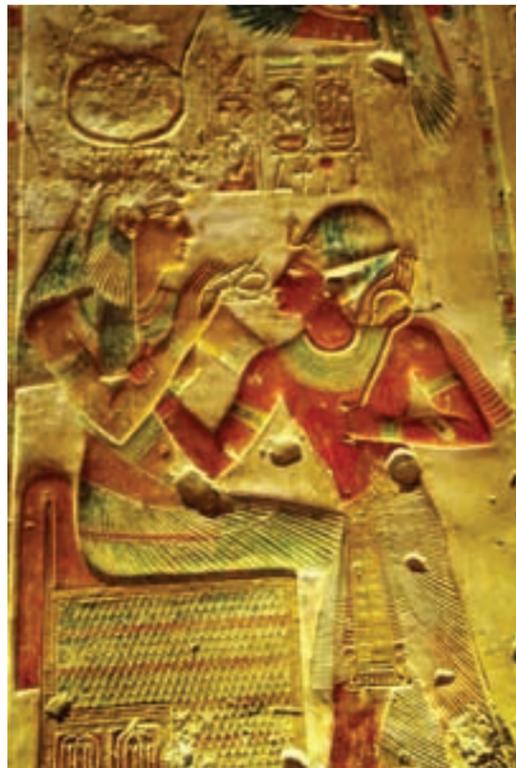
Many of the Indus Valley civilization Unicorn seals have a lamp like motif next to the unicorn. Many scholars have claimed that the article was a Soma drink filter. Another evidence is the double unicorn seal, Researchers believe that the mushroom like element in the bottom centre part of the seal is '*Amanita Muscaria*' a mushroom still used by various tribes as a hallucinogen in sacred ritual.



Seals from the Indus valley Civilization, the Unicorn seal and the Double Unicorn seal. Source: Internet

4.3.2. Egypt

In the temple of Abydos, there are many cross like inscriptions known as 'ankh', researchers believe that this ankh was associated with the blessing ritual and was important for communion with god, further, the ankh may be as rare as an amulet because only pharaohs, some priests, or important scribes those who really understood what they were transcribing had the access to the mushroom or other mind altering substances.



Temple of Abydos: Goddess Isis blessing and giving Pharaoh Seti, the Ankh. Source: Internet.

Various other temples in Egypt have similar depiction of the Goddess giving pharaohs 'the breath of life' or the Ankh.



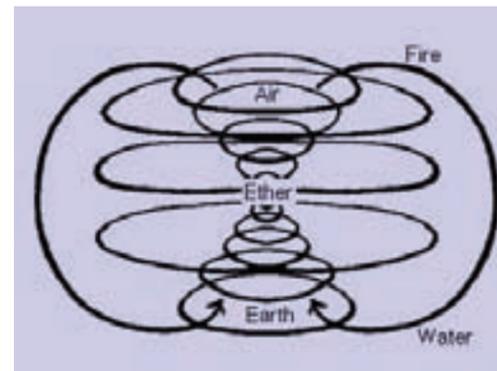
On the extreme left, is the Amanita muscaria mushroom, and on the right a Maya figurine (300-900 C.E.) photographed by Justin Kerr. The figurine wears a headdress inspired by the Amanita muscaria mushroom. The figurine's contorted face depicts what Olmec scholars call the "Olmec snarl", a common motif in Olmec art which represents the mushroom's esoteric effect of jaguar transformation and the soul's mythical underworld journey. The figurine holds in its hands a concave mirror. Mirrors were used by shamans to see into the past and future and communicate with ancestors and gods.

4.3.3. Meso-American Civilization

Many of the Meso-American, Mayan Civilization reliefs, has mushrooms carved as hats, or as decorative motifs. Iconographers believe that such representation can either be of a hallucinogen (probably amanita muscaria) and it bears a close connection to shamanic practices but show close resemblance to Indian reliefs. Some of the sculptures are believed to be representing the hallucinogenic effect of the mushroom. Even today the tribes in Meso-American, practice the Mushroom rituals. Similar rituals are practised in Serbia

5. Cosmic Life Cycle Principle

Perhaps the concept of Adana and Visarga is at the gist of life cycle which in deeper cosmic sense connects to the Panch-Agni



The graphical representation of the Spring-Fall cycle. Representing the involvement of the panchTatvas (Five elements). Source: Internet http://www.weare1.us/Golden_Ratio.html.



Vidya. As explained in the Adana-Visarga Kala, it can be understood that spring the season in which air is predominant, the northern hemisphere of the earth moves into resonance with the centrifugal spiral of the spirit. All the forms that resonate with life are entrained through sympathetic vibrations with this spiralling of the life force from the 'centre'. Through sympathetic vibrations with the centre, life springs out of the emptiness of space to the manifestation of time.

Air sustains a spiralling transverse motion between the fields of ether and earth. In re-spir-ation (Springing it back) the force of the air element respire the more material elements through its potent inner resonance of atonement with the field of life. The essence of air is movement as an expression of living cosmic intelligence and consciousness. After reaching the highest level the air falls in the form of water, happens in the fall, Visarga Kala.

5.1. The Chakras, Vedic Somatology

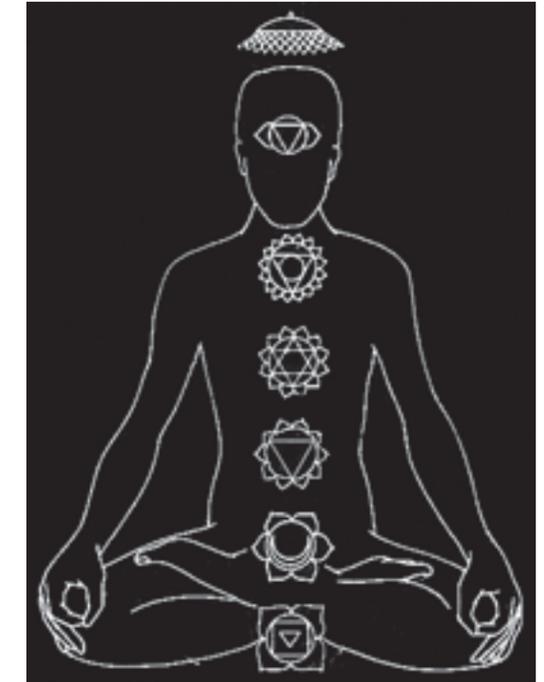
The whole Vedic system is very comprehensive. The chakras in the body is a microcosm of the cosmos. The five elements of the 'Panch Agni Vidya' form the central core and axis of the cerebrospinal nervous system of the human body, and distributes the energy impulses upon the central axis as the motive power of the finer energies in the man, from within outwards, as the life flow. First it is the psychic wireless energy then precipitates into the physical life energy and currents^{xix}.

Each chakra is the nucleus of an elemental energy field. The antiquated Caduceus symbol used by the present day medical foundation symbolizes on an exclusive level the intra-body alchemic procedure. The central staff represents the spinal segment which associates with the *Sushumna Nadi* channel of Yogic obscure life sciences. The two climbing spirals of snakes represent the Sun based (Agni) and lunar streams (Soma) known as the *ida* and *pingala* of the *kundalini* life force. The winding example is like the spirals of the human DNA.

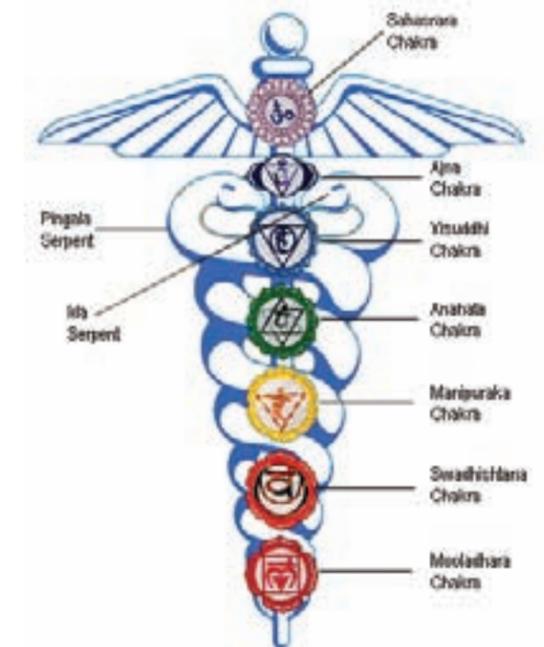
The Orb at the highest point of the staff represents the energy centre of the brain or the seventh chakra, *Sahasrara* the thousand petal lotus. The Wings at the highest point of the staff is the climax of the alchemic process. This represents liberation of the soul from the cycle of conception (birth) and passing (death). One rises above the obligations of matter and proof. The soul is discharged from the limits of matter. Eventually, this is the unfolding of consciousness, whereby one realizes ones-self to be infinite otherwise called self-realization.

The chakras are the primary centres of the pranas, life currents that sustain the body, every unit of consciousness belong to one of these chakras which are sources of the *seven rays of life*. These seven rays work through the chakras. The first three are called major rays and the next four are minor rays.

- Somatology; the study, or science, of the human body as a branch of anthropology. It is also defined as the study of material bodies or substances, as in physics, chemistry, biology, botany which are under the general heading of physicalism. Ancient writers like St. Paul said that



The Chakras in Human Body



The chakras of the human body with respect to the Caduceus, present day symbol of medical sciences.



Table 1 shows the relation of the Chakras and the associated hormonal glands in the human body

Table 1: Locations of the chakras in human body and the corresponding Endocrine Glands

Chakra	Ray	Associated Hormonal Glands	Symbol
Sahasrara Chakra (Head Centre)	Ray of will Power, First Ray.	Pineal Gland	–
Ajna Chakra (Eyebrow Centre)	Ray of concrete Knowledge, Fifth Ray.	Pituitary Gland	
Visuddhi Chakra (Throat Centre)	Ray of Active Intelligence, Third Ray	Thyroid Gland	
Anahata Chakra (Heart Centre)	Ray of love-Wisdom, Second Ray.	Thymus Gland	
Manipuraka Chakra (Solar Plexus)	Ray of Devotion, Sixth Ray.	Pancreas	
Swadishtana Chakra (Sacral Centre)	Ray of Ceremonial Magic, Seventh ray.	The Gonads	
Mooladhara Chakra (Base Of Spine)	Ray of Harmony, Fourth Ray	Adrenal Glands	

individual human beings are a complex integration of three components: body, mind and spirit – Soma, psyche and pneuma. The present day Somatology deals with what the ancient Vedic text had been hinting for so long now.

Perhaps electricity is the closest manifestation of consciousness, as it accounts for all that can be seen, sensed and known, and then there is the entire universe which is a manifestation of an electrical power house, the driving force behind – a clear knowledge of the two things can only be achieved by understanding the ecology of the macrocosm (universe), and the microcosm (self).

"When man arrives at a better understanding of the etheric body and its seven force centres which are all related to the seven rays, and in their expression show the seven characteristics and techniques, then some further light can intelligibly be thrown upon the nature of the seven types of electrical phenomena which we call the seven rays."¹⁹³¹

6. Conclusion

Major findings

Soma if was used in Sacrificial ritual. It was found in water principle. Soma is present in Milk, Ghee and Honey. Perhaps that is the reason why honey, ghee, milk and water are still used in the sacrificial rituals of Hindu culture.

Soma as the Water principle, at cosmic level is the driver of all the living beings rather being an intoxicant. It is the fly wheel which keeps the system running in absence of any direct force on the system.

Shaman tribes practising sacred sacrificial rituals, mention having similar experiences as mentioned sacred texts, in order to connect with God. And hence the shamanistic practices are continuing across world. Materials used by the Shamans are often mistaken as the true Soma.



VARIOUS DESCRIPTION OF SOMA

EVIDENCES OF VARIOUS DESCRIPTION OF SOMA IN VEDIC UPANISHADS AND THE TRANSLATION

VARIOUS LEVELS OF THE UNIVERSE

MOON

अतो वाचं लोकं गीतमाग्निस्तस्यैव सन्निदामसौ धूमोऽग्निर्विचक्षन् अङ्गारा तस्य जनि विस्तुलिङ्गाः ॥ १ ॥
तस्मिन्नेतस्मिन्मानी देवाः शब्दां जुहवति तस्या अहुतेः सोमो राजा सम्भवति ॥ २ ॥
The altar on which the sacrifice is supposed to be offered is that world, heaven; Oh Gautama; its fuel is the sun itself, Adhye; The smoke, his rays; The light, the day; The coals, the moon; The sparks, the star
On the altar the Devas offer sradddhi libation from that oblation rises Soma, the king, The Moon

CELESTIAL LEVEL

RAIN

पृथ्वी वाच गीतमाग्निस्तस्य वाचोव सन्निदामसौ धूमो विद्वद्विचक्षन्निद्वाराहृदन्धो विस्तुलिङ्गाः ॥ १ ॥
तस्मिन्नेतस्मिन्मानी देवाः सोमं राजां जुहवति तस्या अहुतेर्षे सम्भवति ॥ २ ॥
The altar is Pragnya, The lord of Rain; Oh Gautama; its fuel is the air itself, The smoke, the clouds; The light, the lightning; The thunderbolt, the sparks, the thundering
On the altar the Devas offer Soma, the king, From the Oblation rises the Rain

ATMOSPHERIC LEVEL

VEGETATION

पृथिवी वाच गीतमाग्निस्तस्यः संवत्सर एव सन्निदामसौ धूमो रात्रिर्विचक्षिद्वारा अवाप्तदितो विस्तुलिङ्गाः ॥ १ ॥
तस्मिन्नेतस्मिन्मानी देवा वर्षं जुहवति तस्या अहुतेर्न सम्भवति ॥ २ ॥
The altar is the earth, Oh Gautama; its fuel is the year itself, the smoke the ether; the light, the night the coals, the quarters, the sparks, the intermediate quarters
On that altar the Devas offer rain; From that oblation rises the food

TERRESTRIAL LEVEL

PROCREATIVE FLUIDS

पृथ्वी वाच गीतमाग्निस्तस्य वाचोव सन्निदामसौ धूमो जिह्वाविचक्षुङ्गाराः शोभं विस्तुलिङ्गाः ॥ १ ॥
तस्मिन्नेतस्मिन्मानी देवा अन्नं जुहवति तस्या अहुते रेतः सम्भवति ॥ २ ॥
The altar is the man, Oh Gautama; its fuel is the speech itself, The smoke, the breath; The light, the tongue; The coals, the eyes; The sparks, the ears
On the altar the Devas offer food; From that oblation rises the seed

CIVILIZATION - ANTHROPOGENIC LEVEL

EMBRYO

शेषा वाच गीतमाग्निस्तस्य अप्स्य एव सन्निदामस्यते स धूमो यमिर्विचक्षन्तः कपोति तेषुङ्गारा अभिनन्दा विस्तुलिङ्गाः ॥ १ ॥
तस्मिन्नेतस्मिन्मानी देवा रेतो जुहवति तस्या अहुतेर्नः सम्भवति ॥ २ ॥
The altar is the Woman, Oh Gautama
On that altar the Devas offer seed; From the seed Rises the Germ

PROCREATIVE LEVEL



If we try looking at all the evidences collectively, certain question arise.

- Soma used during the Vedic ages, was traded across all the civilizations? If so at what scale was it traded?
- If all the Soma-Haoma ritual practices were described having similar nature or purpose, was it so that all these sacred text had a common source?
- If soma deals with the consciousness, why is soma commonly mistaken as an intoxicant?

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End Notes

ⁱ Rig Veda 10.85.3

ⁱⁱ *Ralph Griffith .T.H., The Hymns of Rig Veda, Chowkhamba Sanskrit Series Office, Varanasi, 1971 (5th Edition), Vol. II, Pg. 501.*

ⁱⁱⁱ Rig Veda 1.56.9, Agni is termed as 'apamnapat' (waters progeny).

^{iv} Rig Veda 9.3.7, 9.36.6, 9.86.22

^v Rig Veda 9.74

^{vi} Macdonell, A.A., *Vedic Mythology*. MLBD, Delhi, 1974, Pg. 107.



^{vii} Rig Veda 6.44.2, 6.72.4

^{viii} Rig Veda 10.14.4

^{ix} Rig Veda 10.14.4

^x Rig Veda 10.15.11

^{xi} CS. SU. 26.40

^{xii} Flattery, Schwartz; 1989; Haomaand Harmaline: The Botanical Identity of the Indo-Iranian Sacred Hallucinogen "Soma" and its legacy in religion, language and Middle Eastern folklore.

^{xiii} Yang, Lihui, 2005. *Handbook of Chinese Mythology*. New York: Oxford University Press. ISBN 978-0-19-533263-6

^{xiv} Consult: Owen, 1996. Owen's translations of the respective titles are as follows: Senior Master of Lifespans and Junior Master of Lifespans; or Lord Iris.

^{xv} Poet *Wén Yǐduò*'s translation of *Chu Ci* poems.

^{xvi} Apart from the quoted " " Readers may wish to consult the two other translations quoted here. Steven Owens, 1996, p.158: "I snapped off a hemp bud and blossoms of yao-grass / to give as a gift to Him Who Dwells Apart;/ old age steals upon me and now has arrived;/ His affection withdraws, / He grows more remote." See also Arthur Waley, 1973 (1955): "I pluck the sparse hemp's lovely flower, meaning to send it to him from whom I am separated; age creeps on apace, all will soon be over; not to draw nearer is to drift further apart."

^{xvii} Second Century *Qu Yuan's* follower *Wang Yi's* translation "Shu ma is mythic (or magic) ma."

^{xviii} John A. Rush, pg 123, *The Twelve Gates: A Spiritual Passage through the Egyptian Books of The Dead*.

^{xix} Dr. Stone, *Mystic Bible*, Pg 70

^{xx} The concept of the seven rays was introduced by H. P. Blavatsky

^{xxi} Bailey, Alice, *Esoteric Psychology*, Vol. II.



LANGUAGE DISSIPATION: INDO-EUROPEAN SYSTEM

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THEME OF THE PAPER



Behind and before this analytical keenness, covering it as in a velvet sheath, was the other great mental peculiarity of the race — poetic insight. Its religion, its philosophy, its history, its ethics, its politics were all inlaid in a flower-bed of poetic imagery — the miracle of language which was called Sanskrit or "perfected", lending itself to expressing and manipulating them better than any other tongue.

The aid of melodious numbers was invoked even to express the hard facts of mathematics.

This analytical power and the boldness of poetical visions which urged it onward are the two great internal causes in the make-up of the Hindu (Indian) race. They together formed, as it were, the keynote to the national character. This combination is what is always making the race press onwards beyond the senses — the secret of those speculations which are like the steel blades the artisans used to manufacture — cutting through bars of iron, yet pliable enough to be easily bent into a circle.

They wrought poetry in silver and gold; the symphony of jewels, the maze of marble wonders, the music of colours, the fine fabrics which belong more to the fairyland of dreams than to the real — have back of them thousands of years of working of this national trait.

Arts and sciences, even the realities of domestic life, are covered with a mass of poetical conceptions, which are pressed forward till the sensuous touches the super-sensuous and the real gets the rose-hue of the unreal.



Swami Vivekananda
Historical Evolution of India

Language Dissipation: Indo-European System

Amit Kumar

Abstract

Birth of humans led to the series of evolution and diversity on the earth. Human's ability of thinking sparked the thirst of knowledge inside them. With the course of time, living within the eco-system and observing the cycle of nature, raised questions among them about its cause and meaning. Since, then, it marked the start of building of ideas, assumptions and hypothesis. It began the era of talking, expressing, drawing and writing. Centuries after these developed into a proper linguistics system. The early quest towards the land of rising sun let the dissipation of language in different styles and sound system throughout the world.

Language initiated the most basic part of the civilization i.e., "Socialization and Communalization".

Hunting, agriculture, domestication etc, (as a tradition) started going on hand in hand with spiritual belief, rituals and practices (as a culture). Today, archaeological surveys and scientific analysis mentioned many pre historic conclusions but still ambiguous and biased. Theories in conjunction with scientific approaches have given approximate result so far. This study has exhibited language, its aspects of dissipation and its needs for human advancement.

Keywords: Linguistics, Proto-Language, Alphabets, Writing, Culture, Vowels, Expressions

1. Introduction

"Language is our gene talking, getting things they want."

-Mark Pagel, Prof., Uni. Of Washington

It distinguishes humans from other species. Things can be accomplished by sharing view and thoughts among humans. Language later took the form of writing and speech. As per the thinkers like Jean Rousseau, "language originated from emotions," while Immanuel Kant said, "It has originated from rational and logic thoughts." (fig.1). Egyptians firstly stored all of their actions and reactions then, Phoenicians inspired from them and invented more précised form, Alphabets. It later transferred to Greek and then to Romans and migrated region to region and faced different climatic conditions with cumulative cultural evolution and social learning, altered their accent and gave rise to multiple dialects, tradition etc. Slowly it formed a huge tree of dissipation. Language played significant role in the formation of civilization, literary, education, research and poetry works which thrived the arts and literature in different historic era; for example, Renaissance which led human races to the new heights of thoughts and

morals. Today, in the form of programing in computer technology, as Braille text and sign language, Morse code, the core concept of language has been used in revolutionary way. Hence, language is a holistic part of subjective and objective facet of our life.

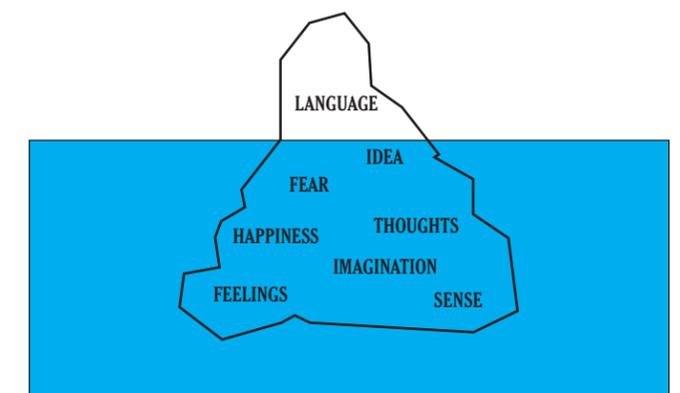
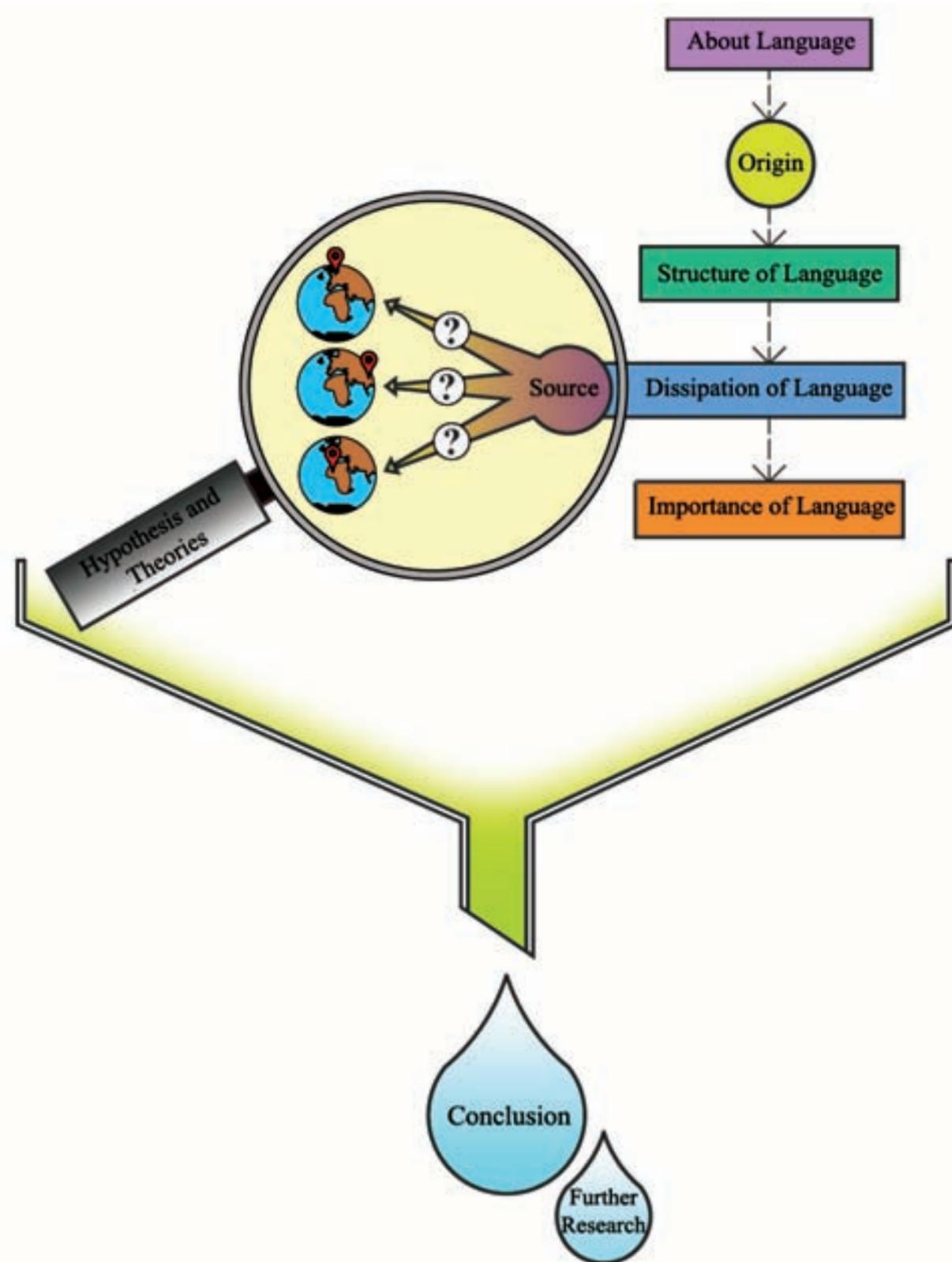


Figure 1. Ice Berg Theory of Language



1.1.1. From Physical to Cognitive Development (Piaget's theory)

It focuses on the physical fitness to counter harsh environment and brain development to grasp, comply and impart information, concepts, skills, languages, learning etc. This process of brain development started with the early evolution of human species in Africa say, Homo habilis (1.5M years ago), seasonal availability of food, water etc. all taught them to act upon with sign language and guttural voice only. But due to lack of communication and communalisation they could survive much longer even outside Africa but their gradual physical and mental growth in the form of new species led them to step out of the continent. Fair and liveable weather out the Africa caused dispersion of population to different directions. Due to sparsely spreading, scarce food and change in climate grew competition of survival among them. More the dispersal of gene, more would be the decrease in cognitive development instead of having stiff body like, Homo erectus, who were more powerful than Homo sapiens but their brain did not devote a lot of space to the part that controls language and speech, observed by John Shea (Professor, palaeoanthropology, University in New York). As per the fossil records they went on making similar basic tools for many years (Hunting hypothesis). Where as "One of the crucial elements of Homo sapiens' adaptations is that it combines complex planning,

developed in the front of the brain, with language and the ability to spread new ideas from one individual to another."(John Shea). Their cumulative cultural evolution and social learning helped them to spread easily. Sense of planning, conversation, trade, and consensus spewed them all over the world. (fig.2)

1.1.2. Linguistic Development (Darwin's Theory of Language Evolution: "Musical Protolanguage")

According to Darwin's Musical Protolanguage Hypothesis, before the advent of language as a speech, ancestors used to produce musical phrases with holistic meaning. First hypothetical stage is the "proto-human cognition" development from an ape-like ancestor to modern humans. Secondly, vocal imitation and finally, imitation of sound with gestures.

The origin of mother language is obscure. As per archeologist, linguists and religious records, once there was one proto language (mother language) through which all languages sprouted. In spite of its origin which has not been defined properly till now, several theories have been framed over the assumptions about it:

- Theory of Continuity: says, it might have evolved from ancestral linguistics
- Theory of Discontinuity: says, it might have evolved suddenly during the course of human evolution
- Innate Faculty: says, it has been genetically encoded
- Cultural System: might have evolved through social interaction.

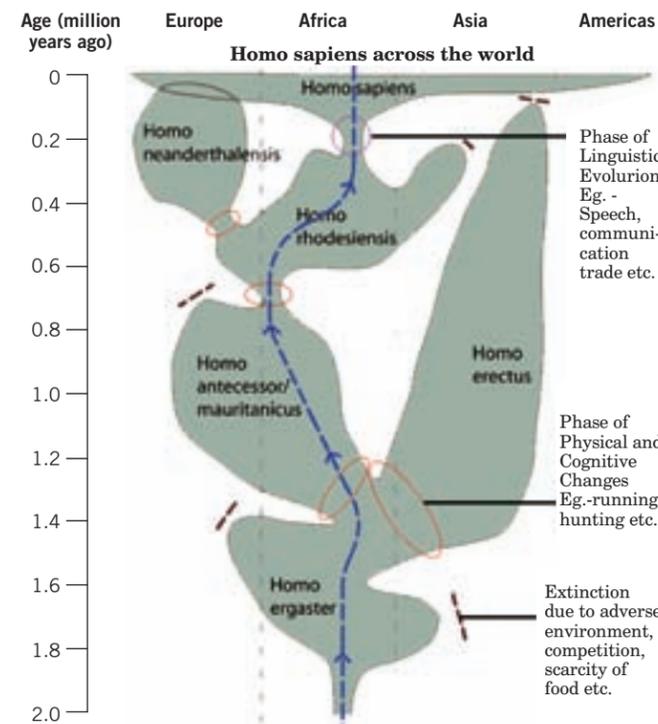


Figure 3. Human and Linguistics Evolution Development Path (Convict creations, prehistory, Author)

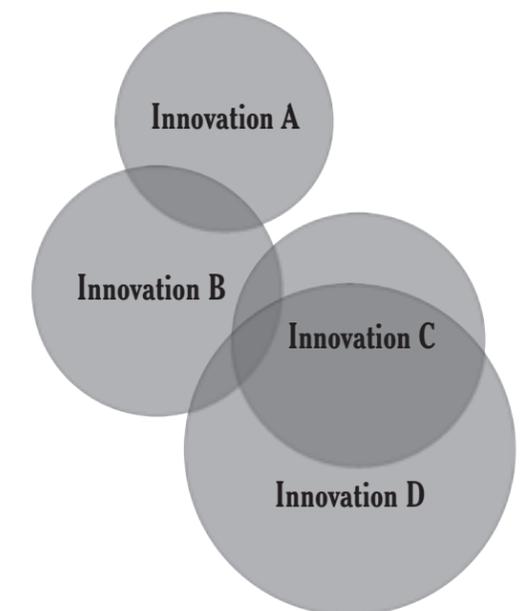


Figure 2a. Wave Model Diagram (Schmidt's Wave Model of linguistics change, 2014)



1.2. Model of Language Dissipation

- Wave model – It states about the language with takes birth due to the influence of two of more overlapping regions speaking different languages.

For example, Oceanic Languages (fig. 2a)

- Tree model – This model states the origin of new languages from its single source proto language. For example, Indo-European Language Family (fig.3)

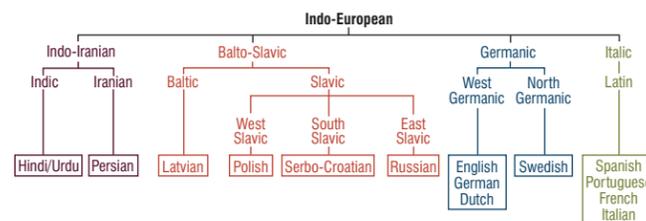


Figure 3. Tree Model Diagram (Essential Humanities)

2. Structure of Language

2.1. Sentence

Group of words meaningfully expresses as a statement. It has further structures. (fig.4)

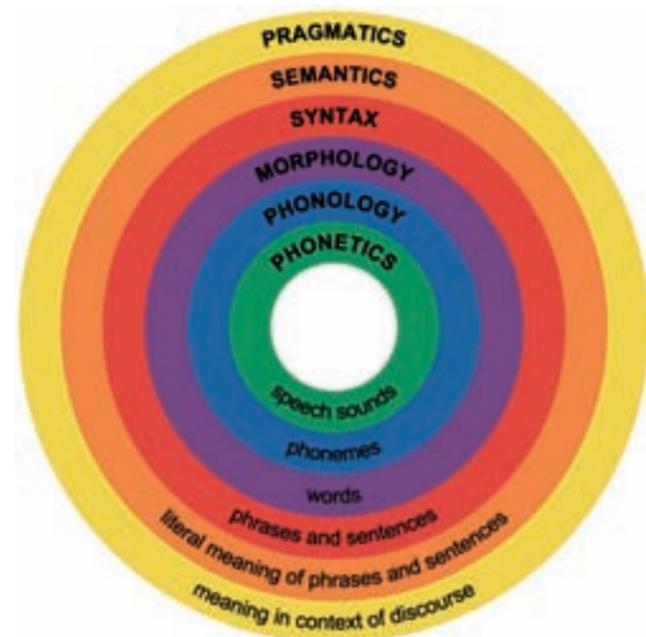


Figure 4. Structure of Sentences (Boundless)

2.2. Alphabets

Alphabets are the sets of letters having specific sounds (phonemes) to write spoken languages. 350,000 years ago, ancestors used Ocher (yellow color pigment from natural earth) and manganese for scribbling and drawing in caves. Around 8,000 years ago, humans were using symbols as words by engraving on stones. For example, Cuneiform symbols.

2.2.1. Evolution of Alphabets

2.2.1.1. Iconography

2.2.1.1.2. Around 1050 BCE, Phoenicians inspired from hieroglyphs of Egyptian civilization simplified their complex figures into short forms i.e. Alphabets and developed first 22 consonants. (fig.5)

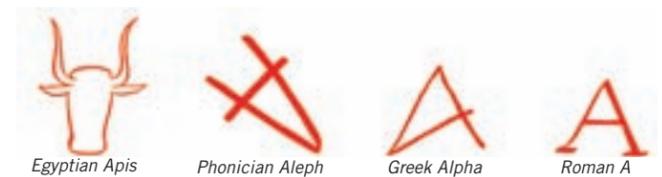


Figure 5. Hieroglyph sign into modern English Alphabet (Hebrew Heart Multimedia)

2.2.1.2. Phonology

“Vowels are the carrier of our voice.” Phoenicians' alphabets did not have any phonetic property. Greeks adopted their letters and modified and retained their alphabets. They invented vowels to include phonetic property to the letters building a systematic phonology of languages. (fig.7)



Figure 6. Evolution of English Alphabets (The evolution of English Alphabets, Sevaan Franks, 2010)

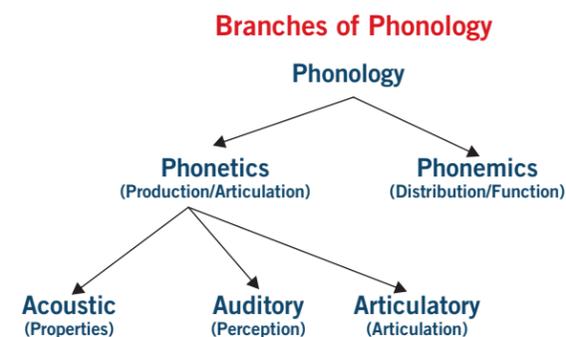


Figure 7. Structure of Phonology (LatestInfoMix, 2015)



3. Dissipation of Language

Transformation or diffusion of language from one region to other happened during the course of time with the following phenomena.

3.1. Migration of Population or nomadic tribes

In Paleoanthropology, first anatomically modernized human race migrated from Africa between around 120,000-60,000 years ago. Subsequently, several other migration took place. Population drift, demic diffusion and mingling with local population, local climate and different physical settings led to the birth of different languages. For instance, Anatolian Language theory, Out of Africa theory etc. (fig.8)



Figure 8. Language flow as per Anatolian Hypothesis (Cradle of Civilization)

3.2. Trade and Commerce

With the continuous influence of different territories due to trade and commerce relationship led to development or dissipation of language between the sea linked countries. For example, Phoenicians alphabetic system influenced all over the Mediterranean. Greek and Etruscans adopted their alphabets to structure their own languages system. (fig.9)



Figure 9. Phoenician trade route and their influenced area. (Eupedia.com)

3.3. By Colonization, War, Politics and Annexations

- Subjugation of native tongue and promotion of colonial language like English, Spanish, Portuguese. For example,

American Continent (most of its southern part) under Spanish colonies, follows Spanish language.

- Formation of Lingua Franca or World Language. For instance, English works as common language in Indian subcontinent as it was under British colony.
- Evolution of new language with the influence of Native tongue like Persian, Urdu. For example, Expansion of Arab Empire (Arabization) towards Iran, Afghanistan, gave birth to a new language, Persian.

4. Major Hypothesis and Theory on Language Dissipation Theory of Phonetic Diversity

Quentin Atkinson, a psychologist, worked over the diversity of phonemes of languages which changes the character of language from region to region. Explained by “Population Bottleneck theory”, there is a loss of genetic variation due to the establishment of new (small) population away from larger (parent) population. Later, this small population undergoes inbreeding which has relatively low genetic variation (genetic

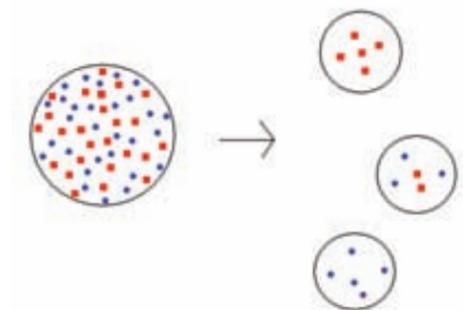


Figure 10. Founder Effect Theory (Zerodamage, 2012)

drift). Thus, are not able to show old complex characteristics. He studied and observed about 504 languages and its geographic distribution of phonemes throughout the world. Observed that Africa has highest genetic variation and Oceania has lowest, this phenomena is called as “Linguistics Drift” or losing of phonemes. His research concluded Africa as a source of Proto language to all the linguistics diversity and supports “Out of Africa Theory”. (fig. no.10,11 and 12)

4.1. Kurgan Hypothesis

This theory was formulated in 1950s by Marija Gimbut as based on historical remains found through archaeological survey at Central Europe. She postulated that the pastoral and warrior nature of people of Yamna culture in Pontic region (living in the North steppes) were the ancestral speakers of

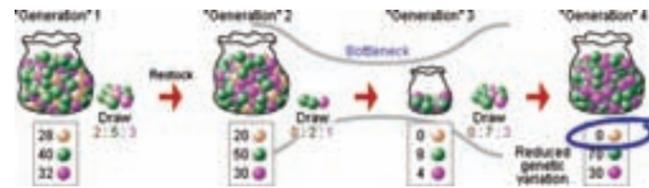


Figure 11. Schematic Diagram of Population Bottleneck Theory (Evolution.berkeley.edu)



Figure 12. Similarity between Population dissipation (70,000 years ago) and Hierarchy of decreasing phonemes of Languages from Africa as a source. (KavinKnabe, 2012)

Proto Indo-European (PIE) language around 3500 BCE. Till up to the date this theory is widely accepted by the researchers (fig. 13). But the archaeogenetic analysis of the evidences has added questions on the origin of Indo-Europeans (IE). The genetic data [R1a1a (R-M17 or R-M198)] associated to IE, as per the analysis founded two different source of its origin (refer fig.14), one in Eastern Europe, around Poland and Russia, and the other in South Asia (around North India).

4.2. Anatolian Hypothesis (Renfrew Theory)

Kurgan theory was challenged by British archaeologist Colin Renfrew. According to his hypothesis, Indo-European race originated from Anatolia region (around Italy) and migrated towards West Europe, and Northern and Eastern Asia during

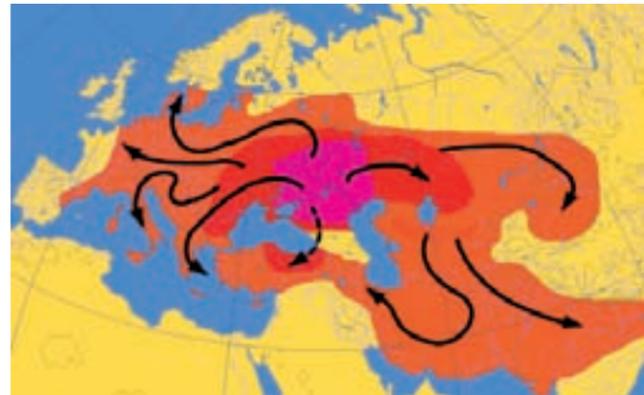


Figure 13. The Kurgan migration (indicated with a dotted arrow). The magenta area corresponds to the Samara culture. The red area corresponds to the area settled by Indo-European-speaking people, and the orange area by 1000 BCE. (Dbachmann, 2005)

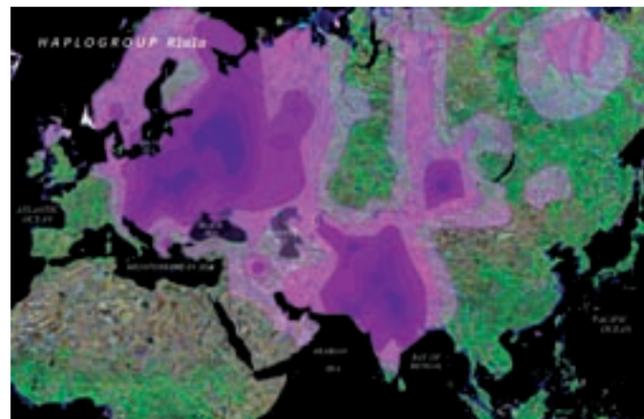


Figure 14. Haplogroup R1a1a distribution. (Maulucioni, 2009)

7000 BCE through peaceful agricultural expansion (Demic diffusion). However, no archaeological evidences have been found till date in support of the theory. (fig.15).

4.3. Indigenous Aryans Theory (Out of India Theory)

This theory strongly rejects the Aryan invasion over India. It gave puzzling results about the origin for the PIE language. Unfortunately no conclusion was reached to a firm base. However, it seems to be reinforced by "Out of Africa Theory", the most widely accepted model of the geographic origin according to which two migrations took place out of African continent, one of it across Red Sea along the coastal regions to India (the coastal route)(fig.16) which is represented by



Figure 15. Anatolian Hypothesis (Maulucioni, 2009)

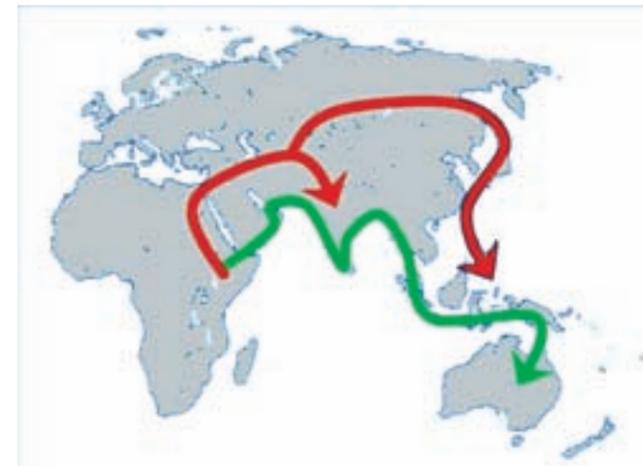


Figure 16. Migratory route as per Out of Africa Theory. (Mark Prigg, 2014)

haplogroup M (region for subsequent Romanic migration from western India towards Europe between 6th and 11th century). This theory gave proof about the high genetic diversity and lineage in south and west Asia (India, Pakistan etc.) than European regions. Other genetic and scientific revelations are:

- Toomas Kivisild, geneticist (2003) during the study came to various conclusions like:

"The combined results from mtDNA, Y-chromosome and autosomal markers suggest that Indian tribal and caste populations derive largely from the same genetic heritage of Pleistocene southern and western Asians and have received limited gene flow from external regions."

"More than 60% of Indians have their maternal roots in Indian-specific branches of haplogroup M, which was brought to Asia from East Africa, along the southern route." (Kivisild et al. 1999a, 1999b, 2000, Quintana-Murci et al. 1999)

- Indian scientist Susanta Roy Choudhury, studied 644 samples of mtDNA from some ten Indian ethnic groups and found that fundamental genomic unity of ethnic is India revealed by analysis of mitochondrial DNA.
- Kivisild (2000) also studied the Y-DNA to establish the Aryan invasion and found that "Neolithica griculture system and Indo-European language arose in India and spread to Europe."

5. Importance of Language

5.1. Language as Bio-diversity

Areas with high biological diversity like hot spots and wilderness areas homes about 70% of our world language.

"We looked at regions important for biodiversity conservation and measured their linguistic diversity in an effort to understand an important part of the human dimension of these regions,"

(Larry J. Gorenflo, Professor, Penn State University)

The extinction of such language would cause loss of information about rare and fragile environment. Conservation of these habitats depends upon the cultural and linguistic conservation of human inhabitants and their survival greatly depended on the conservation of the environment. Researchers have hypothesized that indigenous cultures and languages preserves wildlife and eco-system.

"Language bears the stamp of the physical environment in which the speakers are placed" (Sapir 1912, pp. 228, 229)

5.2. Language as Culture

Humans learn their culture through language. "Linguistic Relativity" popularly known as Sapir-Whorf Hypothesis states that structure of language affect the way of conceptualizing (worldview) and influence their perception process of its respective speakers. There are certain thoughts and perceptions in one language that cannot be felt by person speaking another language.

"Language does not exist apart from culture, that is, from the socially inherited assemblage of practices and beliefs that determines the texture of our lives."

(Sapir, 1970, p. 207)

"In a sense, it is 'a key to the cultural past of a society."

(Salzmann, 1998, p. 41)

5.3. Advanced Language System

Systematic study of concept and structure of language, has so far helped in its application in revolutionary communication system like, **Braille**, a tactical writing system used by blind and visually impaired in the form of codes; **Morse-Code**, in

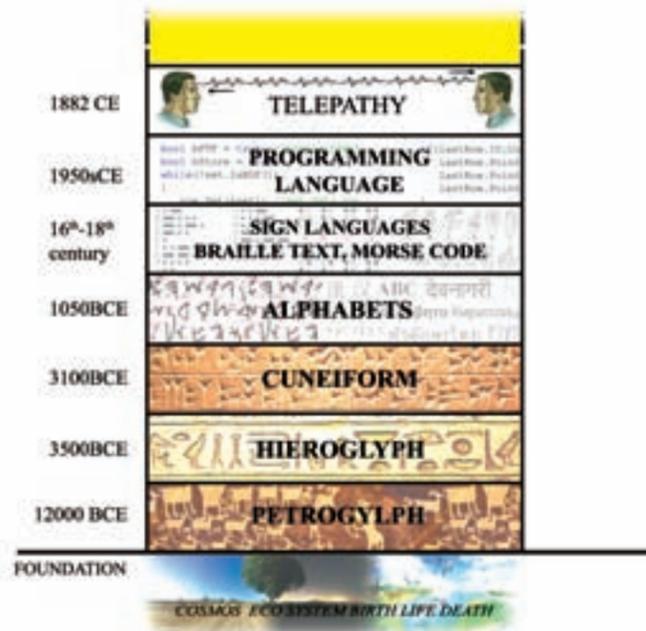


Figure17. Development Stage of Language System. (Author)

which letters are represented in dots and dash in the form of electronic pulse. It is slow but reliable means for sending and receiving wireless message; **Sign Language**, use of manual steps and body languages to express the views without any vocalization; **Telepathy**, Transmission and receiving of message between two brains without any writing, signs, vocals and body interaction.

6. Conclusion

Neurocognitive, Physical and Social development are the 3 dimensions of development in the history of human species. Several theories postulated about the source of language by tracing early migrations yet refuted for any of its weak aspects citing about its loose evidences and study. Scientist has slowly introduced more subtle research process like genetic analysis which now has gradually revealing true linguistics knowledge and historic imprints like Aryan invasion theory, once widely accepted has been now brought down as a myth. However, by the pre historic, ever since the evolution of human take place, since then language started taking its shape from a single humming to a sophisticated alphabetical linguistics. Thus, evolution of language very much corresponds to the evolution of human species.

Language incorporates knowledge of lineages. As it stores local environmental knowledge in indigenous names, taxonomies and complex natural system, it has fundamental linkages and should be used to deduce solid conclusions and disclosures about true history. Language has performed as a

fundamental base for the knowledge system from which humans are continuously cultivating and harvesting new opportunities and achievements. Flow of civilisation, religious belief, engineering, literature and arts to different regions were facilitated only by the language system. Finally, formed a coherent social system throughout the world. As language transmit culture and history of people its extinction is equal to the loss of inherited knowledge.

“Surely, just as the extinction of any animal species diminishes our world, so does the extinction of any language. Surely we linguists know, and the general public can sense, that any language is a supreme achievement of a uniquely human collective genius, as divine and endless a mystery as a living organism.”

-Michael E. Krauss, *Linguist*(1992:8)

6.1. Further research

Most of the hypothesis manifested about the possible cause and source of language and its dissipation, have concluded the research by only looking over specific fields or single view point like Anatolian theory, simply a hypothesis, took references from the pre-historic human activity i.e. agriculture system as an assumption, Kurgan Hypothesis was based only on archaeological findings, and finally Phonetic diversity in language based on genetics and phonemes of languages. Human biasedness and undue interventions temper documentations. To get the result with the major possibility and minor objections, it should go through all the possible research fields (archaeological, cultural, linguistics, anthropological, genetics, historical and other scientific fields) of study to come up with an unambiguous and unanimous result.

Since, diversity of language also has some dark sides, in spite of being the most intrinsic source of communication for universal understanding, so far it has created several political boundaries and geo-political tension among the nations. More the diversity, more the prevalence of social tensions. For example, regional disparity in India, loosening of EU. Even to join the world in a system of auxiliary language (Esperanto, 1887) was also unsuccessful. No matter how diversified demography the world has, our further research should aim towards building the sense of the singularity or commonness in different languages for mutual and peaceful coexistence.

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TATAR-MONGOLOID MIGRATION AND ASIA: A FORGOTTEN CASE IN APPLIED CULTURAL ANTHROPOLOGY

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THEME OF THE PAPER



The earliest glimpses we have of this race show it already in the possession of this characteristic, as an instrument of some use in its hands.

Many forms of religion and society must have been left behind in the onward march, before we find the race as depicted in the scriptures, the Vedas.....

An organised pantheon, elaborate ceremonials, divisions of society into hereditary classes necessitated by a variety of occupations, a great many necessities and a good many luxuries of life are already there.

Most modern scholars are agreed that surroundings as to climate and conditions, purely Indian, were not yet working on the race.

Onwards through several centuries, we come to a multitude surrounded by the snows of Himalayas on the north and the heat of the south — vast plains, interminable forests, through which mighty rivers roll their tides. We catch a glimpse of different races — Dravidians, Tartars, and Aborigines pouring in their quota of blood, of speech, of manners and religions. And at last a great nation emerges to our view — still keeping the type of the Aryan — stronger, broader, and more organised by the assimilation.

We find the central assimilative core giving its type and character to the whole mass, clinging on with great pride to its name of "Aryan", and, though willing to give other races the benefits of its civilisation, it was by no means willing to admit them within the "Aryan" pale.



Swami Vivekananda
Historical Evolution of India



Tatar-Mongoloid Migration and Asia: A Forgotten Case in Applied Cultural Anthropology

Tiyasha Sengupta

Abstract

Ethnic intermingling, brought about by migration is one of the integral phenomena of the development of a civilization, and subsequently, a culture. This project attempts to map the cultural outcomes of the Tatar-Mongoloid migration that took place between 25,000 B.C to 10,000 B.C, and use it as an approach in the study of the Indo-European linguo-cultural system.

The origin of the Tatar-Mongoloids, can be located in the Central Asian region. Consequently, migration to the various regions of the world followed. The project will focus on the eastward Tatar-Mongoloid dispersion through Asia to the Americas along the Bering Land Bridge. The various linguistic, and socio-cultural implications of the aforementioned route will be analyzed creating an eastward dimension of dissipation of language and culture.

1. Introduction

1.1. Human Migration and its Significance

'Human migration is [...] a permanent or semi-permanent change of residence of an individual or a group of people.' (Oderth,2002).

Since the dawn of mankind, migration has been a constant feature, and has extensively contributed in the shaping of human identity. A recurring phenomenon, migration has continued to exert its influence on a region, and is thus one of the pivotal aspects taken into account in the study of human sciences. The interaction between the local and the migrant population, resultant of migration is immensely significant, often leading to social, political and linguistic influences on the existing culture of a region, and vice versa. The project strives to view the Indo-European linguo-cultural system with respect to the eastward Tatar-Mongoloid migration.

Existing paleontological and genetic resources place the migration of anatomically modern humans between 70,000 B.C

to 60,000 B.C, out of Africa to the rest of the world. This paper focuses on the inland route of migration from the junction of Central and East Asia i.e the migration of the Tatar-Mongoloids, to the North, Central and finally South America and establish its significance as one of the primary connectors of prehistoric and ancient Asian and American cultures.

1.2. The Tatar-Mongoloid Migration Route

The evidences of the eastward Tatar-Mongoloid migration are aplenty. In 1894, Canadian scientist and surveyor G.M Dawson (1894), echoing Spanish missionary and naturalist Jose de Acosta (1590) proposed the existence of a 'wide terrestrial plain connecting North America and Asia'. His asseveration was further strengthened by geologist David M. Hopkins (1965) in 'The Cenozoic History of Beringia: A Synthesis'. Also, 19th century Darwinian scholar and ethnologist Prof. Thomas Huxley (1870) categorized the indigenous Americans among the Mongoloids upon observing identical 'habit of skin and hair' between the two groups (Huxley,1870). In addition, Robert Laughlin's (cited in O'Niell,2004), study of the Aleut people



designated the Bering Land bridge as one of the primary routes of pre-historic human migration. The Genographic Project, an exhaustive study of the distribution of various haplogroups, launched by National Geographic in 2005, has acknowledged the relevance of the aforementioned path - a claim further bolstered following 'the first [DNA] sequencing of a full Paleo-American genome, at the Anzick site in western Montana' in 2014, to confirm that the 'ancestors of modern Native Americans did indeed originate from a population in Asia' (National Geographic, 2015).

1.3. Who are the Tatar-Mongoloids?

The Tatar-Mongoloid is the Mongoloid-Uraloid population with origins in the North and Central Asia, east of the Ural Range. A. H. Keane (1896) in *Ethnology* divides the Mongol family into two main subgroups, with respect to their patterns of dispersion. The Mongolo-Tatar to the left, towards America and the Indo-Tibetan to the right, towards Oceania. Recent studies, like *The Journey of Man: A Genetic Odyssey* (documentary) conducted by Dr. Spencer Wells (2003) as a part of The National Geographic Human Genographic Project, used advanced DNA analysis of the Y-chromosome markers to reveal an 'ancient genetic pincher movement' as the route of migration ramified to north and south of the mountain ranges, and met again in the northeastern coast of China (see Fig.2.) -



Fig. 1.: Map showing early human migration from Africa to Asia to the Americas
(Source: <http://www.nationalgeographic.com/adventure/0508/excerpt1.html>)

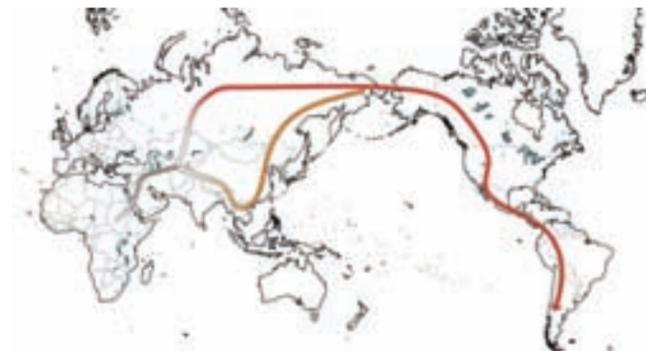


Fig.2.: Map showing the Tatar-Mongoloid route of migration

the earliest people to colonize southern Siberia would have had members of both the central Asian M45 and the older Eurasian M9 clans, although drift appears to have caused them to lose most of their ancestral Middle Eastern chromosomes by this point [(see Fig.1)].

As with the Eurasians who entered India on the other side of the Hindu Kush, some of these Eurasian clan members would have migrated to the north and east, guided in their journey by the Tien Shan mountains. Some of them, [...] made it into present-day China (Wells,2002).

Further migration then occurred eastward to North America, and finally to South America along the western coastline.

2. Literature Review

2.1. Migration

Human migration results in socio-cultural, religious and linguistic interactions between the local and the immigrant culture at times resulting in the formation of cultural hybrids. Jan and Leo Luccasen and Peter Manning (2010) offers a multivalent and interdisciplinary approach to this "fundamental and structural" aspect of 'human civilization' in *Migration History in World History: Multidisciplinary Approaches*. Likewise, in *Past Human Migrations in East Asia*, Alicia Sanchez-Mazas et. al. (eds) (2008) views this very phenomenon through the lens of genetics, archaeology and linguistics. *Ancient Human Migrations: A Multidisciplinary Approach* by Peter Neal Peregrine, Ilia Peiros and Marcus W. Feldman (eds.) (2009) adopt similar approaches. 'Peopling of the Continents: Australia and America' by Laughlin and Harper (1988) analyzes the genetic data of human migration along the Bering Land Bridge route. Forensic anthropologist James Chatters (2002) further provides an in-depth study of the pre-historic migration routes from Asia to America in *Ancient Encounters: Kennewick Man and the First Americans*.

2.2. Language

Language, like other social and cultural factors, holds key evidences of human migration, and vice-versa. Philologist Otto Jesperesen (1922) in *Language Its Nature Development and Origin* designates language as 'a result of previous development' as well as 'the starting-point for subsequent development', and its need to be studied from multiple viewpoints. Such an effort is, to an extent, evident in all the four volumes of *Archaeology and Language* by Roger Blench and Matthew Sprigg (eds.) (1997). In 'Homo Sapiens Populates the Earth: A Provisional Synthesis, Privileging Linguistic Evidence', Patrick Manning (2006) appraises various linguistic phyla (including the Indo-European group) and beseeches the need to study 'language classification' in 'interpreting early human migrations' along with corresponding genetic and archaeological data. On a more specific note, linguist Michael Fortescue (1998) in *Language Relations Across The Bering Strait: Reappraising the Archaeological and Linguistic*



Evidence intricately assesses the Eskimo-Aleut group of languages with respect to the major language groups of Central Asia.

2.3. Mythology

Mythologies and religious practices showcase important socio-cultural markers. In *The Sacred and the Profane*, Mircea Eliade (1959) provides a multidimensional look at religion in the 'opposition between sacred and profane', while John Campbell, in *Masks of God: Primitive Mythology* intricately studies various aspects of religions - their emanation, their evolution and in some cases, metamorphosis. Eliade (1972) further offers an exhaustive cultural analysis of shamanistic practices in the world in *Shamanism: Archaic Techniques of Ecstasy*. Combining the study of human migration and mythological analysis, Graham Hancock and Santha Faiia (1998) in *Heaven's Mirror: Quest for the Lost Civilization* highlights the similarities in the impeccable astronomical and scientific knowledge and geometrically accurate architecture of major pre-historic and historic civilizations separated geographically as well as chronologically. In *Fingerprints of the Gods*, Hancock (2001) tries to trace their origins to a common civilization, which itself ceased to be. Michael Witzel (2012), in *The Origins of the World's Mythologies* proposes the Historical Comparative method to view the 'development of human mythology'.

2.4. Iconography

The study of symbols and icons is integral to the study of cultures, as suggested by Albert C. Moore (1977) in *Iconography of Religions: An Introduction*. Another excellent example iconographic speculations is the exhaustive study of the origin, propagation and evolution of the primitive symbol of Swastika in Thomas Wilson's (1896) *The Swastika*. Mircea Eliade (1961) realizes the connotative implications of such archetypes, and avers in *Images and Symbols: Studies in Religious Symbolism*, that 'the symbol, the myth and the image are of the very substance of the spiritual life' and are indispensable to the socio-cultural assessment of a population.

Despite its acknowledged importance, the socio-cultural and linguistic implications of the Tatar-Mongoloid migration have not been extensively examined. This paper is a humble endeavour to detect the cultural footprints along the Tatar-Mongoloid migration trail from Central Asia to the Americas from 25,000 B.C to 10,000 B.C ($\pm 5,000$ years) by carrying out a brief analysis of the linguo-cultural and social implications of the route. The study aspires to present a new and holistic perspective of assessing Ancient Indo-European and American cultures.

3. Broad Linkages

A number of linguo-cultural congruities are observed along the Tatar-Mongoloid migration trail. A few examples are as follows-

3.1. Etymological Similarities

Linguists Greenberg and Ruhlen (1992) in 'Linguistic Origins of Native Americans' adduce how '[a] single etymology illustrate both the unity of Amerind and its ties to the Eurasiatic'. The Proto-Indo-European root *melg-*, denoting the act of milking, and also the noun milk is quite similar to the Proto-Finno-Ugric word for breast, *malke*. Likewise, *melug-* in Eskimo-Aleut means 'to suck'. In the Dravidian language of Kurux, *melkha* is the term for throat, and is quite synonymous to the Proto-Amerind *maliq'a* and various other Amerindian languages including Quechua (*malq'a*).

Another etymological similarity can be drawn between *ahi* a Sanskrit word for snake, and the name of the American state of Ohio. Interestingly, Ohio is the home of the Great Serpent Mound of the Adena Civilization.

3.2. Mythological and Religious Iconographical Similarities

Mother worship is a common cultural feature observed along the Tatar-Mongoloid route of dispersion. Maternal goddesses have been, since the pre-historic times, been worshiped for fertility. A striking iconographic similarity is observed in the Indus Valley Mother Goddess and the Inca goddess, Pachamama (see Fig.3.). Both deities are portrayed as having prominent bosoms, broad abdomens and are shown wearing fan-shaped headgear.



Fig. 3.: (left to right) Indus Valley Mother Goddess, Pachamama



Fig. 4.: (left to right) Mayan tree of Life, Tengri tree of life on the shaman's drum



Another parity is seen in the figures of the cosmic tree or the World Tree, a recurring motif in the cosmology of numerous religions. Often considered to be the *axis mundi*, located at the centre of the world, it is believed to connect the underworld, the middle world and heaven. The resemblance between the significance and the depiction of the cosmic tree of the Tengrist (Mongolian Shamanism) and the *wacah chan* Ceiba tree of the Mayan cosmology cannot be ignored.

4. Conclusion

As one of the major routes of pre-historic human migration, the Tatar-Mongoloid dispersion has influenced the various aspects of language, society and culture. The broad linkages stated above are but a few of the myriad examples of the cultural footprints that have resulted from it. It can, undoubtedly offer a new perspective to the study of the development and propagation of the Indo-European as well as other linguo(a) - cultural systems, and harbours ample potential and prospects for further social scientific scrutiny.

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LAND OF PUNT: INDIA AND EGYPT – EXPLORING ANCIENT TIES

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THEME OF THE PAPER



“

A gentle yet clear brushing off of the cobwebs of the so-called Aryan theory and all its vicious corollaries is therefore absolutely necessary, especially for the South, and a proper self-respect created by a knowledge of the past grandeur of one of the great ancestors of the Aryan race — the great Tamilians. We stick, in spite of Western theories, to that definition of the word "Arya" which we find in our sacred books, and which includes only the multitude we now call Hindus. This Aryan race, itself a mixture of two great races, Sanskrit-speaking and Tamil-speaking, applies to all Hindus alike. That the Shudras have in some Smritis been excluded from this epithet means nothing, for the Shudras were and still are only the waiting Aryas — Aryas in novitiate.

Though we know Pandit Savariroyan is walking over rather insecure ground, though we differ from many of his sweeping explanations of Vedic names and races, yet we are glad that he has undertaken the task of beginning a proper investigation into the culture of the great mother of Indian civilisation — if the Sanskrit-speaking race was the father. We are glad also that he boldly pushes forward the Accado-Sumerian racial identity of the ancient Tamilians. And this makes us proud of the blood of the great civilisation which flowered before all others — compared to whose antiquity the Aryans and Semites are babies.

We would suggest, also, that the land of Punt of the Egyptians was not only Malabar; but that the Egyptians as a race bodily migrated from Malabar across the ocean and entered the delta along the course of the Nile from north to south, to which Punt they have been always fondly looking back as the home of the blessed.

This is a move in the right direction. Detailed and more careful work is sure to follow with a better study of the Tamilian tongues and the Tamilian elements found in the Sanskrit literature, philosophy, and religion. And who are more competent to do this work than those who learn the Tamilian idioms as their mother-tongue?

As for us Vedântins and Sannyâsins, ore are proud of our Sanskrit-speaking ancestors of the Vedas; proud of our Tamil-speaking ancestors whose civilization is the oldest yet known; we are proud of our Kolarian ancestors older than either of the above — who lived and hunted in forests; we are proud of our ancestors with flint implements — the first of the human race; and if evolution is true, we are proud of our animal ancestors, for they antedated man himself. We are proud that we are descendants of the whole universe, sentient or insentient. Proud that we are born, and work, and suffer — prouder still that we die when the task is finished and enter forever the realm where there is no more delusion.

”

Swami Vivekananda
Aryans and Tamils

Land of Punt: India and Egypt – Exploring Ancient Ties

Aman Bhushan and Priyatham

Abstract

The paper underlines the controversies regarding the existence, location and the roots of Land of Punt in India. Here we also incorporate the eminence of this land as a magnificent trading capital and its trading goods and methods of trade. Some enlightenment on the trade route followed and the amazing marine technology in practice during that era. Still many aspects regarding this antique land is still a unravelled mystery, thus leading to opening of many other research areas about it.

Keywords: Egyptian civilization, trade relations, land of ophir, marine technology, India

1. Introduction

“Suddenly I heard a noise as of thunder, which I thought to be that of a wave of the sea. The trees shook, and the earth was moved. I uncovered my face, and I saw that a serpent drew near.....his body was as overlaid with gold, and his colour as that of true lazuli..... it was the prince of the land of Punt...”

---”The shipwrecked sailor”, 2200 B.C.

The Land of Punt, also called Pwenet, or Pwene by the ancient Egyptians, was an old kingdom. A trading partner of Egypt, it was known for producing and exporting gold, aromatic resins, blackwood, ebony, ivory, and wild animals. The region is known from ancient Egyptian records of trade expeditions to it. Some biblical scholars have identified it with the biblical land of Put.

At times Punt is referred to as “Ta netjer”, the “land of the god”.

In the 12th Dynasty, Punt was immortalized in Egyptian literature in the very popular ‘*Tale of the Shipwrecked Sailor*’ in which an Egyptian sailor converses with a great serpent who calls himself the ‘Lord of Punt’ and sends the sailor back to Egypt laden with gold, spices and precious animals.

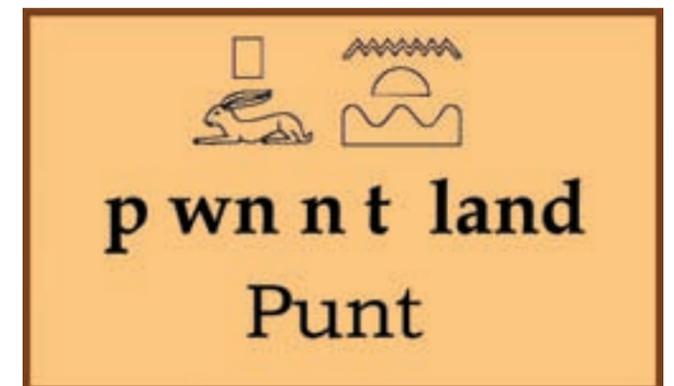


Fig.1(a). Egyptian spelling "pwenet" it should be noted that the feminine "t" ending was not pronounced during the New Kingdom

Some of the scholars have doubted even about the existence of such a wealthy land. They believe that such a land was only a myth and thus referred to as “land of god”.

There are many controversies regarding the land of Punt. Few as stated below :

- Where exactly was this Land of Punt?



- To what race did the resident of this land belonged to? Where they Asiatic?
- Egyptian being such a stronghold in power so why it didn't evade the Land of Punt? Neither is there any records of this land being evaded by any foreign civilisation?
- Was it really a mythical land? Etc.

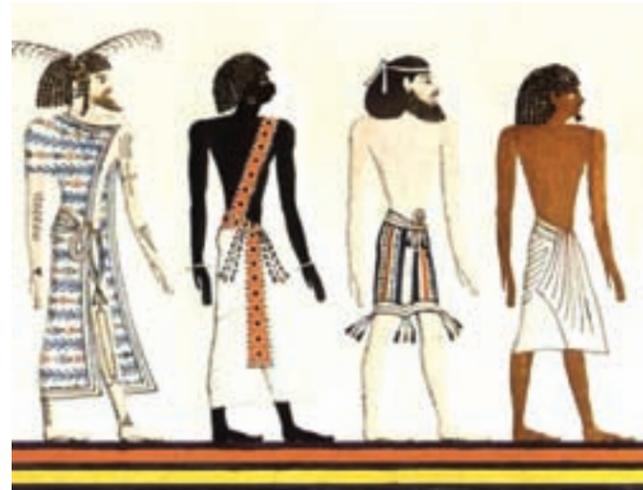


Fig.1(b). The Ancient Egyptian funerary text known as the Book of Gates distinguishes "four races of men". These are the Egyptians, the Levantine peoples or "Asiatics", the "Nubians" and the "fair-skinned Libyans".

The rise of so many controversies is due to the fact that we have to rely solely on the ancient Egyptian information for it. No other ancient civilization, so far, has unearthed a single reference to the land of Punt—which is unusual. This would imply that either Punt only dealt with Egypt (not likely), or else other societies referred to it by other names.

2. Land of Punt and its relation with Egypt

2.1. Early History of Land of Punt

General period of existence B.C 2500 to 600 B.C.

According to Prof. Pankhurst, Punt dates back to the cradle of Egyptian civilization. Pharaonic records reveal that as early as the First or Second Dynasties (3407-2888 BC) the Egyptians were in possession of myrrh, the Ethiopian borderlands.

The earliest record of Punt is found on the Palermo Stone, a broken monument on which a list of the kings of the first five dynasties is recorded. According to the Palermo Stone, Sahure, Pharaoh of the Fifth Dynasty (c. 2462-2452 B.C.) imported 80,000 units of *'ntyw* (myrrh or frankincense) as well as large quantities of electrum (an alloy of silver and gold) from Punt.



Fig.2(a). Queen Ati, wife of King Perahu of Punt, depicted on pharaoh Hatshepsut's temple at Deir el-Bahri.

2.2. People and Settlement

Puntites at first are depicted with dark-reddish complexions and fin features wearing long hair, but by the 18th Dynasty, they had apparently adopted a more close cropped hair style. They lived in beehive-shaped houses raised on stilts above water indicating that the land was in coastal region. Their natural environment must have been a fertile and rich one.

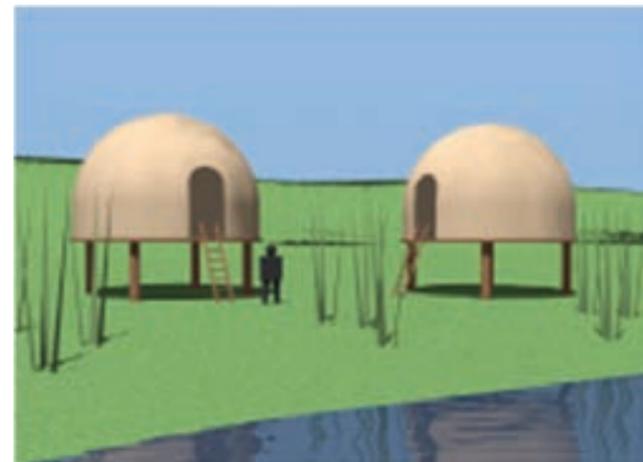


Fig.2(b). Huts of Land of Punt as in relief

2.3. Trade relation with Egypt

The Punt expedition provided Egypt with numerous luxury items. Most in demand were aromatic resins, myrrh and frankincense, which the Egyptians used for religious ceremonies. The Egyptians even brought back myrrh trees, their root balls protected in baskets, to be replanted at various



temples. Other desirable commodities included panther, leopard, and cheetah skins; ivory; ebony; gold; live animals such as baboons and cattle; semiprecious stones; and spices.



Fig.2(c). Antyu trees with their root contained within baskets, and being transported to ships for their return to Egypt and re-planting at Hatshepsut's temple at Deir El-Bahri.

All the traded items were native to Punt, but were gathered further inland by the Puntites expressly for the Egyptian trade. Thus stating the fact that Punt had a good connection with neighbouring land or acted as the trading capital for even them.

In return, the Egyptians traded beer, wine, fruit, meat, jewellery, weapons, and other small items.

The earliest recorded Egyptian expedition to Punt was organized by Pharaoh Sahure of the Fifth Dynasty (25th

century BC). However, gold from Punt is recorded as having been in Egypt as early as the time of Pharaoh Khufu of the Fourth Dynasty.

Subsequently, there were more expeditions to Punt in the Sixth, Eleventh, Twelfth and Eighteenth dynasties of Egypt. In the Twelfth dynasty, trade with Punt was celebrated in popular literature in the *Tale of the Shipwrecked Sailor*.

One of the greatest trade between the two nations can be accounted during the 18th Dynasty rule of Queen Hatshepsut. This expenditure is of great concern because it puts an end to the five Dynasties gap of trading between the two nations as after 12th dynasty rule there has been no recorded expeditions.

The contacts all appear to have been of a more or less of peaceful nature. Although Hatshepsut sent five ships and the reliefs in her mortuary temple clearly show armed men. There is no record of a military conflict. It must also be noted that the submissive character of the Puntites is very much stressed in Hatshepsut's account of the event.

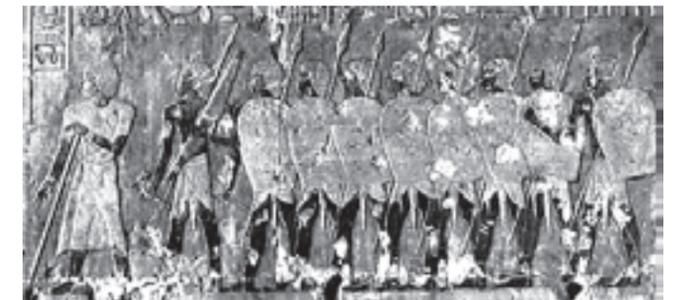
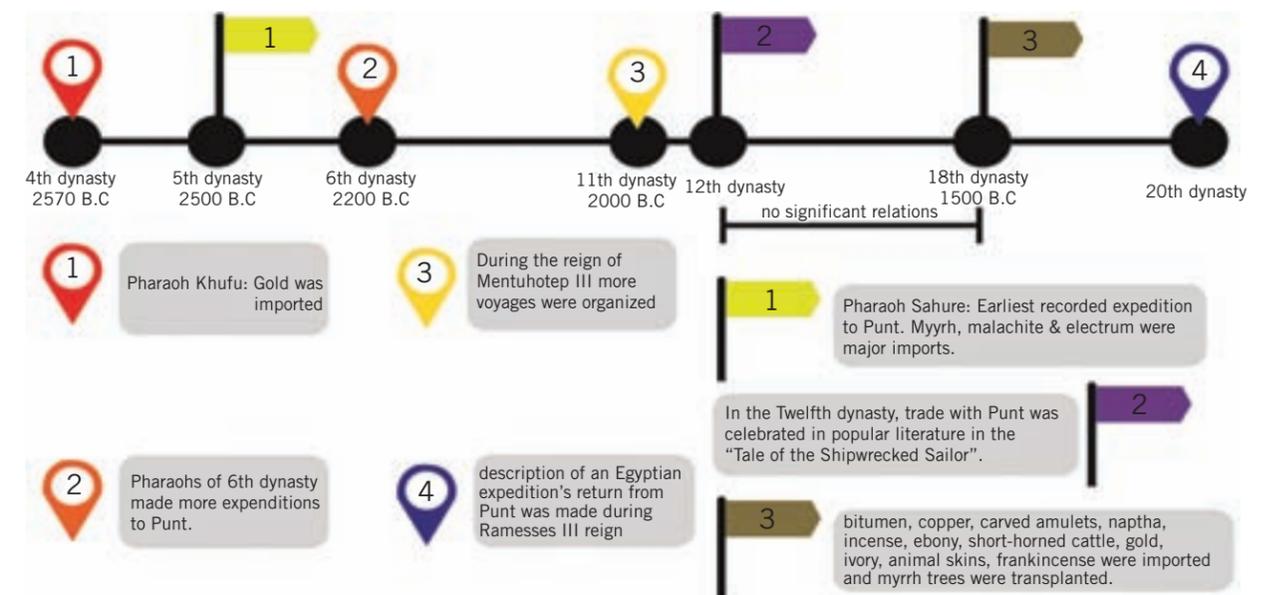


Fig.2(d). The Egyptian soldiers arrive at Punt. It is interesting to note that they are led by an unarmed man, but that on the other hand, the military presence was notable.





2.4. Trade Route

Majorly two different routes were taken by Egyptians to reach their exotic destination of trading.

- The Nile River Route
- The Red Sea Route



Fig.2(e). Different routes taken to reach the land of Punt

As clearly mentioned and deciphered from the inscriptions that one had to travel south, down the Red sea, to reach the exotic land of Punt but similar products could also be obtained by travelling south along the Nile River. Thus stating as an alternate route to Punt.



Fig.2(f). The trade route followed and short summary of Queen Hatshepsut's expedition to Punt

In the Early Middle Kingdom, during the Eleventh Dynasty rule, a new trade route was established involving the port of Mersa Gawasis to embark on the voyage into the Red Sea. A desert route connection between Nile and Red Sea was established through Wadi Hammamat.

2.5. Location of Punt

Punt's location is uncertain, but it was probably located south of Egypt near the coast of the Red Sea at what is now Sudan or Eritrea. Because references to Punt appear in a wide variety of ancient Egyptian texts and these texts cover such a long chronological period (roughly 2,000 years), it is not clear that "Punt" means the same thing at all times.

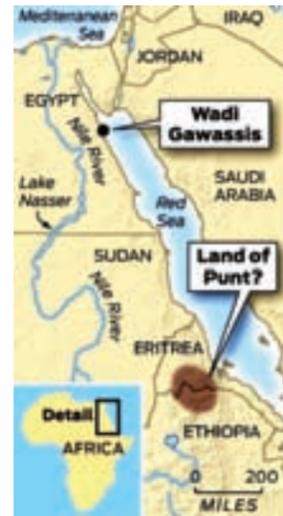


Fig.2(g)



Fig.2(h)

Thus, the location of Punt seems to shift over time, and by the Greco-Roman period (310 B.C.-A.D. 395), it seems to have cloaked on an almost mythical character. Nevertheless during all periods, the Egyptians considered that they had a special relationship with this exotic foreign land, and they always demonstrated a high regard for the Puntites and their business.

2.6. Other Relevance: Land of Ophir

Introduction

Ophir is a port or region mentioned in the Bible, famous for its wealth. King Solomon received a cargo of gold, silver, sandalwood, pearls, ivory, apes and peacocks from Ophir every three years.

India, An Option for Ophir

- Dravidians were well known for their gold and precious stones, ivory and peacocks.



Transformation of solar boat



Fig.3(a). Oldest inscription showing a beetle and sun at the center of boat



Fig.3(b). inscription with Pharaoh in the deckhouse and more curvy stern



Fig.3(c).later inscriptions with heavier base and mast. Affixed figure heads to bow facing backwards.

- Sandalwood came almost exclusively from South India in ancient times.
- In a dictionary of the Bible by Sir William Smith, we find Hebrew words for peacock, ivory, cotton-cloth, apes etc. were derived from the Classical Tamil words. E.g.: peacock - Thukki in Hebrew and Thogkai in Tamil.

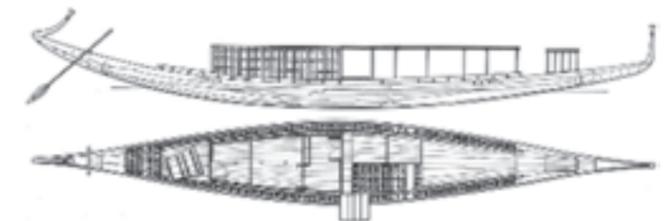
Locating in India

Ophir, referring to the country of the port Tarshish may well refer to the:-

- Nation of the Tamil Velir-Naga tribe Oviyar in ancient Jaffna, who lived around the famous port towns of Mantai and Kudiramalai, home to the historic Thiruketheeswaram temple.
- A town of Abhira kingdom, near the Indus River in modern day state of Gujarat, India.
- Josephus, a first century scholar connects Ophir with the river Kabul.

Planking

- Boat has its outer frame built first.
- Planks are sculptured so that they follow the shape of hull and they lock together like jigsaw puzzle. It has no nails.
- Along with puzzle-piece joggling, adjacent planks are connected with mortise-tenon joints.
- To avoid leakage, rope is not wrapped around or through the planks. Rather, they sewed the boat by carving many v-shaped channels into inside faces of planks.



3. The Marine Technology

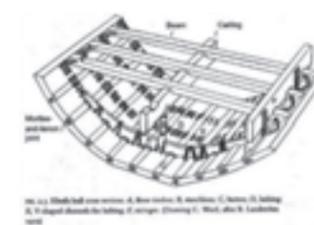
3.1. Khufu's Ship

What was the boat used for?

- The voyage of the sun-god through creation might be portrayed as a boat journey.
- As a funerary craft to transport Khufu's body on the Nile to the Giza necropolis or on a final pilgrimage to holy sites.

What was the deck house used for?

- Was Khufu's body placed here for transport across the Nile for interment in the Great Pyramid?
- Was the Pharaoh meant to find shelter here while traveling in the afterlife?

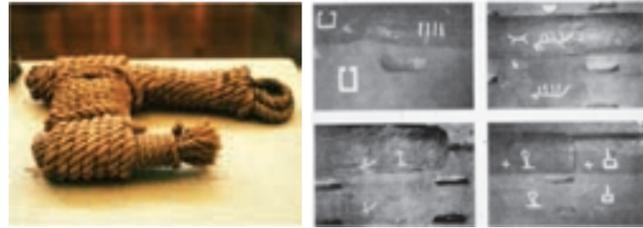


Ship: The 144-foot-long vessel with 1,224 separate pieces.



Materials

- Wood: As the Nile river basin had very few large trees, ancient Egyptians imported cedar from eastern Mediterranean region (Lebanon).
- Fastenings: Rope made from a grass called Halfa was used to lash planks.



Deckhouse

- The boat has a roofed, windowless deckhouse about 30 feet long with a 7 foot long inner chamber inside.



- Use of deck function is unknown as with that of the boat.
- It is made of 22 prefabricated, individually framed cedar panels.
- A wooden framework extending out from deck house may bear mat or linen canopy for cooling interior.

Oars

- Boat's 12 oars are carved from a single piece of wood
- 10 oars are lashed in the middle of ship ahead of the deckhouse.
- A final pair attaches to the stern as steering oars.

Style

- The boat's high ends resemble those of papyrus boats.
- Papyri form boats, commonly seen in paintings and carvings of the dynastic period, were ceremonial. They were used for journeys to sacred sites and by the gods.



3.2. Hatshepsut's Ship

Timber remains in manmade caves at Wadi Gawasis demonstrate that when ships returned from several months at sea, they were disassembled in the caves, and the parts were inspected for wear and tear. The recreated ship was able to travel approximately 6 knots, or 7 mph. So the whole voyage would be simpler and more feasible for the ancients with these ships.

Changes in construction methods

- As there was very little wood available, the first vessels were made of bundled papyrus reeds. Transportation of heavy loads, international trade and war required stronger ships than could be built from papyrus or any other better substitute. Later wooden vessels were similar in form to the old reed boats, had a flat bottom and a square stern.
- Older ships had the mast often bipod, fastened to the gunwale. Later, under the influence of Byblos, the Egyptians adopted a single central mast, which sometimes was topped with a bronze finial to which the ropes were tied. The techniques do not seem to have changed over time.
- In ancient Egypt, sails were always rectangular. During the Old Kingdom only the top of the sail was tied to a spar, while the bottom was tied to the bulwarks. Later the sail was fastened between a top and bottom spar. During the rule of Akhenaten, a 18th dynasty ruler, the advanced brailed sail with small ropes on its edges for trussing came into use, making the furling of the sail easier.

Sternpost

- Sternpost is shaped like a lotus – a symbol of fertility and of Egypt.
- The height and weight created by the elevated stem and helped compress the ships and keep them more watertight.



A part of the temple relief showing Hatshepsut's expedition to Punt, some ships are being loaded and some other are loaded and sailing back to Egypt.

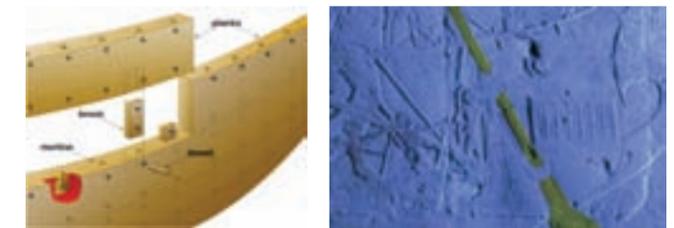
Planking

- Thick planks sculptured so that they fit together more tightly, like pieces of a puzzle.
- There's no archeological evidence that the Egyptians used copper nails or spikes on craft like Min.
- Precision of the fit, along with the mortise and tenon joints and securing beams were enough to hold the hull together.



Quarter rudders

- The two quarter rudders, the large oars at Min's stern are lashed to stanchions on the deck so that a sailor could direct the boat even in a stiff wind that might push it off course.



Wall carvings indicating that the quarter rudders were used to steer the ship.

Joints

- Egyptians used mortise and tenon joints to connect the planks, as did our modern builders.

Truss

- The thick rope runs along the centerline of the ship strung through large forked post on deck.
- When pulled tight, this truss helps to keep the ship watertight.

Mast

- Egyptians carved the components of large vessels from cedar or acacia wood.



- Cosmology: belief in a place associated with death and rebirth, Duat by Egyptians and Narak by Indians
- Belief in afterlife, considering death as a beginning of new cycle



Fig.4(a). Indian terracotta tablet illustrating solar boat and the corresponding Egyptian solar boat.



Fig.4(b). Similarity between contemporary depictions of Egyptian Bes and Indian Yaksha .



Fig.4(c). Winged maat - goddesses of truth and justice

Ballast

- Ballast helps stabilize the ship in rough seas or high winds.
- The ancients likely used heavy items for ballast such as the stone anchors found on sea shore or jars of wine.

Caulking

- There is a little evidence of caulking material at mersa gawasis and Min might be watertight by virtue of her precisely cut hull planking alone.
- It is possible that the ancient shipbuilders made use of a natural material that degraded over time and left no trace.



Sail

- Ship only has one sail and it is square-rigged or setup so that the yard is at right angles
- to the center line of the hull.
- A fragment of loosely woven linen, may have been a part of the sail of the ship.

4. India and Egypt

Concept of the Egyptian maat and the Vedic rita - the divine order of nature or creation, as opposed to the chaos of falsehood. According to both the Egyptian and Indian traditions, it was the principal duty of the king to establish order in place of disorder or chaos.

Philosophy

- Both the cultures believed that the phenomenon of the nature were divine forces in and of themselves.
- Both believed that the human body possess soul and concept of offering food to deceased.



Religious similarities between the two ancient cultures were

- Faith in magical chants
- Deep-rooted mysticism
- An emphasis on symbolic expression
- Worshiping their ancestors and parents
- Worship of cow, sun, snake, and river are common

Polytheistic system

- Both civilizations believed in a pantheon of gods, which were involved in all aspects of nature and human society.
- Gods are represented in forms that indicate each their role in nature.

There is a close proximity between Hindu mythology and Egyptian mythology and rituals. "The Book of Dead" and Garuda Purana are similar. Both are recited at the time of death.



Fig.4(d).River goddess Ganga & Hapi, god of river Nile



Fig.4(e). Vanadevata and corresponding Egyptian goddess taking water offered by tree trunk

Conclusions

The aim of this micro research is to ravel the evidences that support the probability of India being the land of Punt and the land of Ophir. Based on the following observations, we try to achieve our aim.

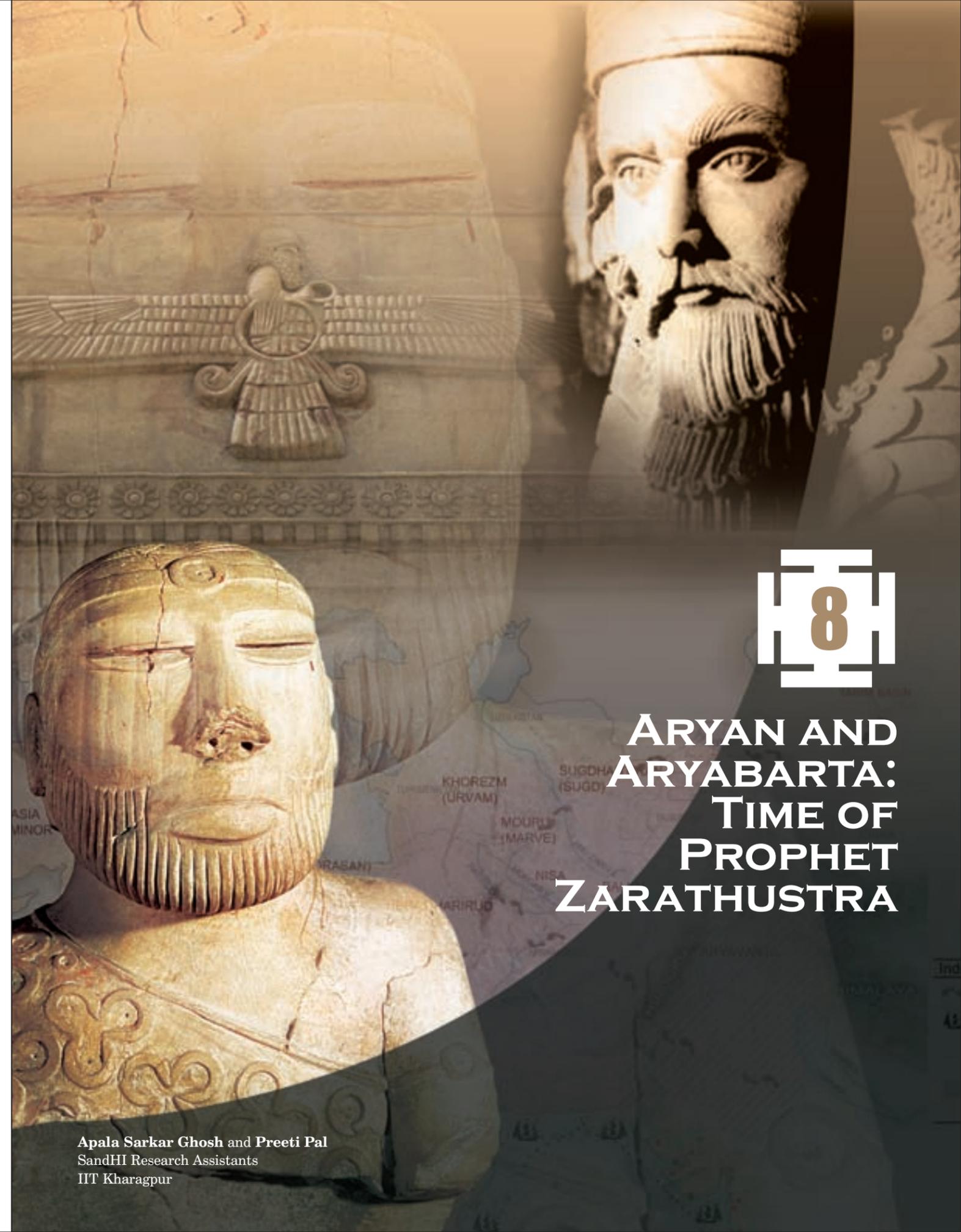
- From trade relations: exports from the land of Punt indicates that Punt has numerous resources. Though India was famous for it's gold, precious stones, ivory, myrrh etc. it couldn't satisfy the results from genetic studies of imported baboons.
- Egyptians thought that expeditions to Punt were dangerous. It would indicate that the waters thorough which they travelled had violent conditions. The Red Sea is not very wide and weather conditions are generally good. Storms are much rarer and less violent than in the open Indian ocean further south. So Egyptians might he traveled to India thorough Indian ocean.
- Similar theologies: based on the fact that humans have more tendency to adopt spiritual, theological, religious and other related ideologies rather than materialistic, physiological practices Egyptians would have adopted similar system from land of Punt. So the similarities in Indian and Egyptian theological, spiritual systems indicate that Egyptian land of Punt is India.
- Marine engineering: The method used in planking during new kingdom is almost the same method used by ship builders today. This shows their desperation to reach land of Punt. These ships enables them to travel long distances, so we can expect that they had reached India. More over, presence of shipworm damage on the timber remains at Wadi Gawasis demonstrate that the voyages would be of at least several months.
- Biblical reference: The land of Ophir could be biblical version of Egyptian land of Punt. Similar characters of land of Punt are associated with land of Ophir and it is also famous for the immeasurable wealth treasured there.

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ARYAN AND ARYABARTA: TIME OF PROPHET ZARATHUSTRA

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THEME OF THE PAPER



That morning the river was broad and shallow and clear, and two of us walked with the Swami across the fields and along the banks about three miles. He began by talking of the sense of sin, how it was Egyptian, Semitic and Aryan. It appears in the Vedas, but quickly passes out. The devil is recognized there as the Lord of Anger. Then, with the Buddhists he became Mara, the Lord of Lust, and one of the most loved of the Lord Buddha's titles was "Conqueror of Mara". (Vide the Sanskrit lexicon Amarkosha that Swami learnt to patter as a child of four!) But while Satan is the Hamlet of the Bible, in the Hindu scriptures the Lord of Anger never divides creation. He always represents defilement, never duality.

Zoroaster was a reformer of some old religion. Even Ormuzd and Ahriman with him were not supreme; they were only manifestations of the Supreme. That older religion must have been Vedantic.

So the Egyptians and Semites cling to the theory of sin while the Aryans, as Indians and Greeks, quickly lose it. In India righteousness and sin become Vidya and Avidya — both to be transcended. Amongst the Aryans, Persians and Europeans become Semitized by religious ideas; hence the sense of sin.

And then the talk drifted...



Conversation with **Swami Vivekananda : Sister Nivedita**
Walks and talks beside the Jhelum



Aryan and Aryabarta: Time of Prophet Zarathustra

Apala Sarkar Ghosh and Preeti Pal

The Reformer - Seer of Modern India Swami Vivekananda says

Shall India die? Then from the world all spirituality will be extinct, all moral perfection will be extinct, all sweet-souled sympathy for religion will be extinct, all ideality will be extinct; and in its place will reign the duality of lust and luxury as the male and female deities, with money as its priest, fraud, force, and competition its ceremonies, and the human soul its sacrifice. Such a thing can never be.

1. Rationale

For decades the Aryan origin and Diaspora has been the subject of many discussions and scope for in-depth research. However, many honest attempts by learned and revered scholars of the Vedic and the Avestan academia to take stock of the Indo-Aryan heritage and the evolution of language origin have been marred by Imperial domination and subjugation in the Indian subcontinent and in greater parts of Asia. The vested socio-political interests of the colonials have caused the vast body of deep insights, the advanced agricultural practices, the techniques of ecology driven applications in science and technology to be buried under the debris of onslaught of physis, mind and environment. It has left the Indo-Aryans impaired in internal development and global prosperity and identity.

The Indo-Aryans have since the remote past extended their rich culture and wisdom to greater Asia and beyond and nurtured pro-active international relations through exchange of ideas, merchandise and social affiliation. The greatest gift of all to the West has been the magic of spirituality, the highest path for evolution in the realms of consciousness that can alone resolve discord and communal disharmony in the national and global context. In the modern times the vision of Sri Aurobindo and the Mother for a harmonious and prosperous regional aggregate of an Asian confederation is a fervent appeal to delve into the profound and deep-rooted system of knowledge and culture.

2. The approach

The Rig Vedic Indians and the early Iranians, the two eastern groups of the proto Indo-European language family, called themselves Aryans (Arya), the term used to denote noble or righteous in both the ancient societies. The proximity in linguistic constructs, cosmogony, religious and social customs, myth and literature have been deeply entrenched by the Western and the Eastern scholars like Max Muller, Martin Haug, Bal Gangadhar Tilak, Jatindra Mohan Chatterjee, Ervad Marzban J Hathiram and Subhash Kak, S. G. Talageri and many other eminent researchers.

The major object of interest in this article is to comprehend the proto Indo-Aryan culture and the process of the societal split to evolve into innovative cultures through the evidence of strong linguistic, ideas and cultural similarities between Rig Veda, the early Iranian Avesta and its further dissemination westward, in the making of Sumerian-Mesopotamian civilization.

The key objective of the article is to discuss the temporal and spatial dimensions of the proto Indo-Iranian or Aryan origin and the movement initiated by Zarathustra that resulted in a societal fissure and the birth of the sibling culture called the Iranians. The article within its domain of discussion finds out the deep-rooted global impact of this lingual and cultural dissemination that shaped the evolution of the world language families and influenced the philosophy, learning and social



organization of greater Asia and the west. To meet this end the discussion is based on (a) the space and time frame of the topical events (b) evidences that places Zarathustra as the sage of the Atharva Veda supported by (c) etymological correlations (d) religious and cultural linkages (e) Iconic-semantic features and (f) a correlation in view of the imagery of the Seven Sages that cross-cuts the civilizational myths of India, Persia and Sumer, Egypt and Babylonia.

3. The temporal boundaries of the Proto Indo-Iranians and the branching off of the two cultures

The notion of Indo-Iranian connections has been firmly established by the rich tangible research conducted both in the East and the West. Yet, a substantial confusion, controversy and prejudice have amassed in delimiting the pre-historic timeline of the proto Iranian society. Vedic astrology have occupied the centre-stage throughout the early and later Vedic ages and through the Puranic times continues to play an important and auspicious guiding light in the culture and daily lives of the common people in the Indian subcontinent. In this backdrop of the continuance of the archaic practices, it is most logical, clear-cut and scientific procedure to decipher the time-span of the Vedic era on the basis of astronomical information embedded in the hymns of the Vedas.

3.1. The mathematicians, historians and archeologists and geologists speak of the Vedic date in unison

Bal Gangadhar Tilak, the Vedic scholar and mathematician, has systematically investigated the Vedic sutras, collated myriads of references to astral positions and synchronized corresponding rituals and myths to unfold the chronology of the Vedic timeline. Tilak has placed the Vedic society between 6000 to 2500 BCE. Herman Jacobi has arrived at a similar calculable pre-historicity of 6000 BCE. Jatindra Mohan Chatterjee (1969), Frawley (1991), Feuerstein, Kak and Frawley (1995), Kramrisch (1981), Deppert (1977) and Kostermaier (1994) support the astronomic calculations for the Vedic period.

Further, the recent archeological evidences unearthed in and around Mehrgarh in the Saraswati-Indus region and the discovery of active paleo-channels of the Saraswati river in the pre-Indus centric society corroborate the above discussed time period and oblige historians to accept the antiquity of the Vedic-Aryan traditions far back as 6000 to 7000 BCE.

The geological research by Ramaswami, Bakliwal and Verma (1991) with the help of remote sensing technology holds that the Saraswati river flowed to the Arabian Sea in the late Pleistocene era around 12000 BCE. This makes it logical to conclude that the civilization thrived at a time when the river

Saraswati was a major riparian system draining in the Arabian Sea.

3.1.1. The time frame of the joint Indo-Iranian heritage and advent of Zarathustra

The Avesta has not directly mentioned the time of Zarathustra's advent. However, the social events, mythology and astrological occurrences mentioned in the Gathas have been critically compared and sequenced with the Rig Vedic and later Brahmanical literature by Tilak (1893) and Jatindra Mohan Chatterjee (1967). The article puts forward a brief note of potent facts to substantiate the geo-spatial timeframe of the unified proto Indo-Iranian homeland and the emergence of the two cultural traits.

- The Rig Veda and the Gatha address Zarathustra as Atharvan.
- Exploration into the Rig Vedic hymns by Vedic scholars suggests the coexistence of Atharvan tradition along with Rig Vedic conventions.
- The monotheistic and casteless early Rig Vedic society has revered the Supreme Divine being as both Asura and Deva that later became Deva Yana (Vedic) and Ahura Yasna (Avestan)
- Gradual degeneration in the society has brought in ideological dissention between monotheists and icon worship and caste inequality.
- Rig Vedic sage Atri appeals to people to pay homage to Ahura and Deva cults
- The early Rig Vedic period, estimated from around 6000 to 4000 BCE had been a time of oral tradition. The documentation of this era and the following phases commenced 4000 BCE onwards.
- The Gathas depict Zarathustra preaching in oral tradition which was in vogue before the compilation of the Rig Vedic hymns.

3.1.2 The Greek scholars furnish the earliest documentation of Zarathustra's time frame

The above information used as evidence shows that the monotheistic Rig Vedic society progressively diverged into separate dogmas of faith. The Atharvan clan spearheaded by Zarathushtra opposed the societal degeneration and established the Ahura (Vedic Asura) tradition of his forefathers. Diogenes Laertius (2-3CE), the Greek scholar, in his quest for the Magian origin, collated the references of Grecian philosophers of 4th and 5th BCE and projected the date of Zarathushtra around 6000 BCE. Aristotle (350 BCE) and Hermippus (250 BCE) too confirms Diogenes' projection. The Greek estimations and reflection of the above mentioned fact implies that either the Greek scholars have identified the shared Rig Vedic homeland of the proto Indo-Iranians or 6000 BCE has been indicated by the Greeks as the birth time of the Prophet. Either way, the occurrence clearly pre-dates the Rig Vedic Aryan civilization to 7000 BCE or even further back,



corroborated by the recent archeological unearthing and similar unexcavated mysteries waiting in slumber.

4. The spatial linkages

The Nadistuti hymn (10.75) mentions the locus of the Early Vedic habitat in the Saraswati river basin between river Jamuna in the east and river Sutlej in the west. K. E. Eduljee, in his research on Farvardin Yast, confers the Airyana Vaeja (Aryan homeland in Avestan) to overlap with Arya Varta (Aryan homeland in the Rig Veda). S. G. Talageri too furnishes the 'common ground' of the Indo-Aryans in the upper reaches of the Indus River from Punjab to Afghanistan. Meher Yasht (10.13-14) describes the topographic features of the Avestan homeland with mountains, alpine meadow, wide rivers, fertile valleys dotted with cows that typically reflect the picture of the Rig Vedic riverine landscape.

Adreshir Mehta (1991) has located the Aryan or the Vedic homeland stretching from India and Sapta Sindhu (the Saraswati valley) to Iran. All the names come together in the following Rig Vedic hymn, Iran being derivations of Rig Vedic words for Iran, Ira and Ila.

आ भारती भारतीभिः सजोषा इव्य देवेभिर्मनुष्येभिर्मनि ।
सरस्वती सरस्वतेभिर्मन्त्रिभ्यो देविर्बिर् इदं सदनम् ॥

O Agni, may these three presiding deities, viz., that of India [Bhârati], Iran [Ilâ] and the Indus Valley [Sarasvatî] take their seats here on the grass, along with the Sages thereof. Rig Veda 7.2.8

The Rig Vedas also mention the three zones of Iran that is, Persia, Parthia and Media mentioned in a hymn:

प्रचा गव्यन्तः प्रथुर्शवो ययुः ।
Prachâ gavyantah PrithuParshavo yayuh ॥

The Parthians and Persians proceed eastward in search of pasture for their cows. Rigveda 7.83.1

The interpretation of the above facts strongly indicate a spatial breadth of the Aryan or Vedic cultural zone that extended from the Gangetic plains (the easternmost limit) to the Zagros mountains (the western limit). The Aryavarta or the Sapta Sindhu region was the core area or locus of the Vedic philosophy and learning and the northern reaches of the Sapta Sindhu, Hindukush and the Oxus river valley being the terra firma for the cultural sharing, exchange and conflict and the final split between the two cultures.

4.1. The initial lines of control demarcating and overlapping the two cultures

The post Yama (Vedic) or Yima (Avestan) rule indicates the Hindukush Mountains as the initial boundary and river Amu

Darya as a subsequent dividing line between the Vedic and the newly evolved Atharvan culture. The Yast, Vendidad and Yasna mentions the adjacent province or countries of Sogdiana (modern Sugd/Turan in Tajikistan and Uzbekistan), Mouru (Merv in Murgab river basin of Turkmenistan) and Balkh (Northern Afghanistan) traversed by Zarathustra to gain acceptance of his doctrines.

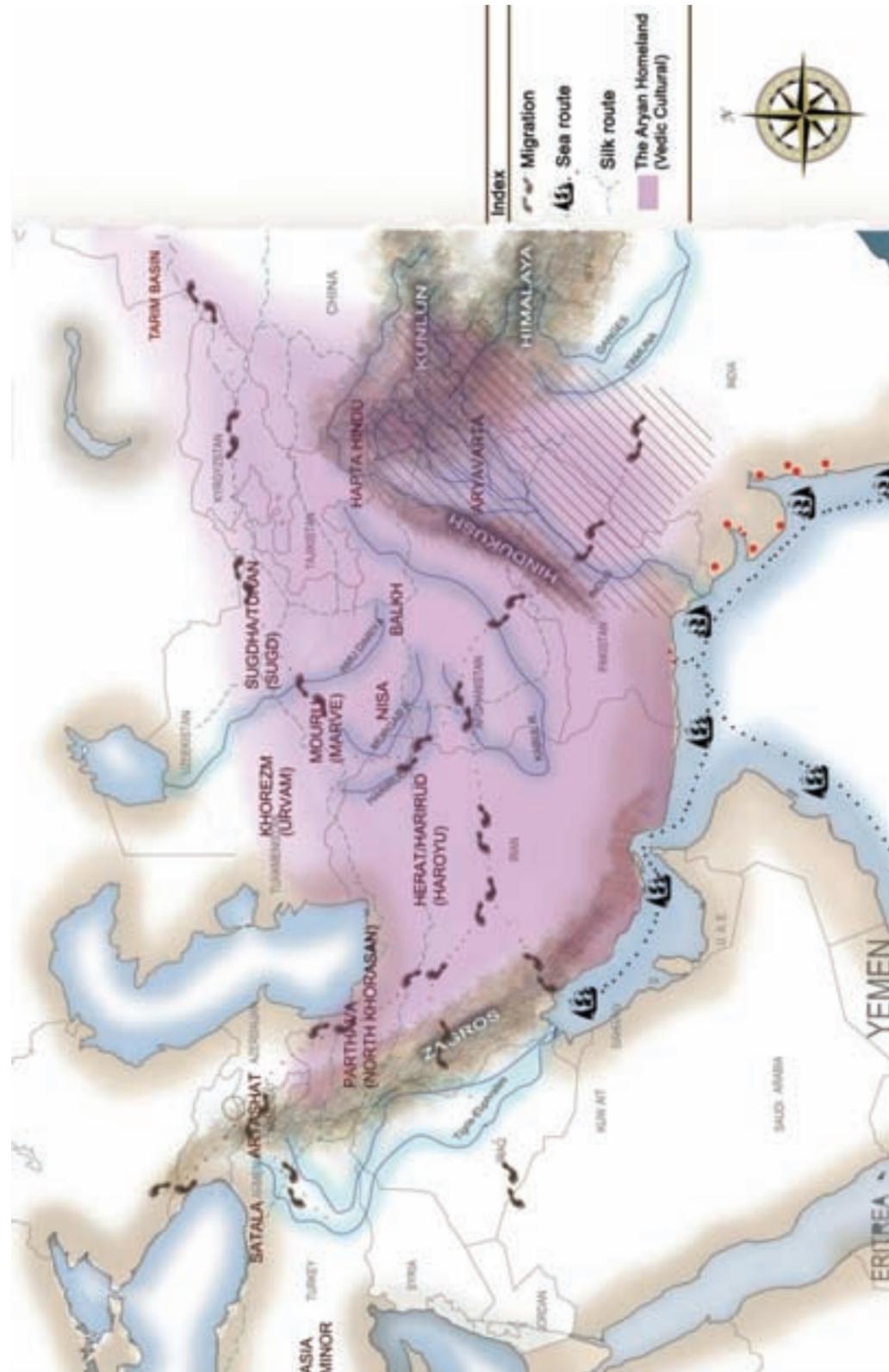
4.1.1. The continuance of consistent cultural and social flows link the two cultures

The Vedic clan of Vashishthas, the custodians for worshiping Varuna hailed from Bactria and the Caspian Sea is named after the Sage Kashyapa, who lived in that area. The compilation of Puranic epics of Ramayana and Mahabharata (2500 BCE - 500 BCE) depict social affiliations and marriage alliances between royal families of India and Bahlika (Balkh/Bactria), Kekaya (Caucasus region), Madra (Media, Iran) and so on. The Recent evidences from archeological research by Wu Xin constitute evidence of Zarathustran activity in the cradle of the valley of river Amu Dariya, the Pamir and Hindukush of Central Asia comprising the present northern Pakistan, Afghanistan, Turkmenistan, southern Uzbekistan, Tajikistan and eastern lining of Iran. Archeologist Victor Sarianidi too confirms the central Asian Bactria Margiana Archeological Complex (2300 BCE - 1700 BCE) as the native land of the Avestans that coincides with the territory projected by Wu Xin.

4.1.2. New names of countries and trade routes evolve as a consequence of semantic and cultural migration

The depiction in the Mahabharata of the departure of the clan of Parsuram and the establishment of Lord Ram in the Indian subcontinent is a second phase of split between the two ideologies and has led to the emergence of Persia, named after the Avatar. The gradual westward domination of the Avestan society can be understood from the new names that has emerged down the ages from old Aryan Airiyana Vaeja to middle Aryan Airan Vej as mentioned in Ferdawsi's Shahnameh (around 900 CE) to modern Aryan version of Iran. The Silk Trade Route is a cardinal path that has unwaveringly followed the Indo-Iranian diaspora to the west and to the east toward Tibet and China. The eastward movement is not in the ambit of the present research topic; however, the journey to the east is an exclusive opportunity for exploring Indo-Aryan or Indo-European dispersion beyond their homeland.

The spatial map depicts the unified Aryan or the Rig Vedic society and the later fissure in the society which confined the Vedic Indians in Aryavarta consisting of the Himalayan territory and the perennial river systems of Saraswati-Indus-Ganga valley and the Iranian culture taking birth in the Hindukush-Oxus region of Central Asia and dominating Western Asia and Asia Minor to step into the lands of the Mediterranean. The cultural migration across sea route along the Persian gulf and the eastern and north eastern movement to the Tarim Basin has also been demarcated but is outside the scope of the present report.



5. Zarathustra- The sage of the Atharva Veda

Jatindra Mohan Chatterjee is perhaps the foremost advocate of the Indo-Iranian researchers who arrived at the end of the deduction regarding the origin or the birth of the Iranian-Aryan culture. He pursued an intensive elucidation of the hymns of the Vedas, Upanisads and the Gathas to declare without any hesitation or confusion that Zarathustra was an 'Atharvan sage king' of the Vedic age who composed Vedic hymns. In subsequent times many scholars and historians have referred Chatterjee to establish this viewpoint.

Indo Iranian researcher Adreshir Mehta in his book titled 'Zarathustra' has given a more up-to-date conjecture to recreate the Atharvan tradition of Zarathustra on the basis of his interpretation on the works of Tilak, Griswold and Chatterjee and a detail explanation of the Vedic and Avestan scriptures. This report is therefore an attempt to combine the rich data of the mentioned scholars as well as a brief comparison with a few of the other Indo-Iranian researchers.

The earliest monotheistic and aniconic and casteless Rig Vedic society had been losing its homogeneity and there emerged the Deva Yanas in India and Daeva-Yasna (Avestan) who personified the different aspects of the Supreme Divine into aniconic gods and supported caste system and consequently the aniconists had defined themselves as Pitryânas in India and Paourya-tkaesha in Iran to maintain their identity. The Deva Yanas gained more acceptances in India and were the worshippers of the physical powers of Indra while Pitryânas dominated in Iran worshipping Vishnu, the aniconic divinity of moral order. The Pitryânas too were the worshippers and preservers of the sacred fire like the Deva Yanas as understood from the following Rig Vedic hymn:

यं त्वा वावाचुषिषी यं त्वा आच त्वाष्टा यं त्वा सुजनिमा जजान ।
पन्थामनु प्रविशान् पितृयान् द्युमदग्ने समिधानो विभाहि ॥

May Agni, the Fire – born of heaven, earth and water, and kindled by Twashta – burn brightly in the Pitryâna.

Rigveda 10.2.7

Bhrigu was the mentor of the Pitryânas or the Asura (Ahura) worship and was in constant rivalry with the Anigrasa, the principle guide for the Deva Yanas. This societal change justifies the dawn of the fourth Veda - the Atharva Veda to include the dogmas. Sage Atharva is an ancient seer of the Rig Vedas and the Mundaka Upanishad mentions him as the first born son of Brahma.

ब्रह्मा देवानां प्रथमः सम्भूय विश्वस्य कर्ता भुवनस्य गोप्ता ।
स ब्रह्मविद्यां सविद्याप्रतिष्ठाम् अथर्वीय ज्येष्ठपुत्राय प्राह ॥

Brahmâ, the first of the Gods, came into being—He who is the Creator of all, the world's Protector. To Atharvân, his first born son, He revealed the Knowledge Divine, on which all sciences are founded.

Mundaka Upanishad 1.1.1

The word Atharvan is derived from the Sanskrit root sound 'atr' or Avestan 'atar' both meaning fire. The Gopatha Brahmana calls Atharva Veda by the name 'Bhrigu-Angirasi Samhitâ' as both Bhrigu (from Sanskrit root sound bhrk "the blazing of the fire") and Angirasa (from Sanskrit angâr "the glowing coal or ember) originate from the word fire. Going by the legend, the kings of India descended from Manu and the kings of Iran descended from Yama. Zarathushtra was said to be born as the Prince of Raji (mentioned as Ragma, Ragau or Rae in later times), a descendant of Yima Kshaeta. He was brought up under the umbrella of the Bhargava clan and vehemently denounced the icon worship and caste differences of the Deva Yanas. Zarathushtra conducted his religious movement in Balkh (present Afghanistan) and perhaps Balkhash (southern Russia) which is in close proximity of Sapta Sindhu. He forced a final split in the Aryan society and professed the doctrines of Ahura Mazda. Gopatha Brahmana goes further to split the Atharva Veda in two distinct Vedas, the Bhârgava Samhitâ and the Angirasa Samhitâ, in the light of stark rivalry and conflicting ideologies between the two.

The Iranians claimed themselves to be the Atharvans and Zarathustra belonging to the Bhargava clan was called as an Atharvan. The evidence can be cited from the hymn of the Farvardin Yasht:

'Ushta no jato Athravayo Spitamo Zarathushtro'

Fortunate are we that to us is born The Atharvan, [he who is] Zarathushtra of the Spitama clan.

Farvardin Yasht 944

Zarathustrans denied the Rig Vedic name of 'Bhrigu' (or Shukra or Shukla meaning white) used by the Deva Yanas and converted it to Spitama which is the Sanskrit version of Shwetatama and synonymous to Shukra meaning white.

It is important to mention Vashishtha (Vahishta in the Avesta) who was a very prominent sage of the Bhargava clan and revered as a great sage in the Gathas:

Vahishtemthwawahishtayem

Ashavahishtahazaoshem

Ahuremyasava'unus

Naroi Frasoshtraimaibya cha

"Thou art the Greatest Good; this [also] is the greatest good. I would realise Thee, O Ahura, Who Art the Greatest Good; with love would I worship Thee, for the good of the valiant Frashoshtra, and for my good too".

Gatha 28.828

The Vashishthas too formed a clan as he was one of the important scribes of the Vedas as well as prime writer of the epic of the Mahabharata. The Rig Vedas call him as the singer of the hymns for Asura Varuna. Tilak and Griswold has located him in the Bactria or Balkh area and suggested that some of the hymns to Varunahas been written in Bactria. The Bhrigus and the Vashishthas were in ever congenial terms and modern scholars think that Bhrigus descended from the Vashishthas.



6. Etymological linkages

The textual and linguistic interpretations from the Rig Vedic and the later Vedic hymns, the Puranic scriptures, the GathaicAvestan, Yasts, the Vendidad and the epics of the Puranic and Sumer-Mesopotamian origin extend factual evidence of the shared linguistic and spatial heritage of the Aryans and the sprouting of a new Indo-Iranian culture that took the deep-seated Aryan tradition to flourish in the territories settled by the Iranians on their journey to the far west across central and western Asia.

6.1. Veda and 'ZendAvesta' evolve from a common root sound 'vid'

A comparison of the etymology of 'Veda' and 'ZendAvesta', the two scriptures that incorporates the aforementioned words can be put forward. Veda is derived from the root 'vid' meaning 'knowing'. Likewise, in Iranian language, 'zend' is obtained from the root 'zan' that too means 'knowing' and corresponds with another Sanskrit root sound 'gna'. Finally, Nirukti, a wing of Vedanga, refer to 'abasta' (or Avesta) as one of the derivative of the root sound 'vid'.

The origin of Mazda Yasna can be compared in terms of the Vedas while discussing the development of the fissure in the Aryan society based on ethical principles. Zarathustra had been skeptical in using the Varuna cult in its literal sense because it has a reflection of its complement or mithra, the Indra. The prophet thus embodied Varuna as the Vedhas, the highest God. The word Veda has been used in the Rig Veda in relation with the manifestations of the highest God. Nirukta (3-15) states the meaning of vedas (वेदस् -wisdom) to be the same as medhas (मेधा) from which medhabi (मेधावि-intelligent) is a derivative. The change in phonetics from medhas to mazda (मज्दा) can be followed through an initial shift of vowel e (ए) to a long vowel sound ya (य) which finally settles at the consonant za (ज).

6.1.1. The diaspora of lingua and culture and to Mesopotamia

The orthographic and phonetic resemblances can be followed further west when Ahuramazda, the Mazdyasna, as the Zarathustrans call their religion, is compared with 'AsuraMedha', a Sanskrit term that means 'Lord of wisdom'. The word 'asura' travels as far as Assyria in the northern Mesopotamia where the original capital was Ashur, an Akkadian city state in 2600 BCE.

7. Associated genres

7.1. Religious and cultural connections

The ZendAvesta is mainly grouped into three parts, Yasna, Vendidad and Yasht. This division can be traced to the early

Vedas which has three basic sections and hence known as 'Trayi' (three). The Vendidad describes the procedures of meditation and worship of Ahura Mazda and finds a similarity in phonetics as well as concept with Banditata (Sanskrit), meaning "In praise of the Lord, the Father". The section Yasna is the Sanskrit adaptation of yagna, both concerned with hymns of worship and intricacies of religious fire rituals and ceremonies.

7.1.1. The sacred religious rituals shared by the Vedic and Avestan communities

In the contemporary societies of the Indian subcontinent and Iran, both the cultures perform religious oblations chanting archaic Vedic and Avestan hymns respectively as they consider the two languages from the cosmic origin possessing a divine power to lift the soul to the God. Moreover, the Indo-Iranians have retained their ritualistic fire worship, with the Indian subcontinent evoking divinities by offering sacrifices in the fire and the Persians preserving and guarding the sacred fire in ceremonial vessels.

7.1.2. A glimpse in the usages of common words in the two societies

In the social lives and daily usages, the words pitar : pitar (father), mater : matr (mother), gaus:gauh (cow), data : datas (tooth), vayus : vayus (wind), ratha : ratha- (chariot/wagon), jani- : jani (woman) can be cited as a glimpse of the vast body of similar and identical words evident in Avesta : Sanskrit languages.

7.1.3. The social structure of the early Rig Vedic times mirrors that of the Avestan social schema

The Vedic and Avestan cultures show a unique parallel in the system of social structures possessing four fold divisions. The early Vedic society was divided on the basis of work performed by four classes into Brahmans, Kshatriyas, Vaisyas and Sudras, which is consistent with the early Zarathustran societal divisions of Atharva (priest), Rathestan (warrior), Vasteriox (farmer) and hutox (craftsmen). A reflection of this social system can be identified if treaded on the heels into the Pahlavis, a middle Iranian language.

7.2. Iconographic footprints corroborate the Indo-Iranian route of migration

The Indo-Iranian linkages discussed in the earlier sections of the article necessitate affirmation through prevalence of tangible symbols or icons to substantiate the data put forward from the scriptures, language, word cognates, religious and societal commonalities of both the cultures. To meet this requirement, fire altars and relief features of the pre-historic and historic built environment have been identified for detailed treatment of the topic in question.



7.2.1. Evidences of fire altars



Kalibangan, Rajasthan, India



Chesm-e shafa, Balkh Afghanistan

Figure 2. The fire altars in the Saraswati valley of Aryavarta and Hindukush region of Airyana Vaeja



Mele Hairam, Turkmenistan



Naqsh-e-Rostam, Fars, Iran



Bazeh Khur, Khorasan, Iran

Figure 3. Fire Altars on the route of Iranian migration across the Central and Western Asia

7.2.2. Evidence of Relief features



Winged Sun, Nimrud, Iran



Ashur, the Assyrian God, Iran



Faravahar, Persepolis, Iran

Figure 4. The iconic relief features of the post Gathic-Avestan Ashura cult



Mithras-Helios at Mount Nemrut, Turkey



MithraTaq-i Bostan in Kermanshah, Iran



Double faced Mithraic relief, Rome

Figure 5. The recurrence of Vedic 'Mitra Varuna' in Western Asia and Europe



8. The pre-historic catastrophic event of deluge is recalled in the mythology of Indo Iranian, Egyptian and Babylonian scriptures



The Saptarshi and Manu outlives the deluge under the guidance of Matsya (Varuna)



Assyrian relief depicting the Epic of Atrahasis



EnumaElish, the Babylonian epic of creation



ZepTepi astride the sacred barque, Edfu, Egypt

Figure 6. The tradition of archaic ante-diluvian seven sages and Manu (Man) in different cultures and time zones

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PHOENICIANS: THE ANCIENT MARINERS — STUDY OF INTER-CONTINENTAL TRADE AND COMMERCE INFRASTRUCTURE

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THEME OF THE PAPER



"The same holds good with respect to sciences. India has given to antiquity the earliest scientific physicians, and, according to Sir William Hunter, she has even contributed to modern medical science by the discovery of various chemicals and by teaching you how to reform misshapen ears and noses. Even more it has done in mathematics, for algebra, geometry, astronomy, and the triumph of modern science — mixed mathematics — were all invented in India, just so much as the ten numerals, the very cornerstone of all present civilization, were discovered in India, and are in reality, Sanskrit words.

"In philosophy we are even now head and shoulders above any other nation, as Schopenhauer, the great German philosopher has confessed. In music India gave to the world her system of notation, with the seven cardinal notes and the diatonic scale, all of which we enjoyed as early as 350 B.C., while it came to Europe only in the eleventh century. In philology, our Sanskrit language is now universally acknowledged to be the

foundation of all European languages, which, in fact, are nothing but jargonized Sanskrit (phonology and phonetics).

"In literature, our epics and poems and dramas rank as high as those of any language; our 'Shaguntala' [Shakuntala] was summarized by Germany's greatest poet, as 'heaven and earth united'. India has given to the world the fables of Aesop, which were copied by Aesop from an old Sanskrit book; it has given the Arabian Nights, yes, even the story of Cinderella and the Bean Stalks.

In manufacture, India was the first to make cotton and purple [dye], it was proficient in all works of jewelry, and the very word 'sugar', as well as the article itself, is the product of India. Lastly she has invented the game of chess and the cards and the dice. So great, in fact, was the superiority of India in every respect that it drew to her borders the hungry cohorts of Europe, and thereby indirectly brought about the discovery of America.



Swami Vivekananda
India's gift to the World

Phoenicians: The Ancient Mariners

– Study of Inter-Continental Trade and Commerce Infrastructure

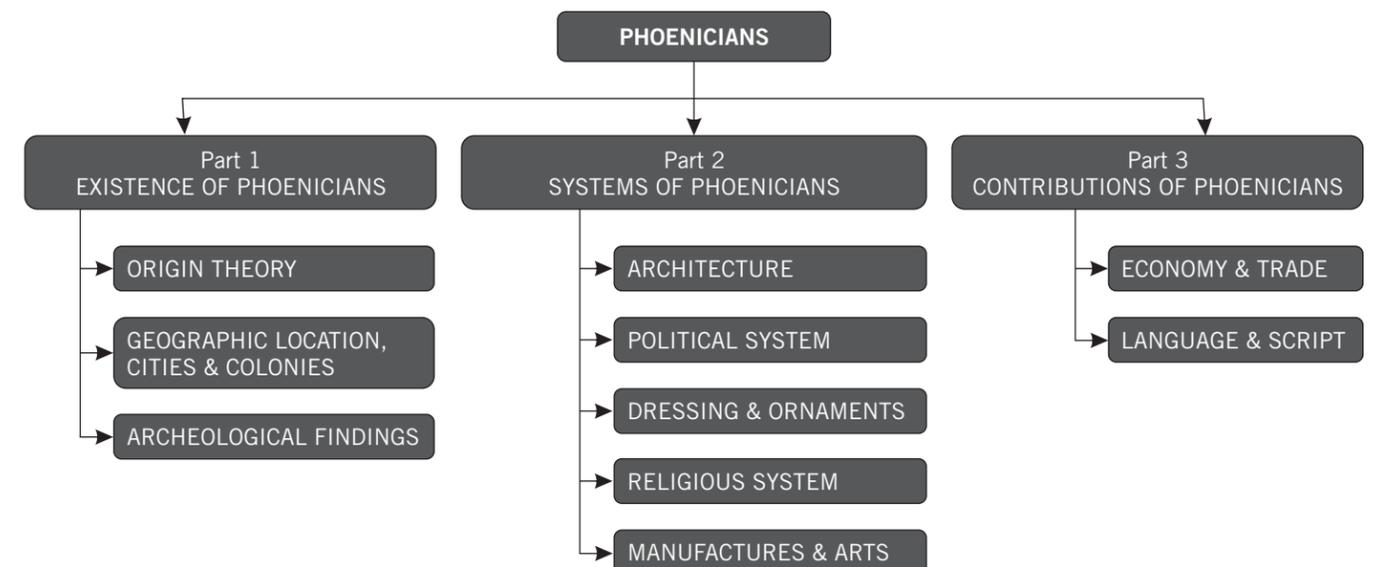
Salem Raju, Sawan Kumar Gope and Stetson

Abstract

The aim of this study was to know about who Phoenicians were, what their importance is and what were their achievements and contribution to this world. In order to get a better understanding of how their contribution helped us to live in this present world we need to know about their civilization, culture, traditions, religious beliefs, and social habits. This study starts with their origin, important cities, archaeological evidences to know their existence and relations. Later we study their architectural features, political, religion, dressing, art etc. At the end we study about their contributions like trading, phonetics etc.

Keywords: Herodotus, Murex Snail, Canaanite, Rock Dwellings.

Study Approach





Introduction

Phoenician was an ancient civilization composed of independent city-states which lay along the coast of the Mediterranean Sea stretching through what is now Syria, Lebanon and northern Israel.[1] They are also known as Canaanites. In Hebrew the word kena'ani has the secondary meaning of "merchant"— a term that well characterizes the Phoenicians. [2]Phoenicians were the first persons in the world despite a small size civilization. They established colonies all over the Mediterranean. They shared culture with many nations which allowed their alphabets to spread all over the Eurasia. They were the reason for the development of phonetic alphabets which later evolved into Modern Roman Alphabet which we use today. Because of their immense contribution to the world there is a need to know about their existence, systems and contributions. [1]

1. Existence of Phoenicians

1.1. Origin Theory

The oldest of these theories were conveyed by the ancient Greek historian Herodotus, who documented this legend on the opening page of his histories.



Fig 1.1: Herodotus script

As shown in fig-1.1

"Originally, these people came to our sea from the Red Sea, As it is known. No sooner had they settled in the land. They still inhabit than they turned to overseas travel."

-Herodotus

The Phoenicians had come from the Red (Erythraean) Sea.[3] The term later being applied to what we know today as the Red Sea beside Egypt.[4]

1.2. Geographic Location, Cities and Colonies of Phoenicia

Phoenicia as a state and civilization lasted from 1550 BCE to 300 BCE on the Mediterranean coast where the present Lebanon and western Syria are located. Phoenicians established into independent city states and colonies like Sidon, Tyre, Byblos and Carthage. They were the strongest maritime powers of their times. Refer to fig 1.2

Sidon was one of the most powerful city-state of Phoenicia and was inhabited with people from around 4000 BCE.

People of Sidon were the first to manufacture purple dye and the colour purple, became symbol of royalty. Glass production made them rich and famous and was known for being cosmopolitan and progressive.



Fig 1.2: Cities and colonies of Phoenicia

Tyre is an ancient island port city with heavily fortified walls of about 46m high and the mainland settlement called ushu was more urban than any other city and it was main source of water and timber for the main island city.

1.3. Archaeological Findings

The finding of pottery vessels of identical style in Israel and in Crete (fig-1.3) indicate interrelationship between the two countries. When these pottery vessels are examined they found that the Israelites entered Israel in the period of Mernephtah (1200 B. C.), and that the Philistines are originally from Crete.



Fig 1.3: Pottery of Israel and Crete

Then the conclusion will inevitably be that the Cretans were those whose culture influenced the Israelites and the findings will also be classified accordingly.

If the entry of the Israelites into Canaan occurred at a prior Period (i. e. in the reign of Amenhotep III – c. 1406 B. C.), and if the Philistines did not come from Crete, then the conclusion would inevitably be completely opposite.

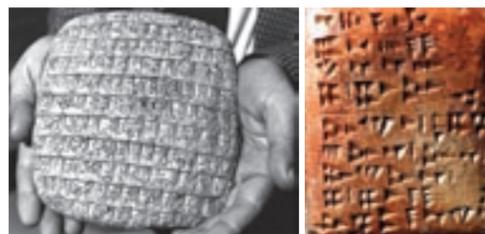


Fig 1.4: Tablets found at Ras and Shamra



The Israelites would be those who had influenced the Cretans. The country was not conquered by the tribe of Asher; In the light of such an assumption, it is natural that findings such as Ras and Shamra (Ugarit) Tablets, as in fig-1.4. Others were ascribed to the Phoenicians. The proximity of these tablets to the Hebrew language, led scholars inevitably to see in them a proof that the Israelites copied the Bible and their way of life from the Canaanites also known as Phoenicians.

2. Systems of Phoenicians

2.1. Political System

Phoenician's ancient society was into three classes: Social class, Middle class, Working class as in fig-2.1.

In Ancient Phoenician hierarchy, King was at the top of the society and social hierarchy, but as at that time kings were not considered as a part of social hierarchy. The upper class were the social class which comprised of the most elite people of the society, government officials, land owners and priests.

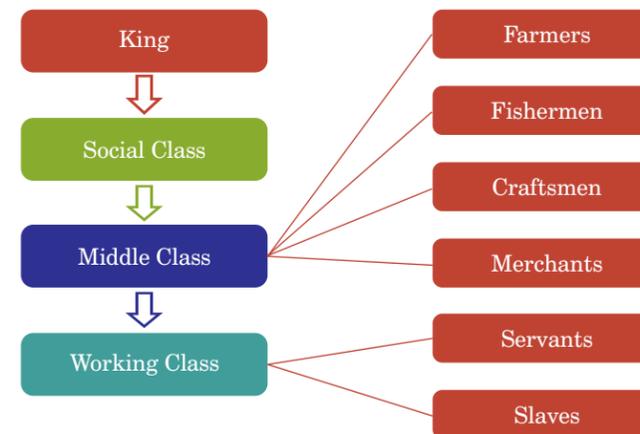


Fig 2.1: Phoenicians hierarchy

The Middle class comprised of Farmers, Fisherman, Craftsman and Merchants. Middle class enjoyed certain privileges and possessed certain rights like the social class, to protect them from law to certain extent. The Working class were slaves and servants under above class of people.[10]

2.2. Phoenecian Architecture

Initially Phoenicians architecture began with carved rock dwellings, temples and tombs. Their design was somewhere nearer to Egyptians.[5] They used columns for their temples and palaces. Some few centuries later they adopted Greek architecture. There is more of a desert type climate so their houses were built with all natural air conditioning. King Solomon's temple (Fig 2.2) was built with the help of Phoenicians; they supplied cedar wood, stones and glasses to them as they were mainly available in Phoenicia.[6]



Fig 2.2: Solomon's temple

2.3. Dressing and Ornaments

DRESSING: Phoenician men wore simple, plain and unornamented garments probably made of either linen or cotton. They wore a round conical cap shaped like helmet. [7] Phoenician women draped them self from neck to feet in garments with many folds.[8] Refer to fig-2.3.



Fig 2.3: Dressing of men and women

ORNAMENTS: Phoenicians were greatly devoted to the use of personal ornaments. The excavations made on Phoenician sites have yielded in abundance necklaces, armlets, bracelets, pendants to be worn as locket, ear-rings as in fig-2.4, finger-rings, ornaments for the hair, buckles or brooches, seals and buttons.[9]

2.4. Religious System

Phoenicians religious beliefs were reflected in their archaeological findings and their idolatrous worship were ascribed by the Bible. The temple typically occupied a dominating site in the city along with the palace. It had political, administrative, and economic



Fig 2.4: Ear-ring



**OUT OF INDIA THEORY
AND GYPSIES
MOVEMENT: FROM
CULTURAL DIASPORA
TO
COSMOPOLITANISM**



THEME OF THE PAPER



Three mountains stand as typical of progress — the Himalayas of Indo-aryan, Sinai of Hebrew, and Olympus of Greek civilisation.

When the Aryans reached India, they found the climate so hot that they could not work incessantly, so they began to think; thus they became introspective and developed religion. They discovered that there was no limit to the power of mind; they therefore sought to master that; and through it they learnt that there was something infinite coiled up in the frame we call man, which was seeking to become kinetic. To evolve this became their chief aim.

Another branch of the Aryans went into the smaller and more picturesque country of Greece, where the climate and natural conditions were more favorable; so their activity turned outwards, and they developed the external arts and outward liberty.

The Greek sought political liberty. The Hindu has always sought spiritual liberty. Both are one - sided. The Indian cares not enough for national protection or patriotism, he will defend only his religion; while with the Greek and in Europe (where the Greek civilisation finds its continuation) the country comes first.

To care only for spiritual liberty and not for social liberty is a defect, but the opposite is a still greater defect. Liberty of both soul and body is to be striven for.



Swami Vivekananda
Hindu and Greek

Out of India Theory and Gypsies Movement: From Cultural Diaspora to Cosmopolitanism

Jayant Sharma

Abstract

The research looks into reasoning given behind the Out of India theory and what scientific data can be further researched upon to validate its proof. Existing and well accepted theories on the topic are described briefly. A connection between the gypsy's migration from India to Europe at a much later stage and those which occurred at pre Vedic age till Indus valley civilization is tried to be established. Finally the impact of these migrations had on dispersion of culture and how in world of today all this leads to the ideology of cosmopolitanism for a better peaceful world.

Keywords: Proto Indo Europeans, Migration, Gypsies

1. Introduction

In our World, out of the various questions which predominantly intrigued the researchers and the scholars from ancient days to present modern era are the one which gives answer about the knowledge of the past. In every time period people have questioned about their ancestor's, from where they came, how they lived, how they spread to the whole world i.e. the history of mankind and history of civilizations. These questions have kept researchers and scholars of this field propose various theories as per their understanding and knowledge and the means they had to research on this, but the theories although accepted by most of the human world didn't satisfied all and thus till this day researches have been going on the first human beings, first settlements, civilizations, theories on migration of people from one place to rest of the world.

It should also be noted that answer to these questions is important not only from a scholarly point of view but for the betterment of humankind, as what better peace of mind can be achieved than to have complete and unquestionable knowledge of our past, our ancestor's and our land of origin. As these are the answers that will bring the humankind together - the knowledge of a civilization where to all the present humans belong. On the other hand wrong theory on the matter creates further divide among the people as it raises the notion of one race being superior to the others. This same thinking resulted in World War I & II and became the core thinking of the British in their quest for colonizing the world.

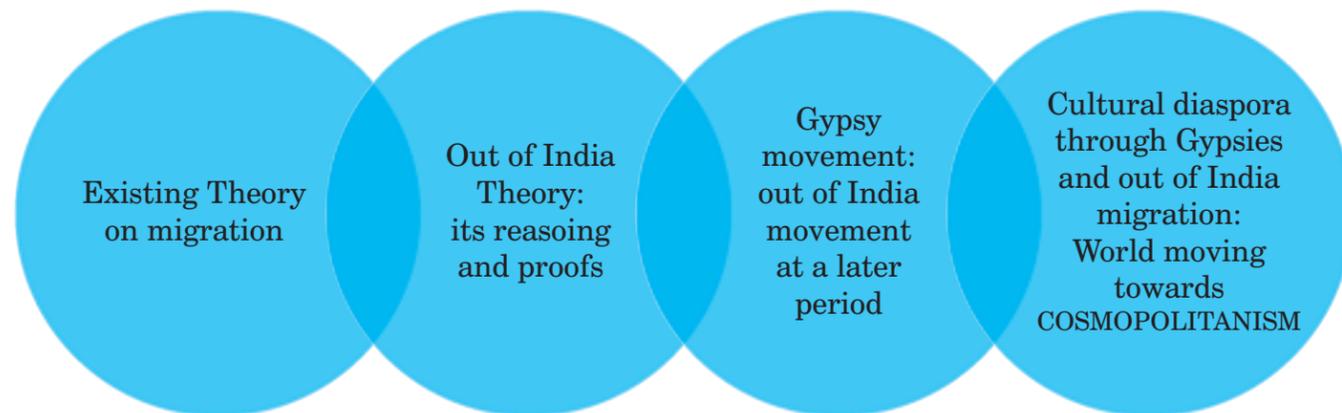
All the present theories of migration of the people from the first human settlements have been given by western scholars on the basis of linguistics, archaeological evidences, genetic data base, sheer logic and they do seem reasonable enough in giving the



answer to this all important questions. Criticism of one theory by a scholar or a group of scholar resulted in different theories all of which are accepted by some or rejected by others.

This chapter tries to discuss the Out of India theory, which is the least of all the theories accepted on the first migration which resulted in the world of today. All other theories have been researched properly through various techniques over a considerable amount of time. This chapter tries to bring forward the postulates and reasoning of the Out of India theory thus bringing any scientific and technical backing that can be adhered to this theory which has a scope of being further researched upon.

Time and other resources should be invested in further research of this theory not because it fuels the national pride of some religion or community but because this theory if proved and accepted throughout the world then the misconception of one race or one religion being superior to the other will diminish and all humans doing good in life will become true Aryans, not the race as described by the western world but as a "Way of life" as described by the Vedas. Thus bringing true cosmopolitanism to the cultural diaspora of which Gypsies are a true picture.



2. Study approach

The study approach for this chapter has been to identify the available literatures and information in other formats on the said topic. To study fully understand the Out of India theory it was important to first study the accepted theories on the earliest migration and spread of humans to form civilizations over a period of time in different parts of the world. The literature to be studied to come to any conclusion for this theory can be divided into four parts.

Part1: Existing Migration theories. (Their brief description, Map showing possible route of migration, reasoning and criticism)

Part2: Describing Out of India theory and gypsies movement. (Finding a relation between the two, reasoning, proofs given for Out of India theory, criticism)

Part3: Analysing the Impact of Out of India theory and gypsies movement in terms of cultural diaspora.

Part4: Establishing the relationship of the movement with the ideology of Cosmopolitanism.

2.1. Components of research

The components of research will include

- Analysing the linguistic relationship between the Indo-European languages.
- Describing the textual evidence in regard of the various theories.
- Archaeological evidences in support of the theories.
- Results of genetic similarity, if any.

2.2. Conceptual framework

3. Review of Literature

3.1. Location of first human settlements, Out of Africa theory.

Earliest known Homo sapiens remains are considered to be a group of bones found at the Omo-Kimbish formations, near the Ethiopian Kimbish Mountains dated as far back as 195,000 years old. It is believed that it is from this area humans spread out to cover all continents except Antarctica by 14000 BP. Till now the earliest Human remains found in India dates back to 70,000 years ago. Found in Jwalapuram, Andhra Pradesh.



Out of Africa Theory: is the most widely accepted model of the geographic origin and first migrations of anatomically modern humans. As per this theory Humans may have crossed over into Arabian Peninsula as early as 125,000 years ago. From Middle East migration continued to India around 70,000 years ago and South East Asia shortly after. From here they could have crossed to Australia, New Guinea. Migration to Europe took some what longer and dates back 43-45000 years ago. This movement of anatomically modern humans resulted in there interaction with population of other genus Homo such as Neanderthals and *Homo erectus* and thus eventually replacing these other genus Homo species.

But recent findings by Israeli university of human bone remains in caves near Ben Gurion airport of Israel dates back to 400,000 yrs. ago and some other theories proposed against it raises serious doubt on Out of Africa theory, but further intensive research needs to happen to totally replace Out of Africa theory.

3.2. Proto Indo Europeans

Findings of the earliest human body remains may show the origin of Human beings in Africa, but this is not the reason to believe that Africa is the birth place of civilizations to come. An area where the humans first settled, formed a common language to communicate, there are signs that show the presence of intelligent tools and knowledge which can be carried forward is more likely to be the cradle of civilizations.

Researchers have called these people as Proto Indo Europeans, thus these were the speakers of the Proto-Indo-European language. (A reconstructed prehistoric language of Eurasia). This is believed to be the mother of all modern languages and its speakers as the people that migrated to different parts of the world to start different civilizations and became a separate race. Proto-Indo-Europeans likely lived during the late Neolithic, or roughly the 4th millennium BC. Thus the location of the land where the proto Indo Europeans resided will be the cradle of civilizations.

3.3. Theories on Location and Migration of Proto Indo Europeans.

Kurgan Hypothesis: The **Kurgan hypothesis** is one of the most accepted proposals about early Indo-European origins, which postulates that the people of an archaeological "Kurgan culture" (a term grouping Yamna (pit grave) culture and its predecessors) in the Pontic steppe as the most likely location of the speakers of the Proto-Indo-European language. The Kurgan hypothesis was first formulated in the 1950s by Marija Gimbutas. As per this theory these people were nomadic pastoralists, who, by the early 3rd millennium BC expanded throughout the Pontic-Caspian steppe and into Eastern Europe.

Marija Gimbutas search for Indo-European origins was a pioneering interdisciplinary synthesis of **archaeology** and **linguistics**. Her original theory identifies four successive

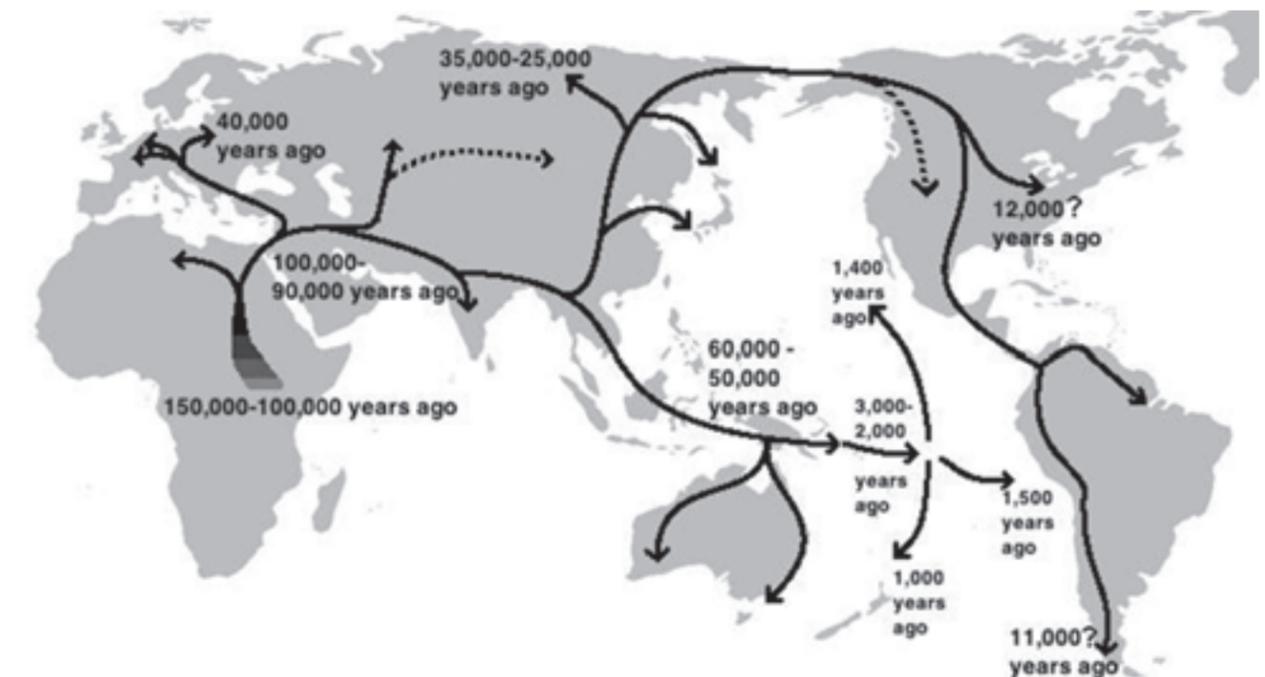


Figure 1: Depicting the migration routes taken by anatomically advanced Humans as per Out of Africa theory. (Source: <http://www.sott.net/>, Harrison KoehliSott.net Thu, 23 Aug 2012)



stages of the Kurgan culture and **three successive proposed "waves" of expansion**

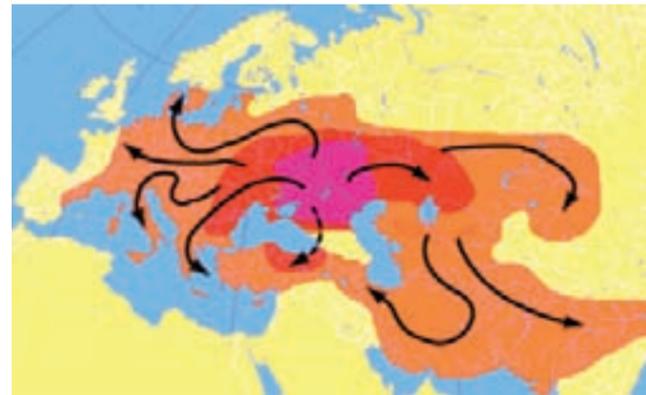


Figure 2: Map depicting the location of Proto Indo Europeans and their subsequent migration in three phases as per Kurgan hypothesis, (Source: Wikimedia Commons, User Dbachmann, Own work, January 1, 2005)

The success of the kurgan people in expanding and taking over all the other settlements and cultures was attributed to:

- Domestication of horses.
- Invention and Use of Chariot.

This made Kurgan people's migration more in to invasion than diffusion, on the basis of which Aryan Invasion theory was propagated.



Figure3 : depicting the origins of Proto Indo Europeans in Anatolia (present day Turkey) and the migration routes taken by them. (Source: <http://nshankiramidzhyan.com/>)

Anatolian Hypothesis: Is an alternative theory to Kurgan hypothesis, The main proponent of the Anatolian hypothesis was Colin Renfrew, who in 1987 suggested a peaceful Indo-Europeanization of Europe from Anatolia from around 7000 BC with the advance of farming.

The hypothesis suggests that the speakers of the Proto-Indo-European language (PIE) lived in Anatolia during the Neolithic era, and associates the distribution of historical Indo-European languages with the expansion during the Neolithic revolution during the seventh and sixth millennia BC.

The main strength of the this hypothesis lies in its linking of the spread of Indo-European languages with an archaeologically known event (the spread of farming) that is often assumed as involving significant population shifts.

According to Renfrew (2004), the spread of Indo-European proceeded in the following steps:

Around 6500 BC: Pre-Proto-Indo-European, located in Anatolia, splits into Anatolian and Archaic Proto-Indo-European, the language of those Pre-Proto-Indo-European farmers who migrate to Europe in the initial farming dispersal.

Around 5000 BC: Archaic Proto-Indo-European splits into North western Indo-European (the ancestor of Italic, Celtic, and Germanic), located in the Danube valley, Balkan Proto-Indo-European (corresponding to Gimbutas' Old European culture), and Early Steppe Proto-Indo-European (the ancestor of Tocharian). This theory is not academically favoured one.

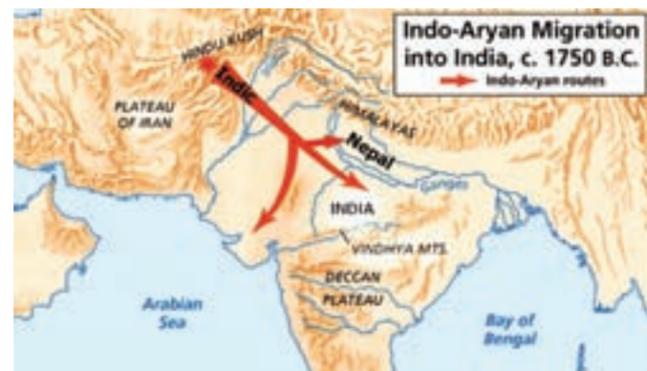
3.4. The Indo Aryan Migration Debate: Out of India Theory

The **Indo-Aryan migration debate** is a debate about the place of origin of the Indo-Aryan languages of the Indo-European family.

The standard view today is that the Indo-European languages originated somewhere in between India and Europe, either on the Pontic steppes (according to the prevailing Kurgan hypothesis), or in Anatolia as discussed above.

The Indo-Aryan migration theory sees the Indo-Aryan-speaking people as having migrated from the northwest and arrived in the subcontinent, interacting with the native Dravidian-speaking and other groups already present in India. It is believed to be a part of Indo European migrations discussed above.

However, in the 20th century, some scholars brought back the Indigenous Aryans model, according to which the Indo-



European language, or at least the Indo-Aryan languages, originated within the Indian subcontinent, as an alternative to the established migration model.

The indigenist view sees the Indo-Aryan languages as having a deep history in the subcontinent and being the carriers of the Indus Valley Civilization (whose linguistic affiliations are otherwise considered to be unknown). This view proposes an older date than is generally accepted for the Vedic period, which is generally considered to follow the decline of Harappan culture.

Main arguments raised in favour of Indigenous Aryans are: Postulates of Out of India theory

- Presenting the Aryan migration theory as Aryan Invasion Theory of the western world and then debunking it by pointing to the supposed lack of genetic and archaeological evidence to support such an "invasion" into northwest India.
- Questioning the methodology of linguistics as taken by Indo Aryan migration theory to prove its point.
- Reinterpretation of the linguistic data, arguing for the ancient, indigenous origins of Sanskrit.
- Contesting the possibility that small groups can change culture and languages in a major way.
- Dating the Rig Veda and the Vedic people to the 3rd millennium BC or earlier;
- Identifying the Sarasvati River with the Ghaggar-Hakra River, which dried up c. 2000 BC;
- Identifying the Vedic people with the Harappan Civilisation;
- Equating the Harappan Civilisation, Vedic Culture and the Vedic-Puranic chronology.

On the Basis of the above mentioned points Out of India theory was proposed.



As per this theory: Aryans were indigenous people of the Indian sub-continent and which includes arguments against the Indo-Aryan migration theory, and arguments to re-date the Vedas and the presence of the Vedic people in accordance with traditional, Vedic-Puranic dating's. The idea of "Indigenous Aryans" also implies a migration "Out of India" to Europe and East Asia.

The theory has been widely criticized and been called a politicized one by experts and is considered a Hindu nationalist agenda aiming at 'rewriting' history out of national pride or for the purpose of 'nation building'.

But same can be said for theories proposed by the western scholars as said by Danino in his quoting of Sri Aurobindo:

Sri Aurobindo wrote: "In India we have fallen during the last few centuries into a fixed habit of unquestioning deference to authority. We are ready to accept all European theories, the theory of an Aryan colonizing of a Dravidian India, the theory of Nature-worship and henotheism of the Vedic Rishis as if these hazardous speculations were on a par in authority and certainty with the law of gravitation and the theory of evolution."

"So great is the force of attractive generalizations and widely popularized errors that all the world goes on perpetuating the blunder talking of the Indo-Aryan races, claiming or disclaiming Aryan kinship and building on that basis of falsehood the most far-reaching political, social or pseudo-scientific conclusions." (Sri Aurobindo, the Origins of Aryan Speech, in "The Secret of the Veda")

The Out of India theory has been criticized for relying heavily on ancient and traditional texts like **Puranas** and other scriptures rather than having a solid scientific and technical backing.

The reasoning given by theorists in favor of out of India theory can be tested by further research upon the below mentioned fields which have been used by all other theories.

This can be done by researching four fields, which are:

1. Study of Linguistics
2. Textual evidence in support of the theory
3. Archeological findings.
4. Analyzing the chronological order of events accepted all over the world and trying to relate it with the theory.

Present Justifications given for the Theory

The age of Rig Veda can be judged by the following facts

- **Srasvati River** is mentioned in the Vedas, the river dried in 2000 BC, so the Rig Veda must have been written before this time.
- Also mention of **wheel** is there in the Rig Veda which was invented in 4000 BC, thus we can deduce that it was written after this time period.
- Textual evidence can be found in the inscribed stones found in the **Kassites, Hetits and Mitanni** which show



Vedic names and Vedic Gods. Which is a clear indication that these names came into existence when the Vedic people Migrated to these areas there languages changed but the Vedic names that they carried remained.

- Recent Archeological findings in India.



Figure 4: Map depicting the routes of Indus and proposed Saraswati river beds

An archaeological site in the Gulf of Khambhat off the north western coast of India includes submerged townships that may predate the oldest civilizations of Mesopotamia. While much conjecture exists around the implications of this discovery, the recent finding means that a consensus theory has yet to be established.

Among the artifacts recovered from the gulf of Khambhat were a piece of wood, pottery shreds, weathered stones initially described as hand tools, fossilized bones, and a tooth. Artifacts were sent to the National Geophysical Research Institute(NGRI) in Hyderabad, India, the Birbal Sahni Institute of Pale Botany (BSIP) in Lucknow, India, and the Physical Research Laboratory in Ahmedabad, India. The piece of wood was carbon dated to an age of 9,500 years old.



Gulf of Khambhat on the Right

Figure 5: Map showing the routes of migration from India to rest of the world as per Out of India theory. (Source: vamadevananda.wordpress.com)

Latest discoveries from Bhirrana, Haryana, in India since 2012 onwards, by archaeologist K. N. Dikshit indicate that Hakraware from this area dates from as early as 7500 BCE, which makes Bhirrana the oldest site in Indus Valley civilization. A piece of wood recovered from the site, possibly a tool, has been radio carbon dated to 7500 BCE, indicating settlement at a very early period.

3.5. Gypsies Movement

Gypsies migration mainly refers to movement of Romani people which are an **Indo Aryan ethnic group**. They comprise of many sub groups such as **Roma, Sinti or Sindhi, Kale or Romani**.

They originated in northwest regions of the Indian subcontinent and left sometime between the 6th and 11th century to work in Middle Eastern courts of their own volition, or as slaves. A small number of nomadic groups were cut off from their return to the subcontinent by conflicts and moved west, eventually settling in Europe, Turkey and North Africa via Iran.

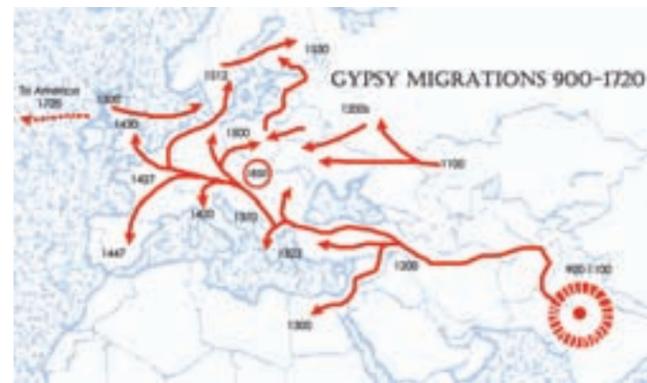


Figure 6: Depicting the proposed timeline and routes of migration of Gypsies from India to Europe from Middle East and then to America, (source: dnaconsultants.com, gypsy migration.)

Gypsies Relation with Indus Valley civilization: Although the actual believed date of migration of gypsies to Europe and that of people from a pre Harappa civilization as per out of India theory.

3.6. Cultural Diaspora: results of gypsies movement out of India

The proof for this comes from the Cultural Diaspora that can be witnessed by analysing the cultures of the places where the gypsies migrated.

Archaeological proofs show that Gypsies contributed to foundation and spreading of Indus Valley Civilization which is one of the oldest civilizations of humanity. It's strongly possible



that Craft productions owned to Indus Valley Civilization were carried to Mesopotamia and Middle East by Gypsies. Gypsies sowed seeds of the civilization to new lands.

Indus Valley Civilization was a society in which crafts and craftsmen were in an important position 4500 years ago. **Some archaeologists say that Gypsy peoples had an important role in foundation and spreading of Indus Valley Civilization.** It's believed that trade journeys of Gypsy peoples strongly influenced spreading of crafts including metal working to Mesopotamia and Middle East.

A living proof of connection between Gypsy peoples and Indus Valley Civilization is the metal working of Dhokra Gypsies living in Bengal region of India. The niceties of Dhokra art depending on producing statues using various metals are only known by Dhokra Gypsies today. The most important data convincing us that there is an important connection between Gypsy people and Indus Valley Civilization is that the oldest examples of Dhokra statues founded in Mohenjo Daro which is one of the important settlements of Indus Valley Civilization.

Gypsies earned their living by giving performance of folk dances, along with the pursuing of other nomadic activities. Gypsy dance has influenced western dance styles like the Waltz and the Fox Trot. Even the American Break dance and other dances associated with jazz music have borrowed elements from the gypsy folk dance. Flamenco the famous dance style of Spain is strongly influenced by Gypsies.



Figure 7: Dancing women statue found in Indus valley civilization, made from Dokra craft of the gypsies.

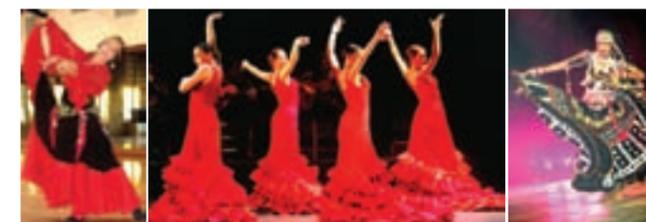


Figure 8: Dances of European Gypsy women, Flamenco of Spain and Kalbelia dance of gypsies in Rajasthan show similarity in style and origins

The Gypsy folk dance is itself a free flowing and care free dance, a modified version of which is found in the folk dances of many Adivasi and nomadic tribal communities in India.

4. Conclusion

All the theories propagated for the spread of human beings from one part of the world to another and mixing with the culture and people of those new areas have all suggested that the main spread of earliest civilizations developed in one region.

The location of that origin point is disputed by a few scholars and historians and most agree upon it being the Pontic steppes. The alternate theories presented also have good backup for their postulates but are also criticised for a certain theories for which they do not have enough backing.

The case with Out of India theory is that it has been not taken seriously by most scholars of the Western world and even by historians of India who have studied works of western scholars, without trying to understand its reasoning and calling it a religious and national propaganda.

Then why is it necessary to further research upon a theory which no one is willing to accept in the academic world?

The Answer to this question lies in the fact that the theory of Indigenous Aryans does not propagate Hinduism because the understanding of the Vedas and true meaning of Aryan culture has been understood wrongly.

Aryan culture is actually not a race but more of a way of life: which suggests of a life style which is oneness among the people, respect for all living things, helping the one in need and talks about assimilating and accepting all cultures and people living together harmoniously.

Therefore if any research done scientifically to prove Out of India theory becomes successful and is accepted by the whole world then the true Aryan culture can spread in this world making it a peaceful place to live. The migration of Gypsies which is accepted by the world shows how mixing of cultures result in wonderful things in the form of art and craft.

This brings me to the ideology of cosmopolitanism:

Cosmopolitanism is the ideology that all human beings belong to a single community, based on a shared morality.

Cosmopolitanism is a western notion that epitomizes the need social agents have to conceive of a political and cultural entity, larger than their own homeland, that would encompass all human beings on a global scale. The world today needs to accept this ideology as with time the borders will only depict the national boundaries, but all the nations will have to become cosmopolitans and adopt a true Aryan culture.



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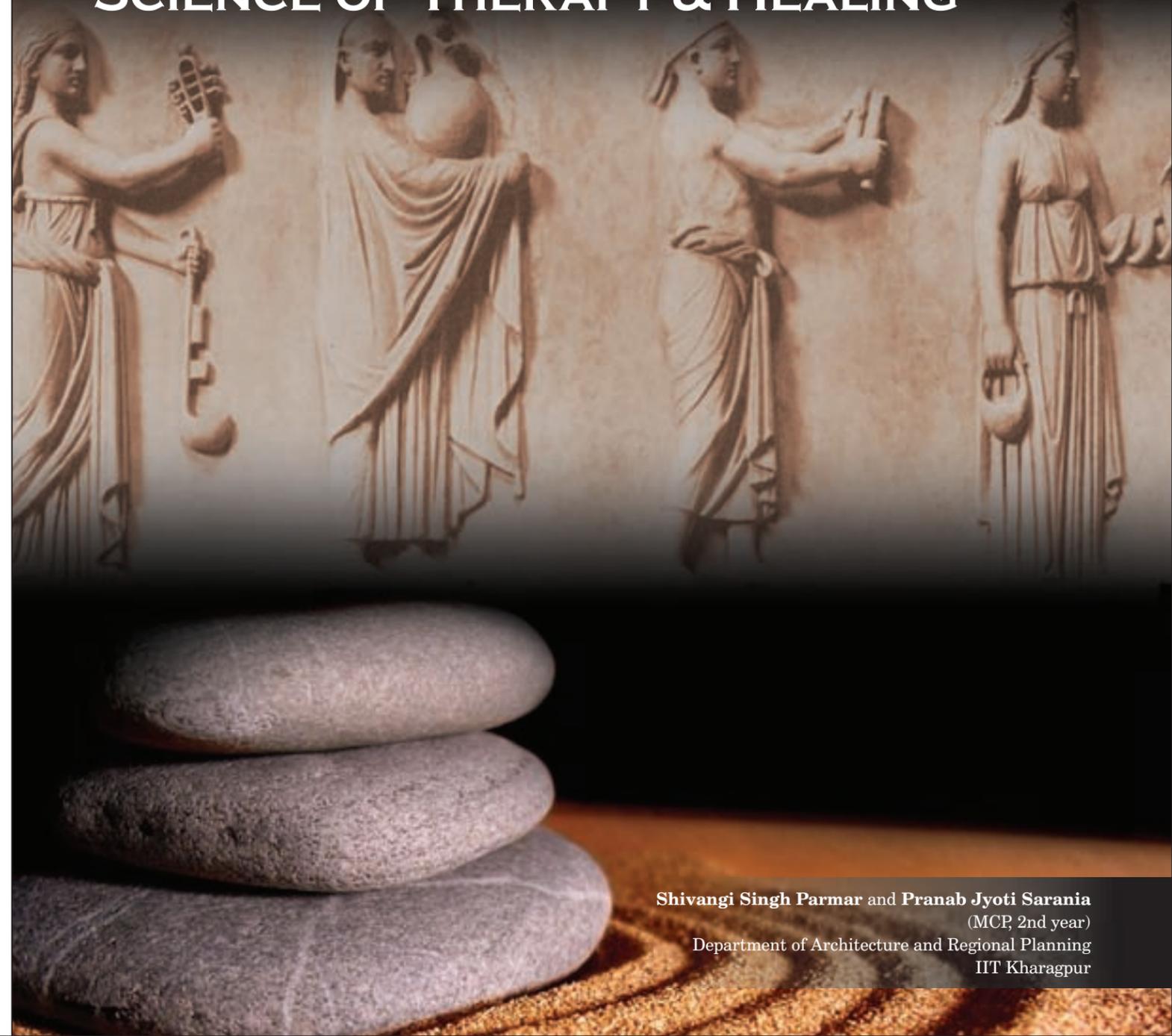
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RELATIONSHIP BETWEEN BUDDHISM & CHRISTIANITY: CASE OF THERAPEUTAE – SCIENCE OF THERAPY & HEALING



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THEME OF THE PAPER



At about 4 p.m. the general conversation came to a close, and the gathering dispersed, except for a few gentlemen with whom Swamiji continued his talk on different subjects, such as England and America, and so on. In the course of conversation he said:

"I had a curious dream on my return voyage from England. While our ship was passing through the Mediterranean Sea, in my sleep, a very old and venerable looking person, Rishi-like in appearance, stood before me and said, 'Do ye come and effect our restoration. I am one of that ancient order of Therâputtas (Therapeutae) which had its origin in the teachings of the Indian Rishis.

The truths and ideals preached by us have been given out by Christians as taught by Jesus; but for the matter of that, there was no such personality by the name of Jesus ever born. Various evidences testifying to this fact will be brought to light by excavating here.' 'By excavating which place can those proofs and relics you speak of be found?' I asked. The hoary-headed one, pointing to a locality in the vicinity of Turkey, said, 'See here.' Immediately after, I woke up, and at once rushed to the upper deck and asked the Captain, 'What neighbourhood is the ship in just now?' 'Look yonder', the Captain replied, 'there is Turkey and the Island of Crete.'

Was it but a dream, or is there anything in the above vision? Who knows!



Conversation and dialogues with **Swami Vivekananda**
(Recorded by Surendranath Sen)
Belur Math, Monday, The 24th January (1898)

Relationship between Buddhism & Christianity: Case of Therapeutae – Science of Therapy & Healing

Shivangi Singh Parmar and Pranab Jyoti Sarania

Abstract

This paper uses the ancient sources of Buddhism and Egypt to describe the connection between Buddhism and Christianity in terms of Therapeutae who were influenced by Buddha around 250 century. History of Catharsis (healing) and Therapy is associated with the ancient mystic ascetics of Alexandria known as Therapeutae. According to some scholars, Therapeutae were influenced by the Asoka's Buddhist missionaries from ancient India. There were similarities between the Therapeutae and Buddhist monasticism and the science of Healing based on the concept of Dualism of body and soul. On the other hand, Therapeutae monasticism has been seen as the forerunner of and the model for the Christian ascetic life. It has even been considered as the earliest description of Christian monasticism. The objective of the paper is to understand the role of Therapeutae in the relationship between Buddhism and Christianity in light of the Science of Healing and Therapy.

Keywords: Therapeutae, Therapy and Healing, Concept of Dualism, Buddhist Monastic, Christian Hermits

1. Introduction

The Buddhism and Christianity are the two traditions which are the pioneers of the concept of Dualism of body and soul and inclusive growth. The tradition of Science of Therapy and Healing is known to both Buddhism and Christianity and the relationship between these two are linked by the critical names of the two mystical ascetic sects: Therapeutae of Alexandria and Essenes of Judea. The Therapeutae of Roman Judea were known under the name of Essenes and had their origin in Alexandria. According to scholars like Philo, Clement of Alexandria and Eusebius of Caesarea Therapeutae and Essenes were the mystical ascetics of Alexandria known as 'the

Healers'. The monastic life of Therapeutae were considered to be similar of the monks of the Buddhist monastery which was not common in the Alexandria before. Further the spirit and influence of Theravada Buddhism indirectly influences the Christianity through Alexandrians and the Gnostic Philosophers.

1.1. Timeline of Buddhism, Christianity, Therapeutae and Essenes

According to the historical timeline, existence of *Therapeutae* of Alexandria and Essenes of Roman Judea was around 20 B.C.E to 50 C.E.

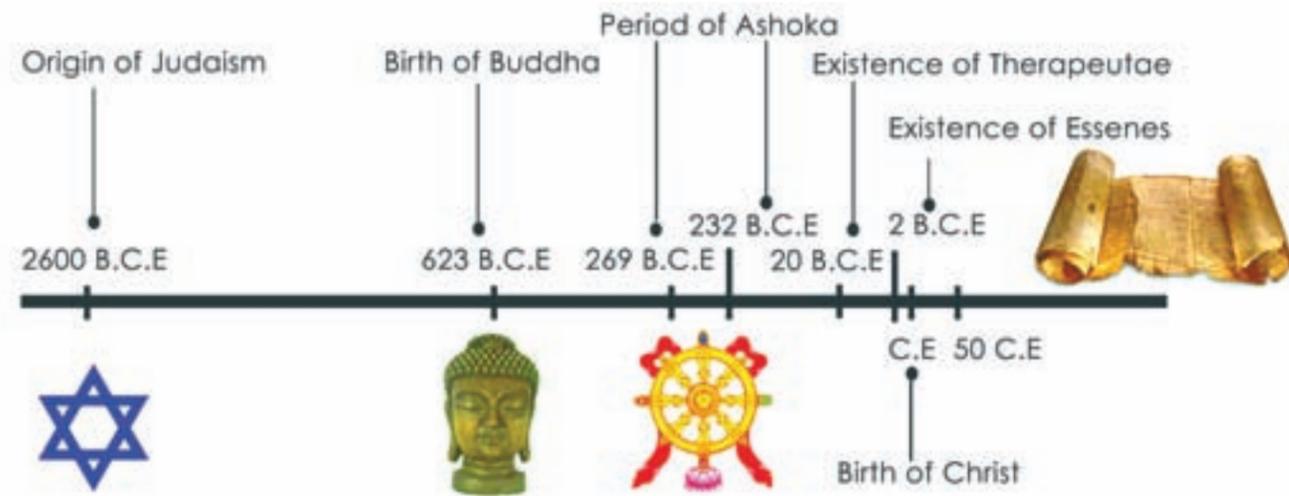


Fig 1. Timeline of Buddhism, Christianity, Therapeutae and Essenes

2. Study approach

2.1. Components of research

The study paper is divided into the four basic sections -

- Study of Therapeutae & Essenes
- Formative influences of Buddhism on Therapeutae & Essenes
- Therapeutae and Essenes: Precursor of Early Christian Monastic Order

- Linking Philosophies of Buddhism and Christianity to the Science of Therapy & Healing

2.2. Conceptual framework

Framework of the study is based on the basic understanding of the inter-connectedness of the *Therapeutae* and *Essenes* with the Theravada Buddhism and Early Christian Monastic order.

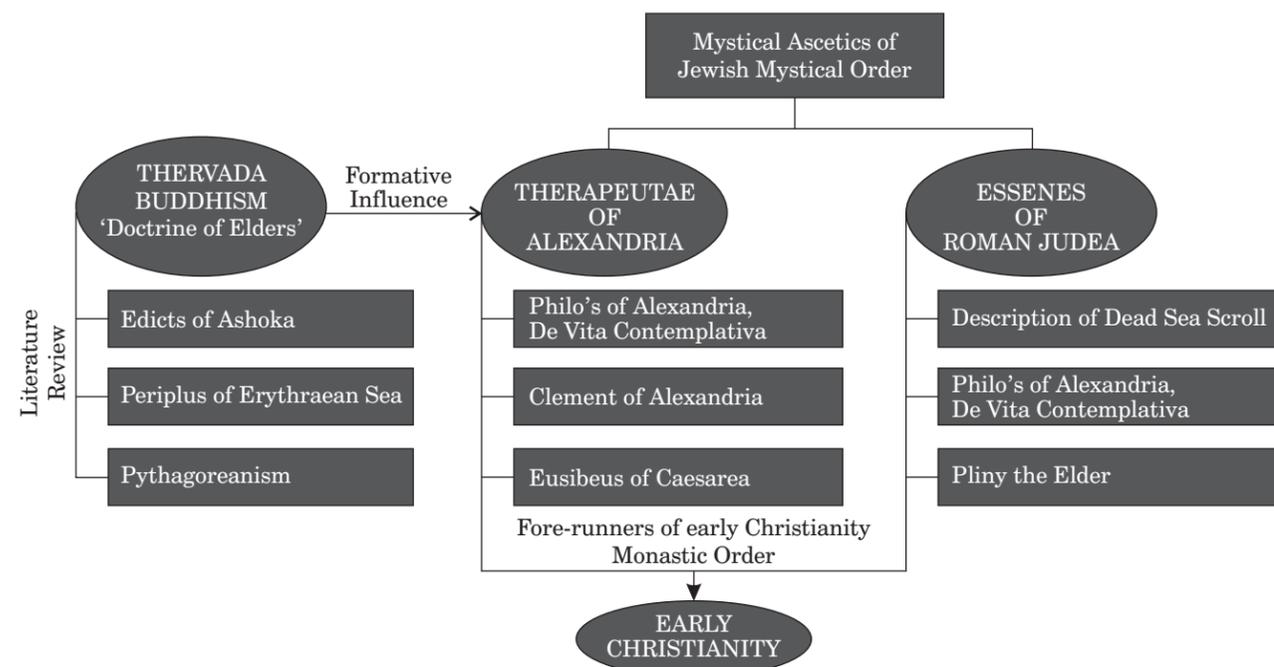


Fig 2. Therapeutae and Essenes as a link between Theravada Buddhism & Christianity



3. Review of Literature

3.1. Therapeutae and Science of Therapy and Healing

Description of *Therapeutae* and its relationship between Science of Therapy and Healing are done under following sections:

- Philo's Description of Therapeutae in De Vita Contemplativa
- Account of Therapeutae by Clement of Alexandria
- Account of Eusebius of Caesarea
- Relation between the Therapeutae and Essenes
- Therapeutae and Tradition of Kabbalah

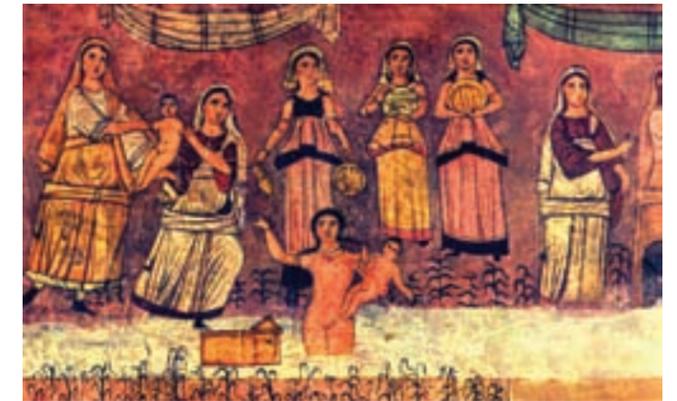


Fig 4. Therapeutrides with Abraham in Nile

3.1.1 Philo's Description of Therapeutae in De Vita Contemplativa



Fig 3. Lake Mareotis, Alexandria

Philo of Alexandria (25 BCE – 50 CE), also called Philo Judaeus, was a Hellenistic Jewish philosopher who lived in Alexandria, in the Roman province of Egypt. The primary source concerning the Therapeutae is the account De Vita contemplativa ('The Contemplative Life'), purportedly by the Jewish philosopher Philo. The *Therapeutae* were Jewish sect which flourished in Alexandria and other parts of the Diaspora of Hellenistic Judaism in the final years of the Second Temple period of Judaism. The Pseud epigraphic Testament of Job is possibly also a Therapeutae text.

Philo records that they were "philosophers" and speaks specifically about a group that lived on a low hill by the Lake Mareotis as shown in fig.3, close to Alexandria in circumstances resembling monastic life that existed in the birth place of Theravada Buddhism. *Therapeutae* belonged to the group called by scholars the 'extreme allegorizers'. These allegorizers, known to us from Philo's De Migratione. According to Philo's account the female Therapeutae were the first women philosophers known as Therapeutrides. Therapeutrides with Abraham in a procession in river Nile is shown in fig.4.

Philo's De Vita Contemplativa description of *Therapeutae* and *Therapeutrides* -

- Opens up new dimensions of Jewish life and thought in ancient Alexandria
- Provides a model of women philosophers that were previously little known
- Sheds new light on Hellenistic and Roman Egypt
- Original feminist approach of feminist historiography
- Tradition of Gnosticism

3.1.2. Account of Clement of Alexandria

Titus Flavius Clemens (c. 150CE – c. 215CE), known as Clement of Alexandria to distinguish him from the earlier Clement of Rome, was a Christian theologian who taught at the Catechetical School of Alexandria. Those ancient Therapeutae were Christians and their writings were gospels and epistles expressing the view that what is called Christianity was borrowed from the Therapeutae, or Essenes, a view held also by other outstanding men of the early Christian Church.

These *Therapeutae* were known under the name of the Essenes, or healers, and they had their origin in Egypt. It was there that the Essenes principally dwelt for over two hundred years before the time of Jesus. Their centre was Alexandria, site of the world's theological university, where the wisdom of the time was focused in those days, and where there was the greatest library in the ancient world.



3.1.3. Evidences of Therapeutae by Eusebius of Caesarea

It has even been considered as the first picture of Christian monasticism. Such an identification can already be found in Eusebius of Caesarea. In his Ecclesiastical History, Eusebius, referring first to apostolic foundations of the Church of Alexandria by St. Mark, points out that Philo's Therapeutae were the first Christian monks. He sees in their renunciation of property, in their chastity of life, in their severe fasting, in their solitary lives, in their devotion to scriptural reading and in other aspects of their ascetic life, the Christian monks. Eusebius was so certain that Philo was describing the life of the first Christian monks that he argues that Philo himself, not only knew the life of the first Christian ascetics, but also had himself adopted it.

3.1.4. Relationship between Therapeutae and Essenes

The *Therapeutae* of Roman Judea were known under the name of Essenes and had their origin in Alexandria. The first reference of Essenes is by the Roman writer Pliny the Elder in his book 'Natural History'. He relates in a few lines that the Essenes do not marry, possess no money, and had existed for thousands of generations. Unlike Philo, who did not mention any particular geographical location of the Essenes other than the whole land of Israel, Pliny places them in Ein Gedi, next to the Dead Sea.

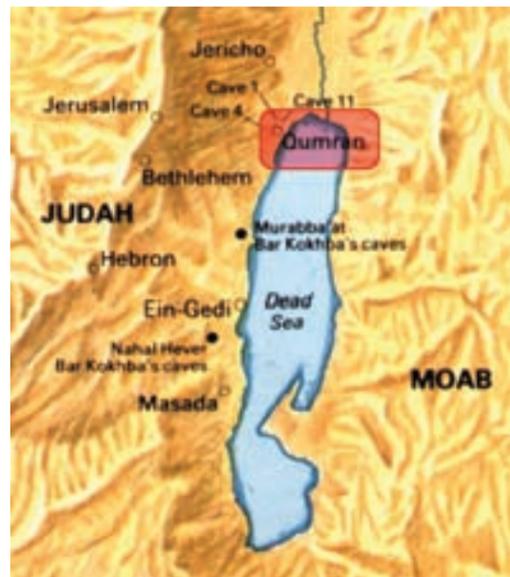


Fig 5. Qumran & Dead Sea

The Dead Sea Scrolls of Qumran Caves are a collection of some 981 different texts discovered between 1946 and 1956 in eleven caves from the immediate vicinity of the ancient settlement at *Khirbet Qumran* in the West Bank shown in fig.5. The caves are located about 2 kilometres inland from the northwest shore of the Dead Sea, from which they derive their name.

3.1.5. Therapeutae and Tradition of Kabbalah

The medieval flowering of Kabbalah in the south of France in the 13th century was inspired by Jewish Gnostic tradition of *Therapeutae* that had somehow survived from the first centuries (G. Scholem, *Origins Of The Kabbalah*, 1987). This belief encouraged Jews to enthusiastically embrace the philosophy and mythology of the Pagan Gnostics to augment their own tradition, producing a large number of spiritual treatises which synthesized Pagan and Jewish motifs. Kabbalah's definition varies according to the tradition and aims of those following it, from its religious origin as an integral part of Judaism, to its later Christian, New Age, and Occultist syncretic adaptations.

3.2. Formative influences of Buddhism on Therapeutae and Essenes

Scholars found many evidence which describe the influence of Buddhism on *Therapeutae* and Essence. Some of the impotent evidence that influences Buddhism on *Therapeutae* and Essenes are studied on the basis of the following factors:

- Importance of trade linkages and Buddhist missionaries between Ancient India and Egypt
- Interrelationship between Therapeutae and Theravada
- Similarities between the Therapeutae and Buddhist monasticism
- Concept of Pythagoreanism and its interlinkages

3.2.1 Importance of trade linkages & Buddhist Missionaries between Ancient India and Egypt

It has been found that Indian Archaeologists Discover Contact and Correlations between Ancient Egypt and India. Some of the highly specialized artifacts which are found in Indian as well as Egypt suggested that there is a direct contact between the two countries (India and Egypt) during this period (Pharaonic Egypt 3400-525 B.C.) but which, surprisingly, are absent in the vast West Asian region between Afghanistan,



Fig 6. Bilingual Edict by Ashoka



Iran, Iraq and Syria. It we taking about the relationship between Buddhism and ancient Christianity, the contact of early Buddhism with Ancient Egypt has been verified during the period of king Ashoka, in the city of Menefer (Memphis), description of the. However, the contact continued and was later verified that there were Buddhists in the Ancient Egyptian city of Alexandria. There a special form of Buddhism developed that spread throughout Asia Minor (Middle East) between 100 B.C.E and 200 A.C.E.

3.2.2. Interrelationship between Therapeutae and Theravada

The Buddhist origin of *Therapeutae* may spring from the mission of Emperor Ashoka. Many scholars found that, after the 3rd Buddhist council in around 250 BC, Ashoka had send Buddhist monk to various regions of the world to spread the teaching and thoughts of Buddha. He engraved on three rocks in different part of India, in two different alphabets, the names of five Greek Kings to whom he sent ambassadors are Antiochus of Antioch, Ptolemy of Alexandria, Antigone's of Macedon, Magas of Cyrene and Alexander of Epirus. No concrete record of the activities of these ambassadors sent to the West has ever been found, but it is tempting to speculate that the *Therapeutae* who lived in Egypt were somehow successors to these ambassadors.

3.2.3. Similarity between Therapeutae and Buddhist Monasticism

The similarities between the monastic practices of the *Therapeutae* and Buddhist monastic practices have led to suggestions that the Therapeutae were in fact Buddhist monks who had reached Alexandria, descendants of Ashoka's emissaries to the West, and who influenced the early formation of Christianity. According to the linguist Zacharias P. Thundy the name "Therapeutae" is simply a Hellenisation of the Pali term for the traditional Buddhist faith, "Theravada" (the "elders" of Buddhism).

3.2.4. Concept of Pythagoreanism and its interlinkages

India has had a large influence on the Middle East and the Near East, many of whose works are derived and translated from India. The importance attached to mathematics, the mysticism associated with it, ideas about transmigration of the soul, concepts like 'the wheel of birth', emphasis on contemplation, vegetarianism, progressive views on women, all are usually associated with Indian traditions and sciences. Nearly all the philosophical and mathematical doctrines attributed to Pythagoras are derived from India, particularly the Sankhya school.

The Pythagoreans are known for their theory of the transmigration of souls, and also for their theory that numbers constitute the true nature of things. They performed purification rites and followed and developed various rules of living which they believed would enable their souls to achieve a higher rank among the gods. Much of their mysticism concerning the soul seems inseparable from the Orphic

tradition. The Orphics included various purifactory rites and practices as well as incubatory rites of descent into the underworld.

3.3. Therapeutae and Essenes: Precursor of Early Christian Monastic Order

Philo's monarchism has been seen as the forerunner of and the model for the Christian ascetic life. It has even been considered as the earliest description of Christian monasticism. This view was first espoused by Eusebius of Caesarea in his Ecclesiastical History.

The practices described by Philo were considered as one of the first models of Christian monastic life. Eusebius was so sure of the identification of Therapeutae with Christians that he deduced that Philo, who admired them so, must have been Christian himself. This assumption prevailed in Christian circles until the end of the eighteenth century, when it was discovered that Philo's essay was pre-Christian. Like the first Christian hermits of the Egyptian desert, they were mostly anchorites (solitary hermits), rather than living communally, as later Christian monastic communities would do.

According to Pseudo-Dionysius, the semi-anchoritic character of the Therapeutae community, the renunciation of property, the solitude during the six days of the week and the gathering together on Saturday for the common prayer and the common meal, the severe fasting, the keeping alive of the memory of God, the continuous prayer, the meditation and study of Holy Scripture were also practices of the Christian anchorites of the Alexandrian desert.

3.4. Linking Philosophies of Buddhism & Christianity to Science of Therapy & Healing

The Therapeutae were similar to alchemist. They gained knowledge from philosophies of different traditions like Hellenistic Greece, Theravada Buddhism and Judaism and synthesised to form the advance Science of Healing and Therapy. Later Therapeutae created different schools of philosophies and healing, the most important of which were Hermeticism, Neo-Platonism, and Christian Gnosticism. Greek medicine played an important role in their healing



Fig 7. Alexandrian Isiac (Therapeutic) Procession similar to the Theravada Buddhist



practices. From historical tracings, we can understand that this religious sect was the first organized medical and religious order of Therapeuticians.

'Soul and Body' Dualism represents the metaphysical stance of two distinct substances, each with a different essential nature. According to ancient philosophy of Dualism by Buddhism, Christianity or Therapeutae, process of healing is a two way step – first is the Healing of body and then the healing of Soul. According to Therapeutae, treatment is a holistic approach of healing of both body and soul, otherwise healing process will never be completed. Healing of body is done by medicines and healing of mind is done by mystical process like yoga, meditation and other spiritual rituals.

4. Conclusion

4.1. Major finding

Therapeutae and Essenes were the most important link between the two traditions of Theravada Buddhism & Christianity. These were the early monastic order of Alexandria which was a unique practice in ancient world of Judaism. Therapeutae may have been influenced by or descendants of Emperor Ashoka's Buddhist missionaries from ancient India. Indeed, the similarities between the Therapeutae and Buddhist monasticism are striking. Philo's monachism has been seen as the forerunner of and the model for the Christian ascetic life. It has even been considered as the earliest description of Christian monasticism. The ancient Science of Healing of Mind and Soul was practiced by the Therapeutae and Essenes which were influenced by the philosophies of Buddhism, Greek and other Gnostic orders.

4.2. Further research

The study of the relationship of the relationship between the Buddhism and Christianity and their inter-connectedness the mystical ascetic healers of Therapeutae and Essenes gave rise to the further queries about -

- The existence of mystical ascetic healers like *Therapeutae* in other parts of the Buddhist world
- Relationship between the concept of dualism of body & soul and the Science of Therapy & Healing.
- Relevance of the study of a highly advanced therapeutics by synthesis of scientific, metaphysical and ancient religious principles for use and practice of the healing arts in modern age as complementary to present medical practices.

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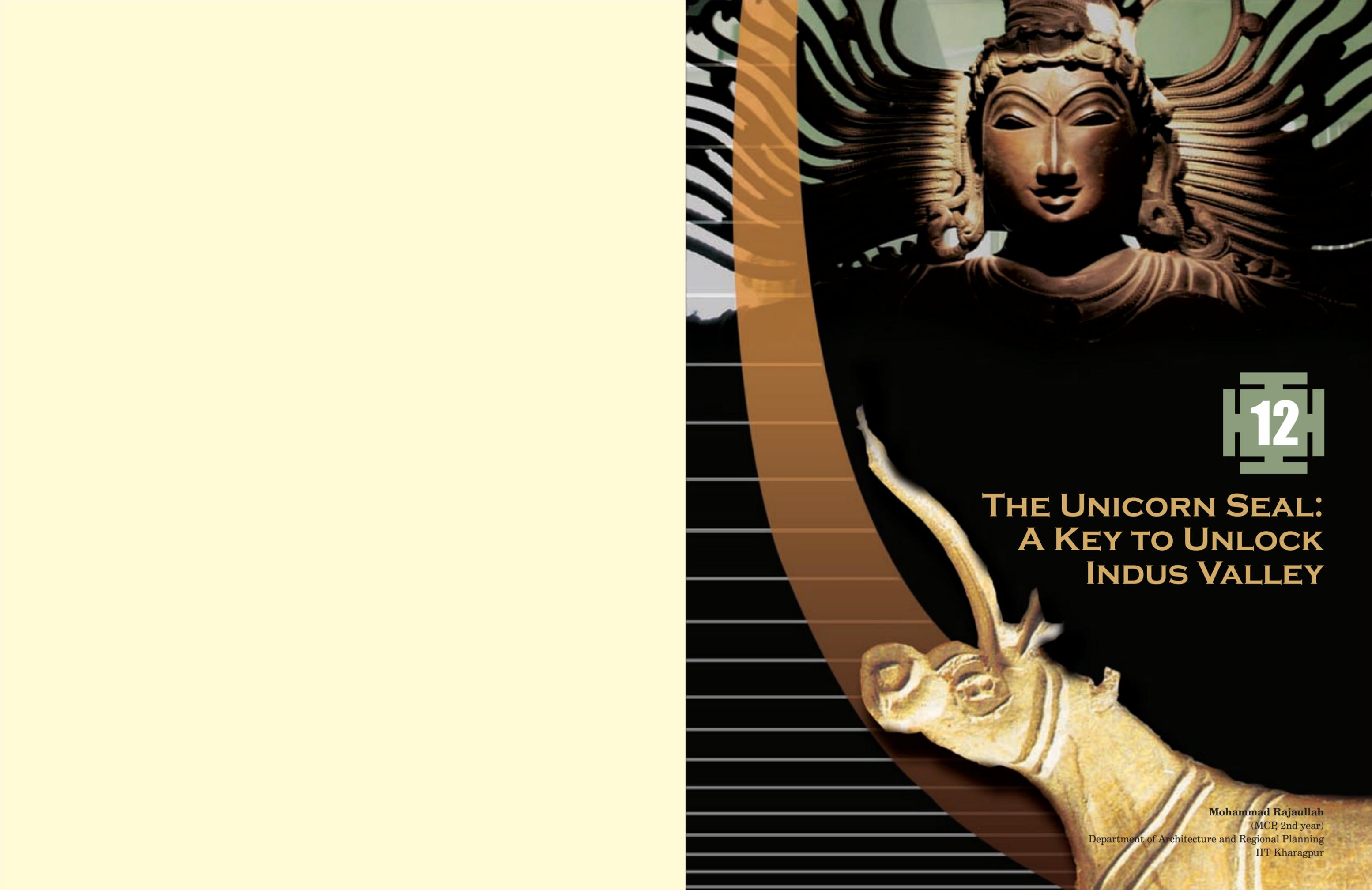
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12

**THE UNICORN SEAL:
A KEY TO UNLOCK
INDUS VALLEY**

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THEME OF THE PAPER



Oh, dear! No! neither Jesus is come nor Jehovah; nor will they come; they are now busy in saving their own hearths and homes and have no time to come to our country. Here is the self-same Old Shiva seated as before, the bloody Mother Kâli worshipped with the selfsame paraphernalia, the pastoral Shepherd of Love, Shri Krishna, playing on His flute. Once this Old Shiva, riding on His bull and laboring on His Damaru travelled from India, on the one side, to Sumatra, Borneo, Celebes, Australia, as far as the shores of America, and on the other side, this Old Shiva batted His bull in Tibet, China, Japan, and as far up as Siberia, and is still doing the same.

The Mother Kali is still exacting Her worship even in China and Japan: it is She whom the Christians metamorphosed into the Virgin Mary, and worship as the mother of Jesus the Christ.

Behold the Himalayas! There to the north is Kailâs, the main abode of the Old Shiva. That throne the ten-headed, twenty-armed, mighty Ravana could not shake—now for the missionaries to attempt the task?—Bless my soul! Here in India will ever be the Old Shiva laboring on his Damaru, the Mother Kali worshipped with animal sacrifice, and the lovable Shri Krishna playing on His flute. Firm as the Himalayas they are; and no attempts of anyone, Christian or other missionaries, will ever be able to remove them.



Swami Vivekananda
The East and the West: Introduction



The Unicorn Seal: A Key to Unlock Indus Valley

Mohammad Rajauallah

Abstract

Across the long millennia, in every land and time, the Unicorn is present, in book, and art, and rhyme. (Shepard, 1930). The Indus Seals provide an early insight into the culture and the people. The question that arises is whether the origin of the Unicorn seals still creates a ripple. Through Unicorn we may ask what does its iconography symbolise: In order to explain the findings through observation as the artistic representation of the Unicorn and its horn rise. Evidences from text and art have come from cultures and times; with cultures and religions around the world. We now formulate a hypothesis of its possible origins and its symbolism that rhymes.

Keywords: Unicorn, Divinity, Vedas, *Ekashringa*

1. Introduction

Indus Valley Civilization, the largest urban civilization that existed in the ancient world in the 3rd millennium BC, dwarfing the Near Eastern civilizations in size and in the uniformity and continuity of its remains. From a period of 2600 BCE to 1900 BCE roughly the Indus Valley Civilization covered an area of over a million square kilometres in South Asia, comprising of about 1000 settlements of varying sizes; geographically including almost all of modern Pakistan, parts of India as far east as Delhi and as far south as Bombay, and parts of Afghanistan. (Kenoyer, Ancient Cities of the Indus Valley Civilization, 1998)

The main corpus of writing from the Indus Valley Civilization is in the form of around two thousand inscribed steatite seals in good and legible conditions. Seals made from metals are extremely rare but few copper and silver examples are known. The seals are mostly square shaped that has a line of script along the top and a carved animal in the central portion as shown in fig. (1) below.

Several attempts have been made to decipher the Indus script over the years on the lines of Sanskrit and Dravidian languages but decipherments of the script have not been generally agreed



Figure 1. Few Examples of seals from The Indus Valley (Copyright Harappa Archaeological Research Project/J.M. Kenoyer)

upon. However the Indus seals feature a number of images that may provide the key to the people and its culture. The Indus seals actually reflect the images of later Indian art with figures in seated meditation, pipal leaf designs, and sacred bulls and even the swastikas. (Caspers, 1991)

Yet curiously, the most common image on the Indus seals that of a "UNICORN", a mythological animal have largely disappeared from the iconography of later India. And yet the Unicorn features in iconography of number of other civilizations and religions.



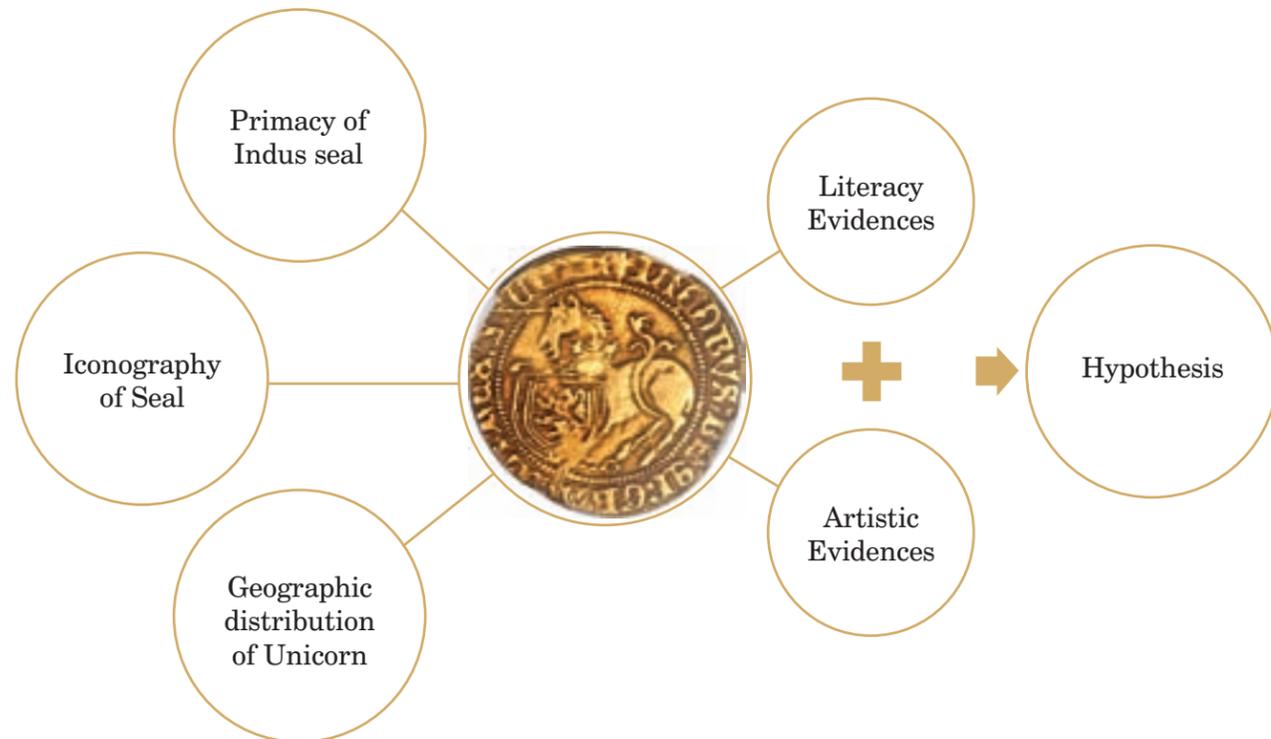
The question arises as to why does it have primacy among other seals, what does the Unicorn indicate, and whether it has any counterpart in ancient literature and traditions of India, particularly in the Vedas. Also we look at the Unicorn connections in various cultures and links with the Indus Valley civilisation. In this paper we look into the literary and iconographic connections of the Unicorn, which are quite extensive.

2. Study approach

2.1. Components of research

- Primacy of the Unicorn seal: the no of Unicorn seals discovered and its geographic distribution.
- Iconography of the Unicorn Seal: Interpretation of the cauldron, the unicorn and its symbolism.
- Literary evidences to the Unicorn: Evidences from Vedas, Mahabharata, literary text like 'Indika' and cultures from around the world.
- Evolution of the Unicorn Icon :Evolution from the Indus seals to art forms(mosaic, sculptures & coins)

2.2. Conceptual framework



3. Review of Literature

3.1. Primacy of the Unicorn Seal

Among the entire collection of seals the Unicorn seals alone constitute 70.1% (1250 out of total 1783 excavated seals). And also that majority of it is concentrated at Mohenjo-Daro and Harappa, is the most distinctive feature of the Indus Seals. All other motifs only constitute around 1% to 5%, majority of which is below 1%. Also the Unicorn seal is the only seal found at all the sites of the Indus Valley where at least one seal is found. These seals are not confined in the major urban centres but also found from minor urban sites and small settlements. Also some Indus seals were discovered in Mesopotamia and Sumer suggesting maritime trade relations and use of these seals as identification markers for traders. Priority of trade transactions were in the hands of owners of the Unicorn seals irrespective of the site. (Konasukawa, 2014)

3.2. Iconography of the Unicorn Seal

The much debated question of whether these were Unicorn or bicorn animals have been settled with the finding of three-dimensional terracotta figure of the Unicorn and also by the fact that bicorn animals are clearly depicted in the other Indus

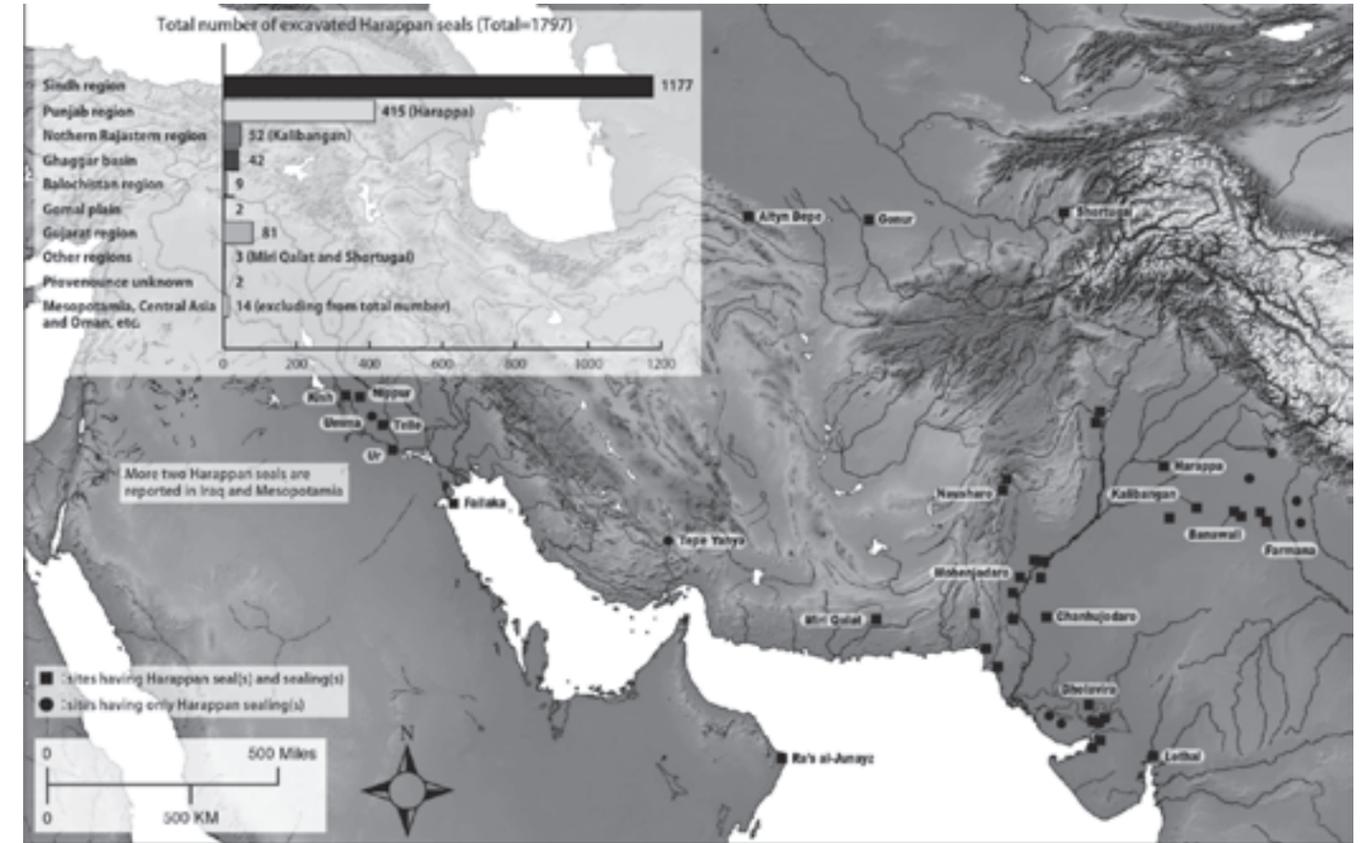


Figure 2: Sites that have yielded Indus seals. (Konasukawa, 2014)

seals excavated. Figure Typical example of an Indus Seal (A Unicorn seal, 1997) The animal depicted is generally male, body of which represents that of an antelope and sometimes that of an ox. The horn often displays stripes and occasionally is smooth. In the seal alongside the Unicorn depicted has a body of an antelope and the tail and eye that of an ox. A heart shaped stain is visible on the shoulder which is common in most of the seals could be a saddle.



Figure 3. Typical example of an Indus Seal (A Unicorn seal, 1997)



Figure 4a: Seal No. 387 (Indus Valley Civilization Seals)



Figure 4b: Seal No. 24 (Harappa and Mohenjodaro, 2015)



Figure 4c: Seal no 383 (Kalyan, 2011)



Figure 4d: Seal no 641 (Indus Valley Civilization Seals)



Seal no. 387 (fig 4a) displays two Unicorn heads generated by a pipal tree. In seal no. 383 (fig 4c), six animal heads rotate around a circle-like motif among them is a Unicorn too. Some archaeologists have argued that it represents the solar disk. Seal no. 641 (fig 4d) bears the impression of a six-pointed star, one of whose points is a Unicorn's head. The animal appears to be closely related to sun worship, a hypothesis supported by the fact that the Unicorn has been depicted on a number of occasions as being paraded in a procession, as though it were a divinity. A triad of zoomorphic divinities comprising a bison, a Unicorn and an ibex is depicted on seal no. 24 (fig 4b). (Tagliatesta, 2007)

The Indus Unicorn seal always has a trough like a cauldron placed in front of it. There are at least five theories about this object. One of which considers it as a feeding trough or "manger" still seen in Sindh today. Some later works connect it to contemporary offering stands used in central India today. It could also be a cage for birds or insects, or an incense burner. A fifth, more recent theory suggests that the object may have been the filter used to extract the intoxicating Soma drink described in the Rig Veda. (SEALS FROM MOHEN JO DARO)

The variations we see are not just differences in artistic approach but rather difference in idea of the actual form of the Unicorn which does not seem to reflect a single animal but a composite animal. However, the stance and the cauldron in front of the Unicorn remain remarkably uniform.

3.3. Literary evidences to the Unicorn

Reference to Unicorns can be found in early Vedic texts as well as Mahabharata. Mahabharata talks about Unicorn found in Harappan seals:

90-91: "The Gods and titans have never found my beginning, middle or end. Hence I am sung as the witness of the world, the Lord, the pervader, who has no beginning, middle or end."
92: "Having previously become the Unicorn Boar (Ekashringa Varaha), who increases joy, I upheld this world. Therefore I am called the Unicorn (Ekashringa)."

It also finds mention in Buddhist text as Ekashringa or Unicorn. (RAJARAM, 2012)

Rig-Veda 8.4.10 "O Indra, visit us like the thirsty 'rsya' which comes to drink water from avapana." Atharveda 4.4 refers rsys as a virilic animal, which corresponds with the Unicorn depicted in the Indus seals. Parisasa as described in Atharveda means an object protruding above the skin of an rsys. And parisasa were used by Vedic people to make tongs. Now if we examine, parisasa cannot be other than the single horn of the male animal, as no other organ protruding from the body of an animal are sturdy enough to make tongs. (Vajracharya, 2010)

The earliest recorded appearance of the Ch'i lin (Unicorn) was to a legendary Chinese sovereign called Fu Hsi c. 2900 BC. Ch'i lin is very special to the Chinese. According to them it is a creature of great power and wisdom. The Kirin in Japanese, qilin (in Chinese: 麒麟; pinyin: qílín) is a mythical hooved chimerical creature known in Chinese and other East-Asian

cultures, said to appear with the imminent arrival or passing of a sage or illustrious ruler. It is a good omen thought to occasion prosperity or serenity (Hoiberg, 2011). The Unicorn dance in Japan is highly popular in the Mid-Autumn Festival where the Unicorn has the role of the Lord of Rain. (Chevalier & Gheerbrant, 1997)

Reference to the Unicorns of India can also be found in Greek and Persian literature. In fact, the story of the Unicorn in western world came from India through the writing of Greek authors who heard the story either in Persia or in India.

In 416 BC, the physician Ctesias in his book "Indika" wrote,

"There are in India certain wild asses which are as large as horses, and larger. Their bodies are white; their heads are dark red, and their eyes dark blue. They have a horn on the forehead which is about eighteen inches in length. The dust filed from this horn is administered in a potion as a protection against deadly drugs."

The great philosopher Aristotle 384-22 B.C. also talks about the Unicorn,

"We have never seen an animal with a solid hoof and two horns, and there are only a few that have a solid hoof and one horn, as the Indian Ass and the Oryx."

The "Indian Ass" is none other than Ctesias' Unicorn. Ctesias wrote about people grinding its horn down to mix into a restorative elixir.

The Unicorn is even mentioned in the King James Version of the Bible nine times.

"God brought them out of Egypt; he hath as it were the strength of an Unicorn" &

"Save me from the lion's mouth; for thou hast heard me from the horns of Unicorns"

The above two lines among the Unicorn-themed lines in this version of the Bible. Later translations of the Bible from Hebrew also mention Unicorn as Unicornis. The Unicorn later both came to represent Christ, and also represent purity and chastity.

There are more scholarly works on accounts of Unicorn which suggest us that the Unicorn as an icon had travelled to various cultures and civilizations from India.

3.4. Evolution of the Unicorn Icon

The Unicorn not only finds a place in scholarly books and text but it has evolved into various other forms like mosaic paintings, sculptures, and coins.

The earliest Unicorn figure discovered in Iran dates to the proto-Iranian culture of Amlash (9th-8th century B.C.). This consists of a small bronze statue representing a goat with a frontal horn. The last description of the Unicorn in India can be found on several silver coins dating back to 3rd and 4th century BC bearing a Unicorn and a sacred tree incised on the reverse side.



Figure 5: Unicorn Church of San Saba, Rome. (Tagliatesta, 2007)



Figure 6: Unicorn and friar into rota. Otranto Cathedral, Lecce. (Tagliatesta, 2007)



Figure 7: Scottish coins (1484-1525 CE.) (copyright : British museum)



Figure 8: Unicorns into rotas, Decorative frieze of the Parma Baptistery. (Tagliatesta, 2007)

Table 1: Places where Unicorn has been used as an icon. (Tagliatesta, 2007)

Sl. No.	Places	Category Name	Period
1.	Harappa, Pakistan	Seals	2300-1750 BCE
2.	Iran	Bronze Statue	Proro-Iranian culture of Amlash 9th-8th BCE
3.	Chaubara, India	Relief on pilaster	1st BCE – 1st CE
4.	Govindnagar, India	Relief on pilaster	1st BCE. – 1st CE
5.	Bhutechwar, India	Relief on pilaster	1st BCE – 1st CE
6.	Haurte in Apames Syria	Mosaic (Ancient baptistery)	Late 4th CE. or early 5th CE
7.	Buyu Sarai (Constantinople), Istanbul	Mosaic	Mid 4th CE
8.	Cyrenaica	Mosaic fragment	Late 5th CE
9.	Tell el Awash (Syria)	Mosaic	6th CE
10.	Rome, Italy	Relief	8th CE
11.	Piacenza	Mosaic	1107 CE
12.	Rossano Calabro	Mosaic	Mid 12th CE.
13.	Parma	Frieze	12th CE
14.	Ravenna	Mosaic	1213 CE
15.	Aosta	Mosaic	1st half of 13th CE
16.	Southern Netherlands	Tapestries	1495-1505 CE

From the Church of San Saba in Rome comes a stone relief (fig 5) dating to the 8th century on which a Unicorn has been sculpted. The animal is placed inside a lozenge motif frame. The animal's curious muzzle resembles that of a bird while the body is that of a horse. (Tagliatesta, 2007) The floor mosaic in Otranto Cathedral (fig 6) was made, as may be inferred from an inscription, between 1163 CE and 1166 CE by friar Pantaleone. The 8th rota, from the top to the bottom, on the left of the altar, depicts the Unicorn and the friar.

The Unicorn was a gold coin (fig 7) that formed part of Scottish coinage between 1484 CE and 1525 CE



4. Conclusion

4.1. Major findings

With visual and textual evidences it can be concluded that the Unicorn that we see around the world has its origin in India. And the earliest known Unicorn figure that can be found is from the Indus Valley seals which later gets mentions in Mahabharata. The Rig Veda and Atharveda too talks about the Unicorn which could mean either that the Unicorns existed during the Vedic times or the Legend of the Unicorn got carried forward in the Indus Valley civilization. If this hypothesis is true then it can also be concluded that the Indus Valley Civilization was a form of Vedic civilization. The Unicorn over time has become more of a symbol of purity and divinity than an icon or an animal as in the Vedas. In Christianity it's the symbol of Virgin Mary and in China and Japan its presence is perceived as good omen.

4.2. Further research

The most important questions that arises is although Unicorn as a symbol and Icon have been a part of many cultures and civilization and traces its origin in India, why is it that its completely lost from the iconography of India? Why a symbol a figure so important is completely lost from India and its presence Indian texts subdued.

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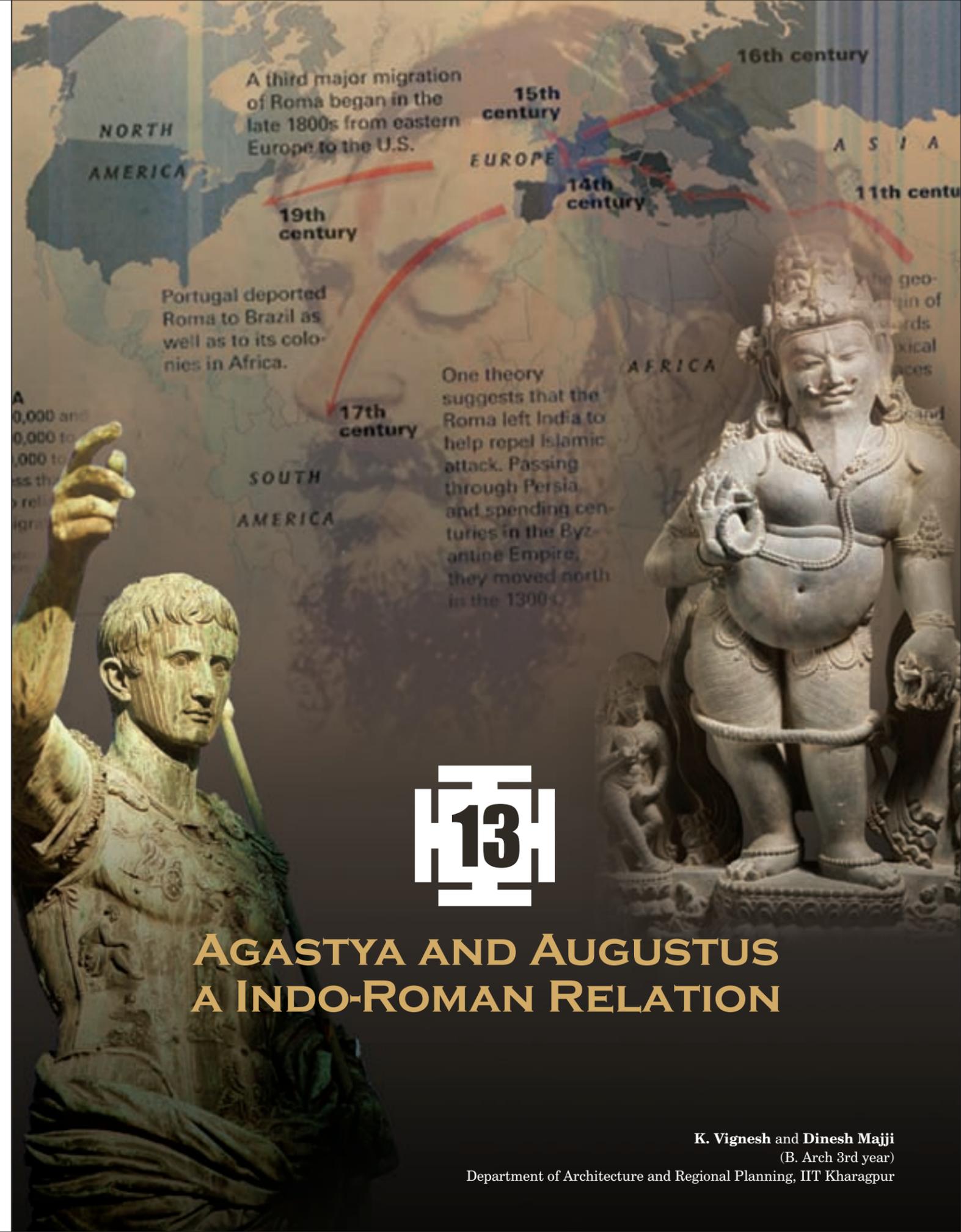
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AGASTYA AND AUGUSTUS A INDO-ROMAN RELATION

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THEME OF THE PAPER



The whole of the Asian civilization was first evolved on the plains near large rivers and on fertile soils—on the banks of the Ganga, the Yangtse-Kiang, and the Euphrates. The original foundation of all these civilisations is agriculture, and in all of them the Daivi nature predominates. Most of the European civilization, on the other hand, originated either in hilly countries or on the sea coasts—piracy and robbery form the basis of this civilisation; there the Asuri nature is preponderant.

So far as can be inferred in modern times, Central Asia and the deserts of Arabia seem to have been the home of the Asuras. Issuing from their fastnesses, these shepherds and hunters, the descendants of the Asuras, being united in hordes after hordes, chased the civilized Devas and scattered them all over the world.

Of course there was a primitive race of aborigines in the continent of Europe. They lived in mountain-caves, and the more intelligent among them erected platforms by planting sticks in the comparatively shallow parts of the water and built houses thereon. They used arrows, spearheads, knives, and axes, all made of flint, and managed every kind of work with them.

Gradually the current of the Asian races began to break forth upon Europe, and as its effects, some parts became comparatively civilised; the language of a certain people in Russia resembles the languages of Southern India.

But for the most part these barbarians remained as barbarous as ever, till a civilised race from Asia Minor conquered the adjacent parts of Europe and founded a high order of new civilization: to us they are known as Yavanas, to the Europeans as Greeks.



Swami Vivekananda
Progress of Civilization, The East and the West

Agastya and Augustus a Indo-Roman Relation

K. Vingesh and Dinesh Majji

Abstract

The Indians from ancient time have maintained a good relation with other nations via trade, cultural exchange, literature and heritage. History has evidenced many such relationships which blossomed through ages making India a country rich of culture, knowledge and diversity. Here we take one such example of relation which existed dating from Agastya the great sage of ancient India through Augustus the Roman emperor and existing till date via maritime trade of materialistic and non-materialistic things. The key is understanding of the name Agastya which have same travelled through ages to Rome before Augustus and spreading his knowledge throughout the world. The relation is widely studied on the basis of trade, archaeological, iconographical evidences and geographical understanding of these two great persons through history. In addition, the immense contribution to human kind by sage Agastya in literature, arts, music and medicine is studied in the process.

Keywords: Agastya, Augustus, Indo-Roman Trade, Cultural Exchange, Etruscans

1. Introduction

The Indo-Roman relation through ages have been studied on the basis of trade, cultural exchange and geographical understanding of their voyages and tracking them through history.

Agastya the great Indian sage and his contribution to human kind through his lifetime via literature, music, martial arts, medicine and astrology, his long voyage which started from the mystical city of Dwarka crossing the Vindhyas ranges and further moving to southeast India and later to southeast Asia as a part of his voyage and his contribution to world is deeply discussed. Then we explore about Augustus, the Roman emperor and about the maritime trade which existed between India and Roman. Based on these fields of trade, language and geographical understanding, the Indo-Roman relation is studied and the possible cultural exchange between the two regions has been discussed.

The work focuses on the Understanding of Indo-roman relation based on these two legends. The aim of the research is to find

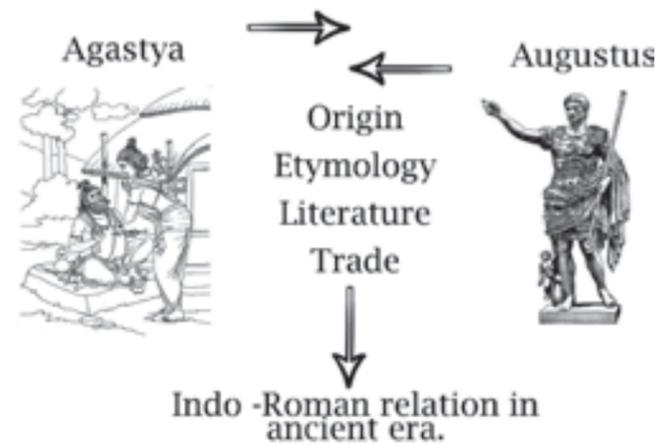
out the significant Indo-Roman relation based on trade, literature and etymology during their era with relevant evidences.

1.1. Components of Research

- Agastya's voyage within and outside India.
- Agastya's influence of literature, medicine and arts on other parts of the world.
- The Etymological relation of Agastya and Augustus.
- Geographical understanding of the Indo-Roman relationship.
- Archaeological, Iconographical and geographical evidences of Indo-Roman relation.
- Trade as a key to Indo-Roman relation.

2. Study Approach

The Indo-Roman relations during the early ages is being studied on the basis of the literature works, trade and



etymology to understand the possible cultural exchanges and exchange of knowledge, language, literature between them .

3. Literature Review

3.1. Agastya (Agathiar) 600 bce (app. *)

The Sapdha rishi of ancient India a brief history.

- **Etymology** of the Agastya-
A-ga in Sanskrit means a mountain, and Asti means thrower.
- **Voyage to south** -a geographical understanding.
 - **Dwarka** - mention of Agastya in a mystical ancient city
 - Agathiar crossing the Vindhya ranges. And the emergence of river **Kaveri**.
 - Settlement of Agathiar in southern India - the **velir** clan.
 - Further movement towards east - Malay Peninsula (Meluha)..
 - Association of Agathiar and lord Murugan (son of Shiva).
 - Agastya in Ramayana and Mahabharatham.
- Fields of work-
 - **Tamil literature** - Agathiam the first Grammar for Tamil language.
 - **Nadi Astrology** - Palm leaf scripts of the past, present and future of a person written a thousand years before.
 - **Medicine** - Immense contribution towards the field of herbal medicine sciences.
 - **Martial arts** - Founder and patron saint of Silambam and Varmam.

1.1 Augustus -The great Roman emperor 63 BCE

Augustus a brief history.

- Etymology of name Augustus - Relating Augustus and Agasthiar by name.
- Etruscan civilization -pre Romans.
- Maritime trade with Indian subcontinent.
- Archaeological and iconographic reasoning of Indo-Roman relation
- Pandian embassy.

1.2. Relating Agastya and Augustus with Indo-Roman relation.

☉ Agastya - A Brief History



Agathiyar Muni is considered to be important ones from one of the nine celestial intellectuals who came to earth for enlightening humans. Sage Agathiyar was said to have been born about 4573 years prior to the commencement of Kali Yuga, in the early hours of Tuesday, 14th of February 7673 BC. In the Rig Veda, Agastyar is referred to as one of the seven great Rishis of the Vedic period. It was possible to find out details about sage Agathiyar during the literary research on the Siddha medical sciences in a Tamil manuscript written on palm leaves about 3,000 years ago. The text is titled '**Prapancha Kaandam**', It is attributed to Lord *Muruga*, which was narrated by Sage Agathiyar and recorded by Sage *Pulasthiya*. Sage Agathiyar on the command of Lord Murugan wrote first grammar of Tamil language named **Agathiam**.

- Agathiyar thirst for knowledge on philosophy, yoga, medicine, martial arts and astronomy was immense so he travelled all over Kashmir, Tibet, China, Nepal and Kailas in Manchuria in order to spread his ideas.
- He then travelled towards the south to **Cambodia and Malaya**. In Cambodia he established the very first of his many educational institutions for the propagation of philosophy and science.
- During Agathiyar's time **Kumari Kandam** occupied a vast area extending from the present day Sri Lanka to the



Antarctic. He met **Lord Murugan** in the form of **Sage Kandan** or Subramaniam at **Trikona Malay**, present day Trincomali. At the station called **Kadari Kama** or **Kadhigama**, Lord Murugan imparted spiritual knowledge to Agathiyar.

- In his meditation he could see into the future and saw impending calamities. As a result he moved to the North Pole considering it to be a safe place. Significant portions of Kumari Kandam submerged into the Indian Ocean due to a natural calamity. He located a mountain range in South India, which is the '**Pothigai Hills**' to be the safest place and free from any future catastrophes.
- On the beginning of Kali Yuga, meeting of Agathiyar with Lord Muruga took place. Other sages then started coming and revived the knowledge of the Vedas and instructed these sages to propagate this knowledge at the appropriate time for the human welfare.
- A conference of Siddha called *Sidhar Sabai* was held during the 53rd year, Sidharta Samvatsara, of Kali Yuga at foot of "**Pothigai Hills**". An institution known as *Sidhar Gnana Koodam* was inaugurated by Lord Murugan and was headed by Agathiyar.
- After having established these institutions Agathiyar started on an mission of propagating the knowledge gained by these siddhars in Tibet, Manchuria, *Egypt*, Palestine, **Rome**, America, Africa, **Malaya** and Arab world. After satisfactorily completing their mission of propagating the said teachings the sages went into 'Samadhi' merging themselves into the cosmos by choosing a spot called *Dhashina Meru* in the Pothigai Hills.

☉ Etymology of Agastya

Etymologically the word Agastya has come from - *agam sthyayathi ithi agastyah*. **One who stays in the mountain**. A-ga in Sanskrit means a mountain, and Asti means thrower.

Agastya was born in a water jar as a fish of great lustre, whence he was called *Kalasisuta*, *Kumbhasambhava*, and *Ghatodbhava*. From his parentage he was called *Maitravaruni* and *Aurvasiya*; and as he was very small when he was born, not more than a span in length, he was called *Mina*.

His name, Agastya, is derived by a forced etymology from a fable, which represents him as having commanded the Vindhya mountains to prostrate themselves before him, through which they lost their primeval altitude, perhaps, the fable has been invented to account for his name. This miracle has obtained for him the epithet *Vindhyakuta*; and he acquired another name, *Pitabdhi*, or *Samudrachuluka*, 'Ocean drinker', from another fable, according to which he drank up the ocean because it had offended him, and because he wished to help the gods in their wars with the *Daityas* when the latter had hidden themselves in the waters.

☉ AGASTHIA'S VOYAGE TO SOUTH - a geographical understanding

Agathiar crossing the vindhya ranges and the emergence of river **Kaveri**

Among the various legends associated with him is that of the Vindhya Mountains. According to a story in the Shri Rama-Charitra-Manasa, at one time, Mount Vindhyachal was continually growing in size. On their way, when the Vindhya saw Sage Agastya, he bowed with respect and reverence, upon which Sage Agastya, jokingly asked if he would stay bowed and subdued with respect until the sage returned. The Vindhya promised to not grow until the sage return from the South. After passing through the mountain, sage Agastya told his wife that they would never again cross over to the North side of mount Vindhyas.

RIVER KAVERI - When Agastya came to south he carried Ganga water in his kamandalam. Lord Ganesha took the form of a crow and sat on Agasthiar's kamandalam and toppled it. Agasthiar lifted his hands to shoo off the crow. River Cauvery, took it as a signal for her and began to flow.

Geographically, Agastyar's exodus to southern India divides itself into **three distinct stages**.

The earliest finds him lodged in the Agastyasrama, a few miles north of Nasik, the ancient Panchavati, on the northern borders of the Dandakaranya Forest. His marriage to Lopamudrai, the daughter of the Vidarbha King, and Rama's first interview with him take place here. He also narrated the story of the death of Vatapi in a manner which differs from that of the Mahabharata, though the deviations are of no significance. What is remarkable is the idea that the "Dandakaranya" region was first made fit for human occupation by the success of Agastyar against the asuras (demons). Agastyar's conflict with the asuras and rakshasas (hostile powers of the vital plane) is also hinted at elsewhere in the Ramayana.

The **second stage** of Agastyar's pilgrimage to the South begins with his residence at *Malakuta*, three miles east of *Badami* (the ancient *vatapipura*) otherwise known as *Dakshinakasi*, in the Kaladgi District of the Mumbai Presidency. This now residences is about three hundred miles south from his Nasik ashram. During this second stage he ate Vatapi and destroyed Ilvala (also known as Vilvala) as described above.

During the **third stage**, there are many stories about him at Pothigai, known also as the **Pothigai Hills**, one of the southernmost promontories of the Western Ghats, in the Pandya country. During his residence in the very centre of Tamil Nadu, he is credited with having founded the first Tamil Academy or Sangam, and having presided over it, besides writing an extensive Tamil Grammar and many other works on medicine, pharmacy, alchemy, botany, yoga, moral and natural philosophy, the education of youth, religious rites and ceremonies, exorcism, prayer, mysticism and even magic.



According to tradition, in two more stages of migration, he crosses the seas to the **Indonesian Islands**. Here he is said to have visited *Barhinadvipa* (Borneo), *Kusa Dvipa*, and *Varaha Dvipa*. Here too he appears to have taken up his abode in the **Maha Malaya Hill** in Malaya Dvipa (now known as Malaysia). In the fifth stage he crosses over to the mainland and enters Siam (Thailand) and Cambodia.

❖ Agastya in Ramayana and Mahabharata as a evidence to his voyage

The **Mahabharata** relates a legend respecting the creation of his wife. It says that Agastya saw his ancestors suspended by their heels in a pit, and was told by them that they could be rescued only by his begetting a son. Thereupon he formed a girl out of the most graceful parts of different animals and passed her secretly into the palace of the king of Vidarbha. There the child grew up as a daughter of the king, and was demanded in marriage by Agastya. Much against his wills the king was constrained to consent, and she became the wife of the sage. She was named **Lopamudra**, because the animals had been subjected to loss (*lopa*) by her engrossing their distinctive beauties, as the eyes of the deer, etc. She was also called *Kausitaki* and *Varaprada*.

Mahabharatham depicts the pact with the Vindya mountains and the drinking of the waters of the ocean have been generally accepted as **allegorical representations of the spread of Aryan culture first to India south of the Vindhya, and then across the seas to the islands of the archipelago and to Indo-China.**

It is in the **Ramayana** that Agastya makes the most distinguished figure. He dwelt in a hermitage on Mount *Kunjara*, situated in a most beautiful country to the south of the Vindhya mountains. His power is illustrated by eating up a Rakshasas named *Vatapi* who assumed the form of a ram, and as destroying by a flash of his eye the Rakshasas brother, *Ivala*, who attempted to avenge him.

Rama in his exile wandered to the hermitage of Agastya with Sita and Lakshmana. The sage received him with the greatest kindness, and became his friend, adviser, and protector. He gave him the bow of Vishnu; and when Rama was restored to his kingdom, the sage accompanied him to Ayodhya.

❖ AGASTYA - Velir clan leader

Agastya is described in Tamil script '*Purananuru*' as the leader of the velir clan who moved from the ancient city *Dwarka* to southern states crossing Vindhya and settled in south clearing forest.

Who established a large kingdom in the south which led to major kingdoms in south such as *pandias, cholas and cheras*. Later the *Pandians* had a good relation with Augustus and maintained a well organised trade system between them.

❖ AUGUSTUS - A Brief History



Historians date the start of Octavian's monarchy to either 31 B.C. (the victory at Actium) or 27 B.C., when he was granted the name Augustus. In that four-year span, Octavian secured his rule on multiple fronts. Cleopatra's seized treasure allowed him to pay his soldiers, securing their loyalty. To mollify Rome's Senate and ruling classes, he passed laws harkening back - at least on the surface - of the traditions of the Roman Republic. The month *August* is named after him to honour him.

Augustus means "great" or "venerable", derived from Latin *augere* "to increase".

During his 40-year reign, Augustus nearly doubled the size of the empire, adding territories in Europe and Asia Minor and securing alliances that gave him effective rule from Britain to India. He spent much of his time outside of Rome, consolidating power in the provinces and instituting a system of censuses and taxation that integrated the Empire's furthest reaches. He expanded the Roman network of roads, founded the Praetorian Guard and the Roman postal service and remade Rome with both grand (a new forum).

❖ Indo-Roman Trade

The use of monsoon winds, which enabled a voyage safer than a long and dangerous coastal voyage, helped enhance trade between India and Rome. Roman trade stopped in Southern India, establishing trading settlements which remained long after the fall of the Roman Empire and Rome's loss of the Red Sea ports, which had previously been used to secure trade with India by the Greco-Roman world since the time of the Ptolemaic dynasty.

Rome traded with India via Persia and Anatolia. Overland caravans were mainly used for trading spices and incense. Another route for trading via the Red Sea was later used after Augustus conquered Egypt during the period 30BCE and around the initial period of the CE - Common Era. It is in the records that a lot of **gold and silver** was traded for silk by politicians from Rome to pamper their wives.



Trade through Red Sea (sea routes before Augustus reign)

❖ Development of Trading System With India

The southern region of India besides Sri Lanka was most visited by traders from Greece and Rome. Trade was secured in a number of states in **Tamil Nadu including Chera, Pandyan and Chola dynasties**. *Trading settlements were established in the ancient Tamil regions by the Roman-Greco world from the time of the Ptolemaic dynasty*. This was before the beginning of the CE and trade continued to remain till the time the Western Roman Empire fell. The Ptolemaic and the Seleucid dynasties controlled networks of trade to India before Roman Egypt was established. A developed Indian trade network which was under the *Parthian Empire* influence was controlled by the Seleucid dynasty. The northern and western end of other routes for trading to India and Southern Arabia was controlled by the Greek Ptolemaic dynasty. A strong trading system over the sea was established by India with other countries much before the Roman expansion. Ports in India increased till the **Red Sea** was opened by the Greeks and Romans. They had the all the geographical knowledge related to the seasonal monsoons prevalent in India. During the Common Eras' first two centuries, the trade between **Rome and Western India** increased. Trade expanded due to the establishment of comparative peace during the time of Augustus in the Roman Empire. **Ancient literature and**

artefacts indicate with evidence that the commercial relationship had been quite significant between Rome and Western India.

In foreign literature too there has been frequent mention of India's western coast known for its rocky sea beds, turbulent waves and severe currents in the sea.

❖ Dwarka an Important Place for Trade during that time

Near the Gulf of Kachchh, at an island, **Dwarka**, some of the **stone anchors** have been observed. This discovery is a good indicator about the Indo-Roman commerce and trade that took place during the early years of the Common Era. Though Dwarka Island did not have favourable conditions, it indicates that it was important place for trading.

❖ What Things Did Rome and India Trade

It has been seen that right from **Latin literature, serpents, tigers, elephants and rhinoceros from India** were imported. A lot of **sugar, herbs, sesame oil, spices, lyceum and pepper** were imported by Rome. **Pearls from India** were a favourite amongst women in Rome. For whitening cloth, indigo was imported. For making furniture, ebony wood



was also imported by the Roman Empire. To make *medicine*, different kinds of **fruits including peach and Indian limes** were also exported to **Rome by India**. During this time Roman gold in large amount was received by Western India, in Indo-Roman trade.



Roman piece of pottery from Arezzo in Italy, found at Virampatnam, Arikamedu (1st century CE).



An Indian silver coin (c. 1st century BCE) depicting the local ruler wearing Roman-type helmet with bristles



South Asian ship on lead coin of Vasisthiputra Sri Pulamavi, 1st-2nd century CE.

☪ Coins - A Source

Number of Roman coins has also been discovered in explorations made in the recent times. Ship building development and close relations in trade have been well depicted on the Roman coins. The coins also indicate that during the first and second century, sea trade between India and Rome was quite stable. During Augustus's time, land routes were mainly used so that the Indian embassies could reach Rome.

☪ The Ports

Myos Hormos, Berenice and Arsinoe were the main three ports that were involved with eastern trade. One of the earliest centres for trading was Arsinoe. The present day Suez is basically Arsinoe.

In India, the ports of *Barbaricum* (modern Karachi), *Barygaza*, *Muziris* and *Arikamedu* on the southern tip of India acted as the main centres of that trade. The *Periplus Maris Erythraei* describes Greco-Roman merchants selling in Barbaricum "thin clothing, figured linens, topaz, coral, storax, frankincense, vessels of glass, silver and gold plate, and a little wine" in exchange for "costus, bdellium, lycium, nard, turquoise, lapis lazuli, Seric skins, cotton cloth, silk yarn, and indigo". In Barygaza, they would buy wheat, rice, sesame oil, cotton and cloth.

☪ Cultural Exchange

The Rome-India trade also saw several cultural exchanges which had lasting effect for both the civilizations and others involved in the trade.

- The Ethiopian kingdom of Aksum engaged in the Indian Ocean trade network, receiving an influence by Roman culture and Indian architecture.
- **Traces of Indian influences appear in Roman works of silver and ivory**, or in Egyptian cotton and silk fabrics used for sale in Europe.
- The Indian presence in Alexandria may have influenced the culture but scant records remain about the manner of that influence.

Christian and Jewish settlers from the Rome continued to live in India long after the decline in bilateral trade. Large hoards of Roman coins have been found throughout India, and especially in the busy maritime trading centres of the south. **The South Indian kings reissued Roman coinage in their own name after defacing the coins to signify their sovereignty. The Tamil Sangam literature of India recorded mention of the traders.** One such mention reads: "The beautifully built ships of the *Yavanas* came with gold and returned with pepper, and *Muziris* resounded with the noise.



4. Etruscans - Pre Romans and who were they?



Etruscan painting depicting similar images to Ramayana and clothes (saree) which were very much Indian.

Etruscans were the people who occupied Etruria, Italy between 8th century BC and 2nd century BC. Etruria is the modern day Tuscany and part of Umbrian Italy. They ruled Rome from 616-509 BC. Roman civilization was greatly influenced by Etruscan culture. Scholars are of the opinion that the Etruscans were a seafaring people from Asia Minor. As early as 1200 B.C. they were living in Italy covering an area equivalent to modern Tuscany.

Etruscan Mythology mentions about a cultural hero who gave them their religion who was called as "*Tages*" and have many parallels with the story of the Indian sage Agastya. Another interesting thing being similarity between **Ramayana** and story of **Romulus and Remus** gods of the Etruscan civilization.

Relation between Tamil (Vedic civilization) and Etruscan civilization

- **Origin of Etruscans:** They may be Tamils (*Termilai*) and descendants of *Pulasthiya Rishi* (*Pelagians / Philistines*)
- **Birds for predicting future:** Like Tamils, they also used birds for predicting future. Cremation and burial of ash in Urns: This is a Hindu custom followed from Vedic days.
- **Musical instrument Lyre/ Yaz, Kombu:** Etruscans used musical instruments which looked like Indian lyre (Horn, also known as *Kombu Vadhyam* in Tamil).



- **Swastika symbol:** Swastika symbol, used by the Indians were used by Etruscans in their jewels and in many seals and coins.
- **Language:** We come across words of Sanskrit and Tamil origin in The Etruscans language. Etruscans wrote from right to left like we have it in Indus seals and other Semitic inscriptions. Etruscans got their alphabet from the Greeks and modified it to suit their sounds. Romans borrowed it from the Etruscans.

5. Relating Agastya and Augustus with Indo-Roman relation



6. Conclusion

The Significant outcomes of the research can be dealt with two ideologies.

- The possible movement of Agastya's disciples moving all over the world in order to spread the philosophy and knowledge of Agastya throughout the world. During such



a voyage the Knowledge of sage Agastya could have spread on the Roman lands which is reflected in naming many Roman cities in his name.

- The other interpretation would be that the fame of Agastya could have been carried to Rome through the south-Indian kings who had a good trade relation with Romans during that time. Thus, a common conclusion would be that the name Agastya has influenced Rome to its prehistoric times even before Augustus's reign. The cultural exchange between the two nations is very evident from the etymology of the name Augustus and Agastya and also the maritime trade which flourished between India and Rome through ages. The cultural exchanges may include linguistic, moral and philosophical ideas which could have strengthened the relation between the two nation for ages.

7. Further research

The Indirect works which could be extended are :

- The existence of *Kumari Kandam* which may have existed and could have been a prime place of Agastya's stay in south and could also establish possible Indo-Roman relation even by land routes.
- Agastya's disciples travelled throughout the world in the west till south America and till the Malay peninsula in south east establishing institutes and spreading the knowledge of Agastya in fields of philosophy, medicine, literature and arts.
- The similarity between Tamil and Greek text could be explored in order to find out the relation between Indo-Greco relations during the ancient era.

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MELUHA – MALAY: PERSIAN GULF LINKAGES WITH SOUTH-EAST ASIA

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THEME OF THE PAPER



We are glad also that he boldly pushes forward the Accado-Sumerian racial identity of the ancient Tamilians. And this makes us proud of the blood of the great civilisation which flowered before all others — compared to whose antiquity the Aryans and Semites are babies.

We would suggest, also, that the land of Punt of the Egyptians was not only Malabar, but that the Egyptians as a race bodily migrated from Malabar (Malay coast) across the ocean and entered the delta along the course of the Nile from north to south, to which Punt they have been always fondly looking back as the home of the blessed.



Swami Vivekananda
Aryans and Tamils

Meluha – Malay: Persian Gulf linkages with South-East Asia

Nishit Penna Peruru, Sachin Prakash and Dikkala Vijaya Raghava

Abstract

Today's civilizations owe an immense debt to the powerful empires and mighty cities of antiquity. Their inventions, techniques and concepts enabled the advancement of humankind and laid the foundation for life in the modern world. But, unfortunately some of the civilizations had vanished and are forgotten by mankind, till they are rediscovered. This introductory paper provides information about Meluha and Malay Civilizations along with their Persian Gulf linkages with South-East Asia. In this we discuss about trade, artifacts, music, religion, script, migration and town planning of both the Civilizations.

Keywords: Meluha; Malay; Malabar; Malaysia

1. Introduction

1.1. Meluha

Almost all scholars suggest that Meluha was the Sumerian name for the Indus Valley Civilization. Finnish scholars Asko and Simo Parpola identify Meluha as a variant of Me-lah-ha from earlier Sumerian documents with Dravidian mel akam meaning "high abode" or "high country". Many items of trade such as wood, minerals, and gemstones were indeed extracted from the hilly regions near the Indus settlements. They further claim that Meluha is the origin of the Sanskrit mleccha, meaning "barbarian, foreigner"^[1].

Meluha actually means Port. Meluhha or Melukhka is the Sumerian name of a prominent trading partner of Sumer during the Middle Bronze Age.^[1]

1.2. Malay

The Malay race (consists into two groupings – Proto Malays and Malay Polynesians, or Melayu Darat and Melayu Laut), likely originated from the Yunnan province or surroundings.

The early Malay (or Champa) civilizations are: Lin Yi located in what is South Vietnam and Cambodia today, the dates of the civilization is around 100AD until 1500AD during its peak, and finally ended with the last King of Champa who died in 1823AD. The remnant of this civilization is of course, the Great Angkor Wat.

The second great civilization of Malays is Sri Vijaya, located in Palembang (South Sumatera) – which, the empire was established after waves of migration from the Champa continent by sea using the monsoon winds to South Sumatra. After the fall of Sri Vijaya, which was defeated by Majapahit of Java, Parameswara.^[2]

2. Trade in Meluha and Malay Civilization

The Indus civilization's economy appears to have depended significantly on trade, which was facilitated by major advances in transport technology. This one may have been the first civilization to use wheeled transport^[3]. These advances may



have included bullock carts that are identical to those seen throughout South Asia today, as well as boats. An extensive canal network, used for irrigation, has however also been discovered by Henri-Paul Francfort.

During 4300–3200 BCE of the chalcolithic period (copper age), the Indus Valley Civilization area shows ceramic similarities with southern Turkmenistan and northern Iran which suggest considerable mobility and trade. During the Early Harappan

period (about 3200–2600 BCE), similarities in pottery, seals, figurines, ornaments, etc. document intensive caravan trade with Central Asia and the Iranian plateau^[4]. Judging from the dispersal of Indus civilization artefacts, the trade networks, economically, integrated a huge area, including portions of Afghanistan, the coastal regions of Persia, northern and western India, and Mesopotamia, Crete and Egypt.



Fig 2.1: Locaton of Meluha



Fig 2.2: Malay Civilization's Trade route



Fig 3.1: Glazed Porcelain Elephant Image



Fig 3.2: Ban Chiang Earth Porcelain



Fig 3.3: The Guanyin Dehua Image



Fig 3.4: Urns or Water Barrel

There was an extensive maritime trade network operating between the Harappan and Mesopotamian civilizations as early as the middle Harappan Phase.

Several coastal settlements like Sotkagen-dor (astride Dasht River, north of Jiwani), Sokhta Koh (astride Shadi River, north of Pasni), and Balakot (near Sonmiani) in Pakistan along with Lothal in western India, testify to their role as Harappan trading outposts. Shallow harbours located at the estuaries of rivers opening into the sea allowed brisk maritime trade with Mesopotamian cities.

Malayans traded with India from the 3rd century AD. After that contact with India was common. Malayan laws and writing show Indian influence. Malay was termed as **Suvaranabhumi**, as there was trade of Gold between these two great civilizations. Malay had trade with the Chinese civilization.^[5]

3. Artifacts

Various sculptures, seals, pottery, gold jewelry, and anatomically detailed figurines in terracotta, bronze, and steatite have been found at excavation sites of Indus Valley Civilization.

A number of gold, terracotta and stone figurines of girls in dancing poses reveal the presence of some dance form. Also, these terracotta figurines included cows, bears, monkeys, and dogs. The animal depicted on a majority of seals at sites of the mature period has not been clearly identified. Part bull, part zebra, with a majestic horn, it has been a source of speculation.

Many crafts "such as shell working, ceramics, and agate and glazed steatite bead making" were used in the making of necklaces, bangles, and other ornaments from all phases of

Harappan sites and some of these crafts are still practiced in the subcontinent today.^[6] Terracotta female figurines were found (ca. 2800–2600 BCE) which had red colour applied to the "manga" (line of partition of the hair).^[7]

A harp-like instrument depicted on an Indus seal and two shell objects found at Lothal indicate the use of stringed musical instruments. The Harappans also made various toys and games; among them cubical dice (with one to six holes on the faces), which were found in sites like Mohenjo-Daro.

Malay people are having the knowledge of producing bronze and copper using the cire-perdue technique has contributed tremendously to the art of producing other metal paraphernalia.

An image of the village. The process of creating it is a complicated one where each animal shape is created individually the elephant and the herdsman was created as talisman and then layered with brown-coloured slip.

The porcelain art of Thailand through rapid internal development and external influences on the Local porcelain art started between 3,000 BCE and 4,000 BCE.^[8]

In some places in Sabah, barrels of this kind are used as an aid to pray for rain.

4. Music

Little is known of the musical culture of the Indus Valley civilization. Some musical instruments, such as the arched or bow-shaped harp, wooden harp, flute, Tabla and several varieties of drums, have been identified from the small terracotta figures and from the pictographs on the seals that were probably used by merchants. Further, the famous bronze



Fig 4.1: Canang



Fig 4.2: Bedug



Fig 4.3: Tetawak



statuette of a dancing girl, probably representing a class of temple dancers, clearly indicates the presence of music.

In the Malay society, Music based on the definition, is classified into vocals, instruments and the combination between Vocal and Dance. The musical Instrument created in the Malay Society are : canang (small gong), tetawak (the smallest drum), nobat (Big drum), nafiri (big trumpet), Komaoang, gambus (stinged musical instrument with six string), Marwas (type of small Drum), bedug (large drum) used in mosque to inform the Muslim about prayer time), gong, violin, accordion, drum, Tetawak tambourine, clarinet, viola, flute etc.^[9]

5. Town Planning

The most striking feature of the Harappan cities is their town planning. The Harappan City was mainly divided into two parts, the upper town (also called the Citadel) and the lower town. Some of the important features of the Harappan town Planning is given below^[10] **Granaries:** The granary was the largest structure in Mohenjodaro. In Harappa there were about six granaries or storehouses and these were used for storing grain.



Fig 5.1: Great Bath

Great Bath: This was another important structure in Mohenjodaro. The floor of the bath had five layers. It was so watertight that even today it holds water. There were changing rooms. People probably used it during festivals and religious ceremonies.

Town Hall: A palace-like building that looked like an assembly hall for the city government or for people to meet.

Lower Town: This was the residential area where the common people used to live.



Fig 5.2: Drianage System

Streets: The roads and streets intersected at right angles, with covered drains along the road.

Drainage System: In ancient times, the drainage system of the Harappan cities was best known to the world. The brickwork prevented dirty water from leaking and wooden screens stopped the solid wastes from being washed away with water. Drains were built on either side of the roads and they were covered with Stones which could be removed in order to clean them when required.

Houses: Houses were built on either side of the roads and streets. The houses varied in size, some had two stories. The houses were made of burnt bricks and most of them had a central courtyard, a bathing area, a well and a kitchen.^[10]

6. Migration

The Harappan Civilization was the largest civilization in the world during its reign from 3000 to 1500 BC. Evidence of religious practices in this area dates back approximately to 5500 BCE. Farming settlements began around 4000 BCE and around 3000 BCE there appeared the first signs of urbanization. By 2600 BCE, dozens of towns and cities had been established, and between 2500 and 2000 BCE the Indus Valley Civilization was at its peak. For reasons yet undetermined, this civilization began to deteriorate around 2000 BC, with little of it remaining by 1500 BC. Around 1500 BCE, a large group of nomadic cattle-herders, the Aryans, migrated into the region from central Asia. The Aryans crossed the Hindu Kush Mountains and came in contact with the Indus Valley Civilization. This was a large migration and used to be seen as an invasion, which was thought to be the reason for the collapse of the Indus Valley Civilization. But this hypothesis is not unanimously accepted today.^[11]



It is believed that the first group of people of Malay are known as a clump of Proto Malay race (Proto-Malay race). They moved to Southeast Asia in New Stone age (2500 BC). This breed is the original population in Peninsular Malaysia, Sarawak Dayak, Batak and Komering in Sumatra. The second collection is known as clump of Deutero Malay Race. They moved to Southeast Asia in the Age of Metal about 1500 BC. Descendants of these are more intelligent and advanced than Proto Malay race, mainly in the field of astronomy, shipping and farming. They are more in number than Proto Malay race. They inhabit the coastal and valley areas in Southeast Asia. Both groups are known as Austronesia group.^[12]

7. Religion in Meluha and Malay

7.1. Meluha

Initially Meluha people also followed the animism and paganism but they have received considerable attention, especially from the view of identifying precursors to deities and religious practices of Indian religions that later developed in the area. An early and influential work in the area that set the trend for Hindu interpretations of archaeological evidence from the Harappan sites^[13]. A Great Male God and a Mother Goddess; deification or veneration of animals and plants; symbolic representation of the phallus (linga) and vulva (yoni); and use of baths and water in religious practice. The existence of a cult of Mother Goddess worship based upon excavation of several female figurines, and thought that this was a precursor of the Hindu sect of Shaktism.^{[14][15]}

7.2. Malay

The main religion of the Malays is of some form of Animism or Paganism, Means worships the Nature. But prominence among them is the belief in what we called as "Adat" or customs. It was very easy for Malays to accept any new religions into their society, as these religions by belief do not possess any conflict with Animism. Because of this, Malays accepted Hinduism, when they came to Asia; and in the same manner accepted Islam. In fact the version of Hinduism or Islam that they embrace, is very much a mixed of religion and Adat.^[16]

8. Script and Language

8.1. Meluha

Actually the Meluha script is so complex that they have not been deciphered till date.

The Meluha script is corpus of symbols of which most inscriptions are extremely short. It is not clear if these symbols constitute a script used to record a language, and the subject of whether the Meluha symbols were a writing system is controversial.

→ The characters are largely pictorial but include many abstract signs. The inscriptions are thought to have been mostly written from right to left.

→ In the early 1970s, Iravatham Mahadevan published a corpus and concordance of Indus inscriptions listing 3,700 seals and 417 distinct signs in specific patterns. Some of the have argued that the Brahmi script has some continuity with the Indus system.

→ According to researches, these signs were made in many ways, including carving, chiselling, painting and embossing, and the objects themselves were also made of many different materials.^[17]

→ There is basically two hypothesis on script of Meluha

a) Dravidian Hypothesis:

The Russian scholar Yuri Knorozov surmised that the symbols represent a logo syllabic script and suggested, an underlying agglutinative Dravidian language as the most likely candidate for the underlying language.^[18]

b) Sanskritic Hypothesis:

Indian archaeologist Shikaripura Ranganatha Rao claimed to have deciphered the Indus script. His decipherment results in an "Sanskritic" reading, including the numerals *aeke, tra, chatas, panta, happta/sapta, dasa, dvadasa, sata* (1, 3, 4, 5, 7, 10, 12, 100)^[19]. He notes a number of striking similarities in shape and form between the late Harappan characters and the Phoenician letters.^[20]

8.2. Malay

Writing came to Insular Southeast Asia in the 8th century, brought by traders from the ancient Indian kingdom of Pallava. The Pallava script, a variant of the Grantha, was adopted by the local Javanese to write their language. While at first the script completely resembled Pallava, soon it evolved into a distinctive form called the Kawi script.

The Kawi script is a typical Brahmi-style syllabic alphabet where every letter represents a syllable rather than a simple sound. Three letters are used for the sounds /a/, /i/, and /u/, but only at the beginning of a word. The rest of the letters denote syllables, each with a starting consonant and the "inherent" vowel of /a/. By the 13th century, the form of the Kawi script has evolved into its direct descendent, Javanese. In fact, Kawi is sometimes called Old Javanese. But in addition, the Kawi script likely gave rise to many later scripts of Indonesia, Malaysia, and Philippines such as Rejang, Buginese, Makasarese, Tagalog, Mangyan, and Batak.

Hence the Kawi script can be considered the progenitor of writing in Insular Southeast Asia.

The earliest known inscriptions in Malay were found in southern Sumatra and on the island of Bangka and date from 683-6 AD. They were written in an Indian script during the time of the kingdom of Sri Vijaya.^[21]



Arabic alphabet for Malay (Jawi / جاوي)

ا	ب	ت	ث	ج	چ	ح	خ	د	ذ	ر	ز
آف	باء	تاء	ثاء	جيم	چاء	حاء	خاء	دال	ذال	راء	زاي
af	ba	ta	tha	ca	ca	ha	kha	dal	zal	ra	zal
[aʔ]	[b]	[t]	[ʔ]	[dʒ]	[tʃ]	[h]	[x/k]	[d]	[dʒ]	[r]	[z/ʒ]
س	ش	ص	ض	ط	ظ	ع	غ	غ	ف	ق	ق
سين	شين	صاد	ضاد	طاء	ظاء	عين	غين	غاء	فاء	قاف	قاف
sin	shin	sad	zad	ta	za	ain	ghain	nga	fa	qa	qa
[s]	[ʃ/s]	[s]	[z/ʒ]	[t]	[z]	[ʔ]	[v/r]	[ŋ]	[f]	[p]	[k]
ك	گ	ل	م	ن	و	و	ه	لا	ء	ي	ن
كاف	گاف	لام	ميم	نون	واو	واو	هاء	لام-آف	همزه	ياء	ياء
kaf	gaf	lam	mim	run	wau	wau	ha	lam-alif	hamzah	ya	ya
[k]	[g]	[l]	[m]	[n]	[w]	[w]	[h]	[la]	[ʔ]	[j]	[j]

Numerals

٠	١	٢	٣	٤	٥	٦	٧	٨	٩	١٠
kosong	satu	dus	tiga	empat	lima	enam	tujuh	lapan	sembilan	sepuluh
0	1	2	3	4	5	6	7	8	9	10

9. Conclusion

Meluha and Malay are two great civilizations. On time scale, Meluha Civilization originated first and then came The Malay Civilization which is indeed formed by the people from Malabar Coast. The Meluha Civilization is far more advanced and having great trade relations with other civilizations than Malay. There is not much information of Malay's town planning and its BCE script in which there further research and investigation should be done. The script of the Meluha Civilization is still to be deciphered.

10. Key Words

1. Sumerian name
2. Proto Malays
3. Malay Polynesians
4. Great Angkor Wat
5. Melayu Darat
6. Melayu Laut
7. Majapahit of Java
8. Parameswara
9. Henri-Paul Francfort
10. Sothagen-dor
11. Suvaranabhuumi
12. Irvatham Mahadevan
13. Dravidian hypothesis
14. Yuri Knorozov
15. Shikaripura Ranganatha Rao
16. Kawi script
17. kingdom of Sri Vijaya
18. animism and paganism
19. phallus (linga)
20. vulva (yoni)
21. Adat
22. Citadel
23. chalcolithic period
24. Sokhta Koh
25. Balakot
26. cire-perdue technique
27. canang, tetawak, nobat, nafiri, Komaoang, gambus, Marwas, bedug

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SHATKONA: RELATIONSHIP BETWEEN SRI CHAKRA AND STAR OF DAVID A STUDY OF FRACTALS, PATTERNS AND LIFE SCIENCES

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THEME OF THE PAPER



There was an inquisitiveness in the race to start with, which very soon developed into bold analysis, and though, in the first attempt, the work turned out might be like the attempts with shaky hands of the future master-sculptor, it very soon gave way to strict science, bold attempts, and startling results.

Its boldness made these men search every brick of their sacrificial altars; scan, cement, and pulverise every word of their scriptures; arrange, re-arrange, doubt, deny, or explain the ceremonies. It turned their gods inside out, and assigned only a secondary place to their omnipotent, omniscient, omnipresent Creator of the universe, their ancestral Father-in-heaven; or threw Him altogether overboard as useless, and started a world-religion without Him with even now the largest following of any religion.

It evolved the science of geometry from the arrangements of bricks to build various altars, and startled the world with astronomical knowledge that arose from the attempts accurately to time their worship and oblations.



Swami Vivekananda
Historical Evolution of India

Shatkona: Relationship between Sri Chakra and Star of David A Study of Fractals, Patterns and Life Sciences

E. M. Sooraj

Abstract

History has been a platform for debate for all those who study it, but to make it more definitive and concrete, researchers are trying to find evidences from the past to uncover these hidden truths and tap that ancient knowledge. One such field of research is the study of figures and shapes and by that, tracing its origins. These symbols date back decades, even before the time of great Egyptian civilization and because of that, it has got many interpretations regarding its meaning. Many of such symbols are even used as a tool employed in construction of religious structures such as temples, churches, mosques, synagogues etc. because of being considered as a sacred geometry. Geometric ratio's and shapes were of particular importance at that time. It needs deep understanding and extensive research to uncover the meanings and history attached to such icons as its true meaning might have faded with time or tampered with due to the many number or interpretations and assumptions made. This research primarily focuses on the study of two such icons i.e. The Star of David and Sri Chakra, their religious significance and geometrical interconnectedness.

Keywords: Chakra, Star of David, Sacred Geometry, Fractals, Kabbalah

1. Introduction

The study of such geometry first started when people started observing and carefully studying the patterns that can be observed in nature and also from the primitive knowledge they were exposed to. They tried to establish mathematical and spiritual principle between the geometry and nature, for example the growth of plants if observed constantly, it follows a fixed growth pattern and from this it was gathered later on it followed a fixed a logarithmic spiral as seen in Fig.1. Geometric figures and ratios can often be seen embedded in the design of

ancient Egyptian, Indian, Greek and Roman architecture. Most of the constructions during those times used to follow golden ratios and proportions. The spiritual communities of India and Himalayas also constructed many temples and fortifications with their design plans also following the patterns of such geometry known as the *mandalas* and *yantras*.

The origins of the *Sri chakra* can be traced back to Hindu Mythology in which its meaning according to Sanskrit is 'wheel'. The wheel here is symbolized as energies in space and time. When represented on human body, it forms wheel-like vortices which starts from the base and runs through the spinal

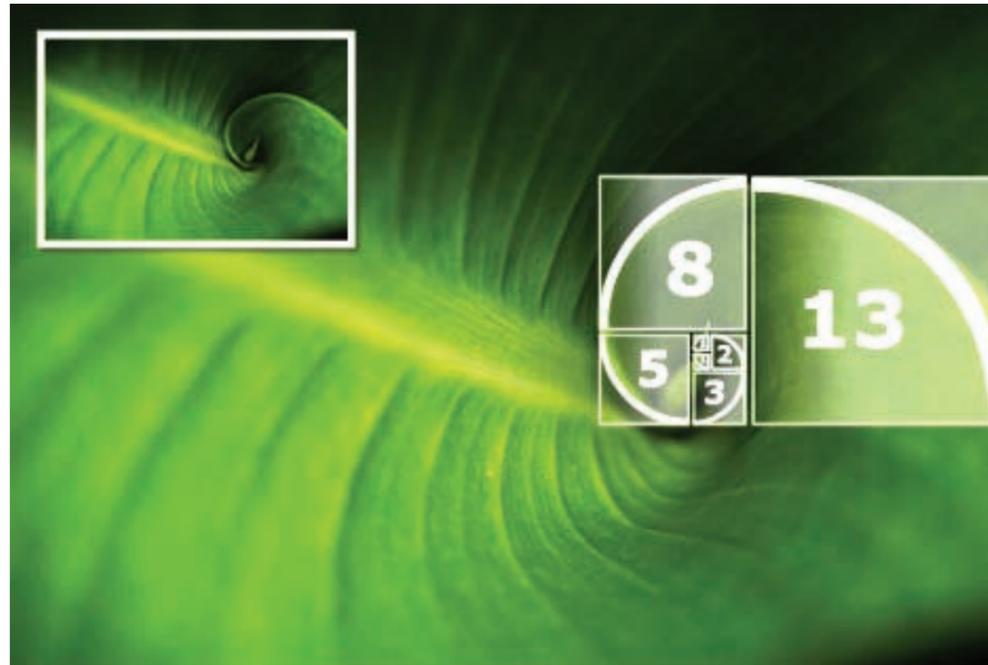


Figure 1: Growth of a leaf- spiral representation. (Steph, 2008)

cord and leading up to the brain where energy flow is represented as sinusoidal waves flowing up and down which again is interpreted as the 'caduceus' or 'kundalini', the medical symbol depicted as two serpents entwined with wings at top. (Linke, 2012)

It is also believed that there are lots of similarities between the tree of life mentioned in *kabbalah* and the *chakras* not

physically but the spiritual part of it, as that also represents the levels of consciousness in the human psyche and body both spiritually or materially by the seven levels of the tree (refer. Fig. 2). *Kabbalah* is known as a set of esoteric teachings which explains the relationship between the mortal and finite universe (God's creation) and has its origin as an integral part of Judaism. (Paulose, 2007)

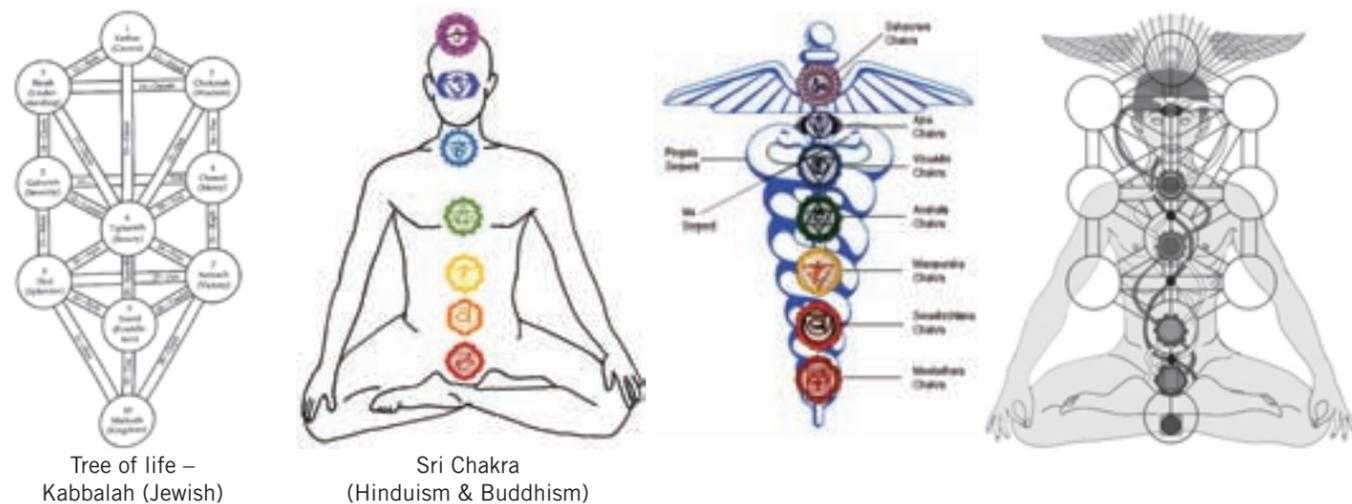


Figure 2: Sri Chakra - Tree of life inter-relationship

Source: reproduced by Author



Figure 3: The Anahata Chakra (Chakras.info, 2013)

The fourth *chakra* represented in the figure also known as the *Anahata chakra* (Fig. 3) is identified as an 'Hexagram' which is better known as 'The Star of David' or 'The Seal of Solomon'. To find the inter-relationship between these two will be the main objective of this research as both have an upper and lower halves integrated in such a way to symbolize two interfacing triangles which forms a hexagram which in Sanskrit is termed as '*Shatkona*' (six cornered). (Leet, 1999)

From the aforesaid examples it is evident that some principles, ideas and beliefs of the Jews and Hindus had some similarities which need to be studied upon focusing on these two icons i.e. *the Star of David* and the *Sri chakra* so as:

- To understand its actual interpretations and
- Whether they are inter-related and
- To determine whether their origins truly belong to the place and era it is believed to be, or does it predate to some other time in history.

2. Study approach

2.1. Components of research

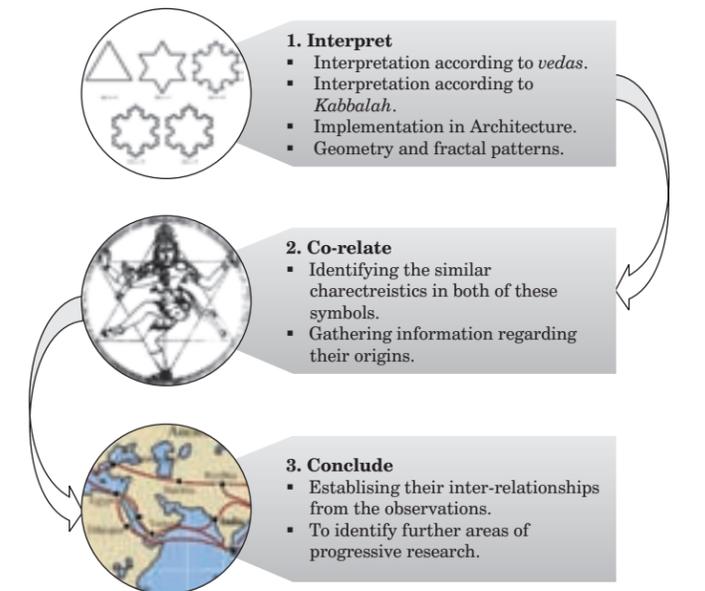
The aim of this research is to understand the relationship between the two prominent symbols, *The Star of David* and *The Sri Chakra* by a thorough study of its interpretations and finding the similarities to find and understand their origins. The tools that were employed to carry out this research and decode its meanings are:

- **Kabbalah:** regarded as a form of Esoteric Jewish philosophy or sacred scriptures of the Jews. It has deep significance as an religious manuscript being integral part of Judaism
- **Vedas:** It is considered to be the earliest records of the Indo-Aryan Civilization and also one of the most sacred texts of India.

→ **Ancient Trade Systems:** Understanding the trade network seems to be crucial as lots of information exchange used to happen through these transaction in form of scriptures, coins, artefacts etc.

2.2. Research methodology

In order to carry out this study, a step by step framework had to be formulated based on the data that were available from different sources, so that it is carried out in an orderly manner as shown in the figure below.



3. Review of Literature

3.1. Theories based on ancient scriptures

The Sri Chakra: It is considered as a realm of spiritual pilgrimage in which the cosmos is represented as elements in the macroscopic level and human body at the microscopic level represented as *chakras* corresponding to each circuit of the human body as depicted in fig.: 4. *The Sri chakra or yantra* is a series of interlocking triangles which follows the perfect ratio of 3.14 or the sacred no. pi.



Figure 4: The Sri chakra (Kak, 2010)



The Star of David: A Hexagram or the six cornered star known in Hebrew as Magen David which according to Jewish tradition appeared on the shields of king David and hence the name fell upon it i.e. 'Star of David' (fig.: 5) and this symbol was later on carried over as a seal by his son King Solomon, hence naming its other name 'The seal of Solomon'.



Figure 5: The Star of David (ehebrew.net, 2013)

The symbol became significant to the Jews just some few decades ago because of which the true origins of the star is still unclear.

3.2. Implementation in Architecture

The *Shatkona* or *Hexagram*, being a sacred geometry can be found as patterns repeatedly manifesting in design, architecture, fabrication and also in the construction of sacred monuments such as temples, megaliths, mosques etc. and also places where people congregate such as altars, groves etc. (Fig.:7)

This symbol is still used for construction of mandalas and *yantras*. The Sri chakra is regarded as the mother of all *yantras* as all other *yantras* are derived from it, which when represented in its three dimensional forms represent *Mount Meru* which is understood as the cosmic mountain situated at the centre of the universe. (Fig.: 6)

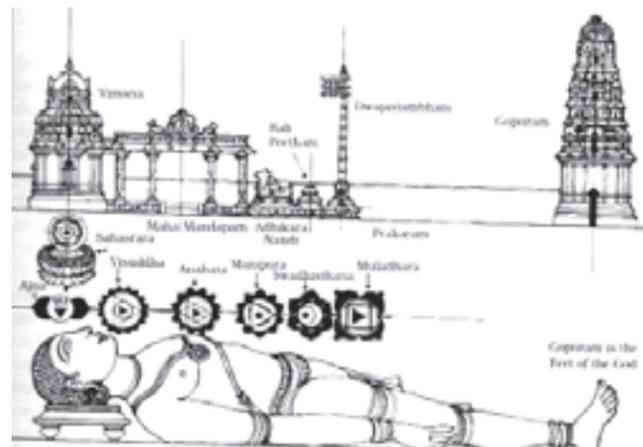


Figure 6: Representation of the chakras in temple geometry (Aris nasi research, 2015)



Figure 7: The dome of Khorakert Monastery (12th c. AD), Armenia (peopleofar, 2012)

Many ancient Indian temples are said to have this star shaped geometry embedded in its plan and also there is one temple which is completely built based on the proportions of the *Sri chakra* projected in its three dimensional form, which is known as 'The *Maha Meru Temple*' also as 'The *Sri Yantra Mandir*' situated in Amarkantak, Madhya Pradesh. It is the only one of its kind which is built so accurately according to the proportions, containing each of the nine levels of chakra, each associated with a yogini or mudra in order to worship the deity known as 'Sri *Tripura Sundari*' or 'Sri *Lalitha*'.(Fig. : 8) (Ramaswamy, 2015)



Figure 8: Sri Yantra Mandir, Amarkantak, Madhya Pradesh (Ramaswamy, 2015)

3.2. Geometrical inter-relationship

The *Shatkona* or *Sri Chakra* represents the cycle of creation and destruction which shares in common with *The Star of David* as well. The different interpretations are:



- The upward pointing triangle according to Hindu mythology represents the material world which is meant for destruction i.e. the *Shiva part* (*Purusha* or *Ishwara*). The destruction here is a temporary one which is also called *pralaya* (*dissolution*) in which the body leaves its materialistic needs said as *Moksha* (*liberation*) and attains spirituality and knowledge (*gyana*) and is reborn again where the creation happens, which is represented by the downward pointing triangle i.e. the *Shakti part* (*Prakruti* or *Maya*). This process of creation and cycle keeps on repeating just like in nature. (Shashidharan, 2011) Similar meaning exists for *The Star of David* which interprets this pattern as two triangles, the upward triangle which represent the male principle and the downward triangle as the female principle. When these two triangles are juxtaposed over one another to form the *hexagram* or *shatkona*, it represents creation.



Figure 9: Nataraja's cosmic dance as Sri Chakra representation (Paramaanu – The God Particle, 2013)

- The upward triangle as *fire* (*the expanding element*) and the downward triangle as *water* (*the contracting element*) and when the combination of both these elements forms the earth which is very similar to its interpretation in Vedas that *Agni* (*Tejas*) which burns upwards and *Soma* (*liquid* or *Apas*) which flows downwards represents the two triangles and the contact between these creates *prithvi* (*earth* or *matter*). (Leet, 1999, p. 7). It's represented as a symbol for alchemy of the merge of the opposites and transmutation in many religions and cultures. (A. Gheerbrant, 1997)

3.4. Fractal science associated with the shatkona

The six pointed star evolves as a fractal and to decode it computational programming became an accessory to be integrated in the research for understanding the geometry of *the Star of David*. One such method incorporated is the 'Linden Mayer system or L-systems' which is used as a grammar to write parallel strings and formulate various algorithmic model in order to understand the geometry and complex systems associated with such fractal geometries.

The fractal which represents the star best is the *Koch's snowflake* also known as *the Koch's curve* (Fig.: 10), *star* or *island* which is the one of the earliest fractals to be identified and has been of mathematical importance. This fractal could be constructed by drawing one equilateral triangle and then altering it recursively as shown in fig. and after its first iteration process creates a *Hexagram*. (Wikipedia, n.d.)

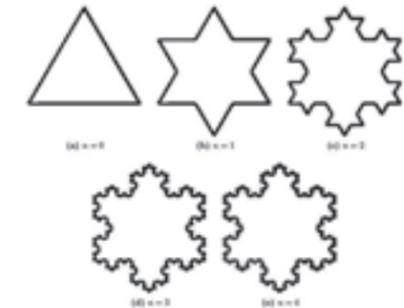


Figure 10: Fractal representation of Koch's Curve (TreeDraw honours Project, 2011)

3.5. Indo-Jewish Inter-linkages

There is no mentioning of the existence of *The Star of David* in the *Rabbinic Literature* which was the mainstream form of Judaism since the 6th century BCE and it was only later that the *kabbalists* associated this symbol with a deeper spiritual meaning and into their religion which started proliferating among the Jewish communities around the 19th century because of the *Zionist movement* and finally became the symbol of the nation and also to represent their flag. (Pelaia, 2015) In fact it was the *Menorah* (Fig.: 11) which used to represent Jewish culture and had its existence rooted deeply into the oldest of the *Kabbalah* teachings. (Dankenbring, 2015)

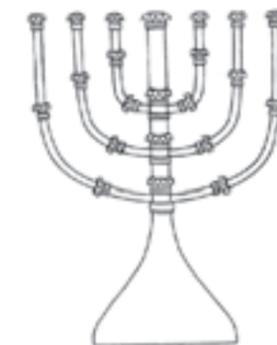


Figure 11: The sacred Menorah (Hachlili, 2001)

Research carried out by historian Stephen Knapp says that the Greeks used to refer Jews as *Judeos* or *Jah deos* for *Yadavas* which means the people of *Ya* or the *Descendants of Yadu*, one of the five Indo – Aryan tribes which can be considered as one main linkage for the similarities found in the book of *Kabbalah*,

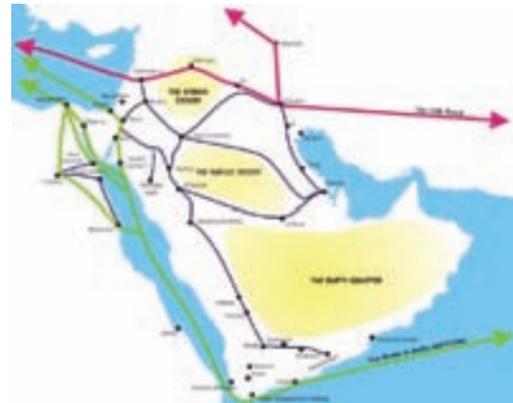


Figure 12: Trade routes existing during the era of King Solomon (Nabatean Trade Routes, 2002)

the book of Jewish mystical concepts to that of *the Vedas*. Another research which was carried out under Max Muller and some other scholars around the 19th century led to the discovery of the land of the *Ophirs* who are equivalent to *the Indian Abhira* at the mouth of Indus River which is in modern day Pakistan. From the scriptures dating back to the Biblical period it was understood that King Solomon used to send ships, (Fig.: 13) one of which is widely known as *The Ship of Tarshish*, to the *kingdom of Ophirs* from Sinai along the banks of Red Sea to bring commodities, jewellery and other unique things such as gold, silver, ivory, peacocks, sandalwood, silk etc. (Fig.: 12) which shows a strong *Indo-Jewish* connections and family ties existing during the Pre-Biblical period. (Yadav, 2010)(Roberts, n.d.)

3.6. Shatkonas around the world

From the discussions above it is evident that the six cornered star was not always associated Judaism and was used by different cultures at various points of history. Fig.: 14 shows that *Hindus, Jains, Tantrics, Smartas, Mayavadis, Saktas, Saivaites* and *Buddhist* sects in India, Nepal, China, Tibet, Sri



Figure 13: Portrait showing King Solomon in his Chambers with Peacocks (found in India).(Yadav, 2010)

Lanka and other countries in Asia have used the symbol of *Shatkona* throughout the ages. This again indicates that this information has been exchanged between many civilizations during different periods in the course of history. (Narasingha, 2009).



Buddhist Chakra



Jain Chakra



Seals, Sumeria 2500 BCE



Black Obelisk, Assyria 825 BCE



Phaestos Disc, Minos 1700 BCE



Coins, Carthage 5th century BCE



Kagome crest, Japan 5th century BCE



Stone carving, Sri Lanka 3rd century BCE



Capernaum, Israel 8th century BCE



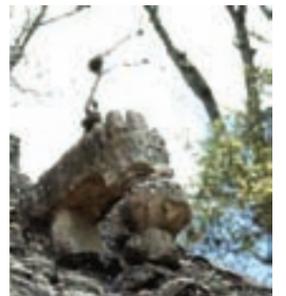
Hisams Palace, Israel 743 CE



Teracotta cup, Greece 560 BCE



Seal, Egypt 3rd century BCE



Sumeria 2500 BCE



Bardo Tunis, Roman Mosaic



Cyprus, Roman Mosaic



Byblos, Lebanon

Figure 14: Shatkonas found around the world (Narasingha, 2009)

4. Conclusion

4.1. Major Findings

From this study, it is evident that *The Hexagram or Shatkona* has a deeper meaning and a strong interconnection with respect to its common ideas and beliefs which has been passed on through time to different civilizations, in which this study mainly targets on the Hindu and Jewish mythologies. Although some significant evidences are available to relate the origin of the star with the Indian context, on the basis of its

interpretations and timelines of origins and considering the Indo-Jewish inter-linkages existing during that time, it can be established that there is some part of the origin of this symbol whose history can be traced back to India.

Another point is regarding its geometry, these two symbols has proved its significance throughout history as it is considered sacred in many different religions and cults it is associated with, but more important than that is its repetitive use as an architecture element in various cases. This leads to the conclusion that the ratios and geometry followed by the symbol is indeed following a perfect ratio just like the golden



proportions which makes it more aesthetically pleasing and new techniques should be found to incorporate this pattern in landscaping, architecture, interior designs etc.

4.2. Further research

As a topic which has remained ever inconclusive, there is a lot of scope for further research in this area.

- To find out more evidences regarding its historical relevance with Indian Mythology.
- To construct a timeline through which we can understand how this symbols has been passed on to different civilization and to back track it to a particular one which can be regarded as its origin based on the evidences that are available in the form of architecture, art, artefacts etc.
- Based on this timeline, a study to decipher whether the relation between these civilization were peaceful or not, basically to understand how this icon i.e. whether it happened through wars, annexation, migration or trade.
- To derive more relations to the geometrical ratios or proportions followed by the symbol to the life sciences according to Hinduism and Buddhist beliefs.

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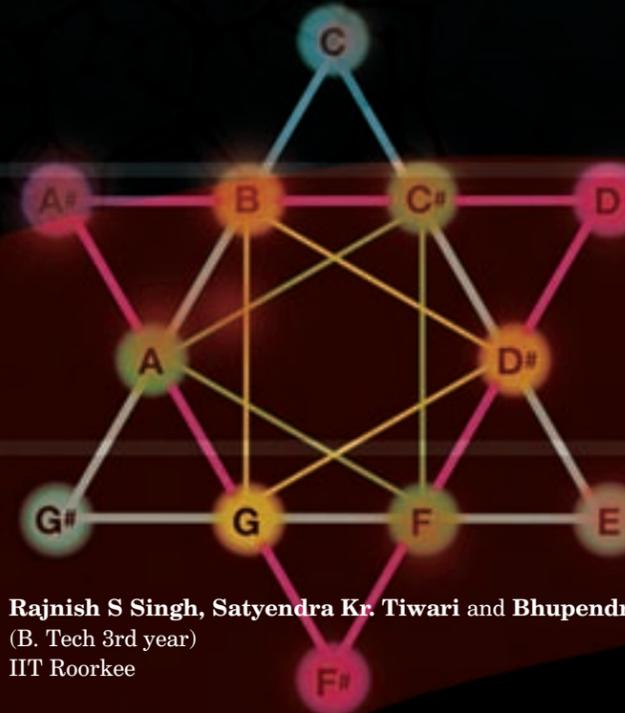
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MACRO AND MICRO STUDIES IN THE ORACLE AND THE SIGNIFICANCE OF MEASUREMENT SYSTEM



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THEME OF THE PAPER



There are two worlds, the microcosm, and the macrocosm, the internal and the external. We get truth from both of these by means of experience. The truth gathered from internal experience is psychology, metaphysics, and religion; from external experience, the physical sciences. Now a perfect truth should be in harmony with experiences in both these worlds. The microcosm must bear testimony to the macrocosm, and the macrocosm to the microcosm; physical truth must have its counterpart in the internal world, and the internal world must have its verification outside. Yet, as a rule, we find that many of these truths are in conflict.

At one period of the world's history, the internals become supreme, and they begin to fight the externals. At the present time the externals, the physicists, have become supreme, and they have put down many claims of psychologists and metaphysicians. So far as my knowledge goes, I find that the real, essential parts of psychology are in perfect accord with the essential parts of modern physical knowledge. It is not given to one individual to be great in every respect; it is not given to one race or nation to be equally strong in the research of all fields of knowledge.

The modern European nations are very strong in their research of external physical knowledge, but they are not so strong in their study of the inner nature of man. On the other hand, the Orientals have not been very strong in their researches of the external physical world, but very strong in their researches of the internal. Therefore we find that Oriental physics and other sciences are not in accordance with Occidental Sciences; nor is Occidental psychology in harmony with Oriental psychology. The Oriental physicists have been routed by Occidental scientists. At the same time, each claims to rest on truth; and as we stated before, real truth in any field of knowledge will not contradict itself; the truths internal are in harmony with the truths external.



Swami Vivekananda
Cosmology

Macro and Micro Studies in the Oracle and the Significance of Measurement System

Rajnish S Singh, Satyendra Kr. Tiwari and Bhupendra Kr. Verma

Abstract

The zest to explore the nature is very dominant in humans since their existence. Different theories and approaches were developed by different civilizations separated by time and space to gain knowledge concerning different fields of life. One such approach is the Vedic view of nature. It had been claimed many times that Vedic understanding of nature resembles a lot with modern understanding of nature. So, in the following article, a generic link between the modern views and the Vedic views of science on the level of micro and macrocosm is explored. Also, a discussion on the evolution of measurement units over time is presented in relation to both the micro and macrocosm. The approach adopted throughout the article is a review of the available evidences, mentioned in notable texts. A comparison of the Vedic and the modern view is presented discussing aspects of Astronomy (macrocosm), a unified field as conceived by human mind (microcosm) and the measurement units for length and time that link the two.

Keywords: Altars, Vedanga Jyotisa, Consciousness, Grand Unified Theory, Intelligence.

1. Introduction

'In some sense mass is a microcosm of the universe; therefore, what man is, is a clue to the universe. We are enfolded in the universe.'

- David Bohm, 1986

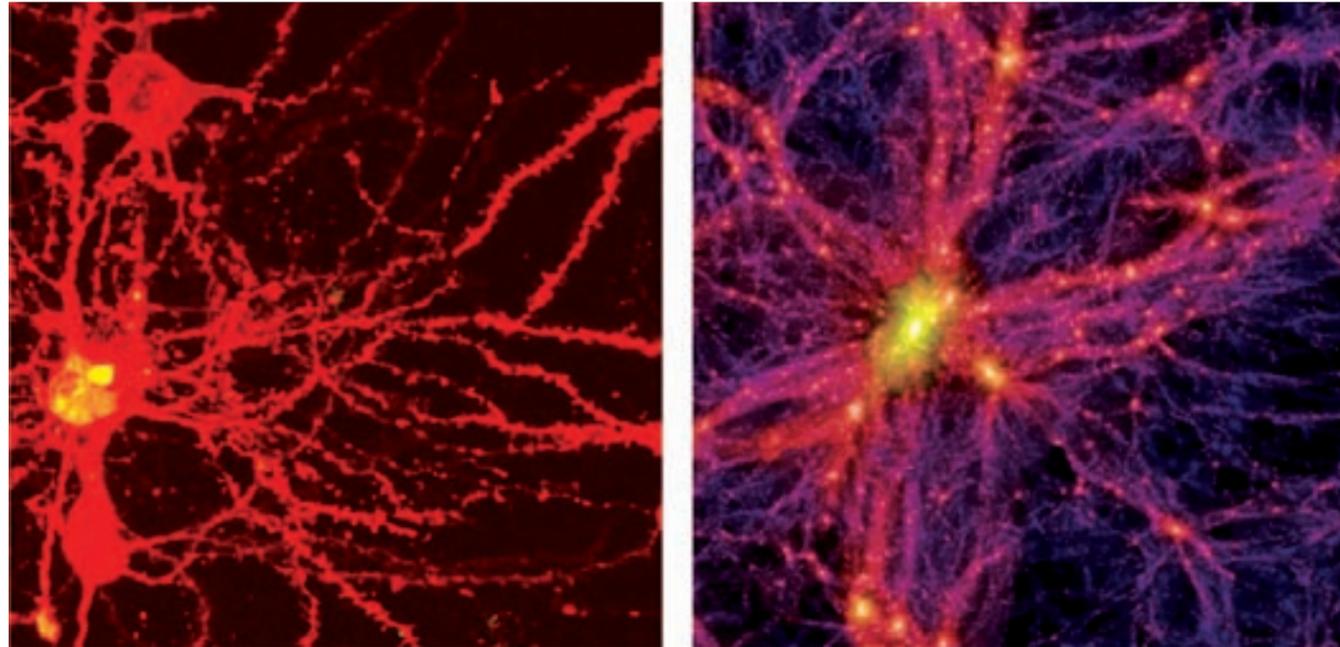
The topic of Vedanta has always been up for debate for their scientific implications in relevance to modern views of science. At one hand there are scientists who claim that they have no scientific basis at all due to the lack of any description of scientific methods for observations on the other hand there are various articles and papers by Vedic scholars and known physicist which discuss the scientific importance of Vedas at length. One such article is by Dr. John S. Hagelin (1989) in which he provides a generic relation between a unified field and consciousness at the scale of microcosm.

In ancient Indian philosophy, the man is treated as microcosm whereas the universe is treated as macrocosm. The universe is referred to as *brahmanda* (brahma-anda) which means the egg of Brahma and the man is referred to as *kshudra-brahmanda* which means the little egg of brahma. This signifies that in Vedic view both man (associated with consciousness) and universe are nothing but manifestation of a single entity. In modern context, a same correlation is shown by Figure 1. It represents the striking resemblance between the human brain and the universe thus signifying the link between the two views in modern context.

As view of nature from one point complement another point, a more fundamental understanding of nature can be developed from these two different points. Thus to get a deep insight of nature it becomes evident to understand the two views. Following this approach we have considered the Vedic and Modern view of the nature for our discussion, at large scale and small scale order.



One is the only micrometers wide. The other is billions of light-years across. One shows neurons in a mouse brain. The other is a simulated image of the universe. Together they suggest the surprisingly similar patterns found in vastly different natural phenomena. -DAVID CONSTANTINE



Mark Miller

Virgo Consortium

Mark Miller, a doctoral student at Brandeis University, is researching how particular types of neurons in the brain are connected to one another. By staining thin slices of a mouse's brain, he can identify the connections visually. The image above shows three neuron cells on the left (two red and one yellow) and their connections.

An international group of astrophysicists used a computer simulation last year to recreate how the universe grew and evolved. The simulation image above is a snapshot of the present universe that features a large cluster of galaxies (bright yellow) surrounded by thousands of stars, galaxies and dark matter (web)

Source: Mark Miller, Brandeis University, Virgo Consortium for cosmological supercomputer simulations. www.visualcomplexity.com

Figure 1: The left part image of describes the connection of neurons with one another. (Source: Mark Miller, Brandeis University) and the right image is a snapshot of simulation created by an international group of astrophysicist, it shows the present universe that features a large cluster of galaxies (bright yellow) surrounded by thousands of stars, galaxies and dark matter (Web). (Source: Virgo Consortium for Cosmological Supercomputer Simulations, www.visualcomplexity.com)

2. Study Approach

2.1. Components of Research

The research is focussed on understanding the Vedic understanding of science and technology at macro and micro level in comparison with the modern understanding. The components of this research are -

- **Vedas:** It provides the basis for our discussion of Vedic approach to nature.
- **Altar architecture:** It is essential to underline the hidden astronomical numbers in their structure.
- **Consciousness:** Man is associated with microcosm and consciousness according to Vedic views, thus is essential to discuss microcosm in Vedic context.
- **Quantum mechanics:** It provides the modern view of microcosm and the effect of consciousness on surrounding.

2.2. Research Methodology

The methodology adopted in this article is a discussion of various evidences mentioned in various texts in context of macro and micro level and to establish a generic link between the two approaches at these levels.

- **Macrocosm**
 - Interpretation of the structure of Vedic altar and the number of hymns of Rig Veda for their astronomical aspects.
 - Discussion of the time period of lunar cycle and its connection to man.
- **Microcosm**
 - Discussion of unified field consciousness, in Vedic context describing its essential feature and how it diversifies.
 - Unified field theory in modern context, its feature and similarities to Vedic understanding.



- **Measurement Units**
 - Discussion of the evidences of ancient Indian time and length scale and measurement system by connecting them to nature.
 - Investigation of the correct conversion value of the discussed Vedic units into modern SI units.

3. Review of Literature

3.1. Macrocosm

"The Self is a point source of coherent light consciousness emanating from a realm of eternal light, higher dimensional space and the uncreated void. A point of intuitive perception within the heart can thus be related to the larger dimensions of the macrocosmic universe." (Holmes 2011: p.58)

The word Macrocosm is an ancient Greek Neo-Platonic scheme used to describe patterns in all levels of cosmos. The word comprises two words *macro-* and *-cosmos* where macro means large and cosmos may mean "order" or "world". It may also signify "ordered world". So, collectively the word macrocosm means large scale order. This large scale order can also be attributed to the order of planetary system. Hence, this section is focussed mainly in bringing out the importance of astronomical consideration in Vedic texts and comparison of their relevance with the modern aspects of astronomy.

Astronomy was considered one of the six *Vedangas* which means subsidiary sciences discussed in Vedas, the other studies were phonetics, ritual, etymology, grammar and metrics. The two old names for astronomy are *gyotisa* - 'the science of light' and *naksatra vidya* - 'the science of stars' (Kak, 2000).

There are various ancient texts like Rig Veda, Yajur Veda, Chandogyanisada etc. which contains various aspects of astronomy.

- There is a verse in Rig Veda (10.5.13)-

"Vedo maso dhrtavratato dvadasa prajavatah, Veda ya upajayate."

Which means that **"who by way of observing Vrata, know 12 months that give fruits (consequences) and also know the enhanced 13th month"**. This clearly represents that the ancient Hindus have a fair understanding of months, seasonal cycles and they compensate the year with respect to seasons by way of enhancing one month, after few years (Paramhansa, 1991).

- The astronomy of the motions concerning the sun and the moon against the background of nakshatras is discussed in the *Vedanga Jyotisa* which is said to date about 1350 BC (Sastry, 1985; Kak, 1995).

Many papers have been published on the significance of such astronomical aspects of ancient Vedic literature. One such study (Frawley, 1994) provides evidences which show that the planets were known in the early Vedic literature. Another important remark was made by Albrecht Weber (1914) in his

book in which he has suggested that Indians must have discovered stars since the nomenclature of stars is particularly Indian.

However, it has been argued time and again that to understand any single Vedic text it is necessary to know the Vedic system of knowledge. This system is recursive in nature where patterns and metaphors are repeated at different levels of description due to which they are often misinterpreted.

This has been summarized by Seidenberg (1978) in his article where he has mentioned that ancient Indian texts have not been carefully examined for their mathematical content.

So, a study of Vedas with a mathematical perspective becomes essential to prove their mentioned relevance to the modern science. Such a study was done by Subhash Kak (1993a) in which he suggested that the number of bricks surrounding altars, the number of syllables and the verses of the Rig Veda are according to an astronomical plan. The paper establishes a correlation, a code, connecting the designs of Vedic altars and astronomical numbers.

The Vedic rituals often deal with the construction of altars and there are many altars mentioned in various ancient Indian texts. The fire altar symbolizes the universe, Garhapatya represents the earth, the Dhishnya represents space and the Ahavaniya altar represents the sky. The fire altars were constructed surrounded by 360 enclosing stones, out of which 21 are around the garhapatya, 78 are around the dhishnya and 261 around the ahavaniya. This construction symbolizes that the earth, the space and the sky are symbolically assigned the numbers 21, 78 and 261 respectively (Kak, 1994).

There are various facts that astronomical numbers are embedded in the design of the Vedic books -

- The Rig Veda itself suggested to represent a symbolic altar. According to Shatapatha Brahmana the number of syllables in the Rig Veda is supposed to add up to the number of *muhurtas* in forty years.
- The verse count of Rig Veda can be seen as number of days in forty years or $261 \times 40 = 10,440$ and the verse count of all the Vedas is $261 \times 78 = 20,358$.
- The Vedic syllabic count of 397,265 can be obtained from astronomical numbers (Kak, 1993b).
- The Rig Veda is divided in to 10 books having a total of 1,017 hymns which are categorized in 216 groups.
- If Rig Veda is assumed to be five layered as described in Brahmanas then the first two books correspond to space intermediate to earth and sky and when it is multiplied by 3 representing the three worlds, this gives a total of 234 hymns which is equal to the number of hymns in these two books.

Further in his study, he arranges the number of hymns and compares the arrangements to a Vedic fire altar. On performing this correlation, he arrived at the number 108 which said to symbolically represent the distance between the earth and the sky.



The significance of the number is presented as-

$108 \times \text{Diameter of the sun} = \text{Distance between the sun and earth.}$

$108 \times \text{Diameter of the moon} = \text{Distance between the moon and earth.}$

This study is being quoted by Klaus Klostermaier (1995) for its mathematical significance as "Subhash Kak, with his 'decoding of the Rig Veda' has opened up an entirely new approach to the study of Vedic cosmology from an empirical astronomical / mathematical viewpoint."

Apart from these altars, there are various text which describes the astronomical knowledge during that time. One of them is Vedanga Jyotisa which discusses mainly the mean motions of the sun and the moon.

The measurement of time in Vedanga Jyotisa is described as-

1 lunar year = 360 tithis
1 solar year = 366 solar days
1 day = 30 muhurtas
1 muhurta = 2 nalikas
1 nalika = 10(1/2)kalas

The moon described to travel through 1,809 nakshatras in a yuga where 1 yuga is considered to be equal to 1,830 days. From a straightforward discussion, it was shown that the moon rise at a mean rate of 24 hours and 50.4864 minutes (Kak, 2000)

The 24 hours 50 minutes clock is of great significance as in a modern study (Winfree, 1987) based on the experiments on blind squirrel monkey; it was found that the fundamental circadian rhythm inside us is not 24 hour which is related to Sun but the 24 hour 50 minutes according to the period of moon. It can be argued that may be this connection was known during Vedic period because the moon (Soma) is called the 'lord of speech' in RigVeda (9.26.4; 9.101.5). Rig Veda contains many references like RV (10.90) where mind is described to be born of the moon.

Similar to these, there are many evidences which represent that people have a fair knowledge of astronomy during Vedic period however in our discussion we came across many Vedic units like *nimesha* etc. So, without a considerable understanding of these units and their relation with the present day modern units any correlation between the two views will seem irrelevant. Thus it becomes evident that we extend our discussion to the measurement systems described in Vedic period.

3.2. Measurement Systems

People have always found it necessary to measure basic fundamental unit viz. time, weight, distance. A definite magnitude of a physical quantity is known by its unit in which it is defined and adopted by convention and/or by law and also used as a standard for measurement of it.

It is known that in ancient time people were used to observe the sun in order to establish units of time so occasionally it is good assumption that such units would be solar units of time. Now-a-days we use and call them "solar days" or simply days(as opposed to stellar background based "sidereal days"). We agree that all Ancient cultures used units for measurement as simple as $1+1=2$. Only recently have we succeeded in creating system of measurement accepted all over the world as the standard system for use in science and trade: The International System of Units (SI). However some researchers suggest that in ancient times people were commonly using units of measure similar in value and closely related to each other. Thus in this section Vedic units for the measurement of length and time are being presented.

3.2.1. Time Measurement

According to many ancient texts like *Yajurveda*, *Vedanga Jyotisa*, *RigVeda* etc. it is known that various units for the measurement of time were used during Vedic period which are mainly concerned with the description of astronomical phenomena.

- Indian scripture gives us a wealth of valuable information which makes it clear that there was an instrument named '*Jala Chakra Yantra*' (Narveker, 2007) which means 'water wheel machine' used for time measurement.
- It is found that ancient people used to connect measurement units with nature (which is on level of microcosm) and god (which is on level of macrocosm) after that they connect these units to nature and king.
- Time scale used in ancient Indian has 'nimesha' as its base unit. Nimesha is a twinkle or a blink of the eye of an average man at relaxed position. After converting 'nimesha' to modern time unit it is found that 1nimesha = 16/75 seconds.(Kak, 2000)

Table 1: Ancient time scale. (Content Source- *Kautilya Arthashastra, Book 2; Table By-Authors*)(Shamasastri,1915)

1 truti	=	the time to integrate 3 trasarenu
100 truti	=	1 vedha
3 vedha	=	1 lava
3 lava	=	1 nimesha
3 nimesha	=	1 kshana
3 kshana	=	1 kastha
15 kastha	=	1 laghu
15 laghu	=	1 nalika or the time during which one ádhaka of water passes out of a pot through an aperture of the same diameter as that of a wire of 4 angulas in length and made of 4 máshas of gold.
2 nalika	=	1 mahurta



6 nalika	=	1 yamah = 1/4 of a day or a night
2 masas	=	1 ritu
3 ritus	=	1 ayanam
2 ayanam	=	1 varsha

After describing the various time scales used in ancient India now we move to other fundamental units used to measure lengths during that era.

3.2.2. Length Measurement

The smallest length unit known during Vedic period was *Parmanu* which is equal to 8^{-5} angula. Angula signifies the length of the one of the three vertical portions of finger. However, the exactness of this definition is not correctly known. Measurement units are not only part of the Vedic period but many other civilizations as well.

In the Harappan and Mohenjo Daro era people were skilled in town planning and architecture. Since, strong evidence exist that all bricks used were of the same relative dimensions that is the length, breadth and thickness in the ratio of 4:2:1(Joshi, 2008). The great Indian economist, politician and teacher, Kautilya (formerly known as Chanakya) wrote a book *Kautilya's Arthashastra: Book II*, in which he excellently connect the Vedic unit of Measurement to Chandragupta Empire. (Shamasastri,1915)

According to Table 2 it is easy to say that all units of length measurement were derived from base unit angula. The conversion of all ancient units into angula is given in Table2 as per the value of 1 angula= 1.763 cm(Balasubramaniam,2009).

- Modern units for length are cm, m, feet, km etc. Many of scientist and archaeologist connect them to Ancient units but the value of *dhanush* is different in different aspects. Two reasons for different value of dhanush-

- One is, the value of dhanusha is only depends on angula. There are many types of dhanusha as per considered number of angula consisting in it. As one dhanusha is equivalent to 96,100,104 and 108 angula in different region and different era.
- It was also found that the value for angula is different, in some text 1 angula is shown equals to 1.763 (Balasubramaniam, 2009) and in some other text it was taken to be 1.905 cm as per use of it.

Table 2: Conversion of ancient length unit in to angula

Vedic Units	Value in angula
1 atom	= 8^{-5} angula
1 particle	= 8^{-4} angula
1 liksha	= 8^{-3} angula
1 yuka	= 8^{-2} angula
1 yava	= 1/8 angula
1 dhanurgraha.	= 4 angulas
1 dhanurmushti.	= 8 angulas
1 vitasti, or 1 chháypaurusha	= 12 angulas
1 sama, sala, pariraya, or pada	= 14 angulas
1 kamsas	= 32 angulas
1 kishku	= 42 angulas
1 aratnis	= 48 angulas
1 hasta	= 54 angulas
1 vyáma	= 84 angulas
1 garhapatya dhanus or 1 paurusha	= 108 angulas
1 danda or dhanush	= 192 angulas
1 rajju	= 1920 angulas
1 paridesa (square measure)	= 3840 angulas
1 nivartana (square measure)	= 5760 angulas
1 goruta (sound of a cow)	= 192000 angulas or 1000 dhanusha
1 yojana	= 4 gorutas 768000 angulas

(Content Source: *Kautilya Arthashastra, Book 2; Table by- Authors*)

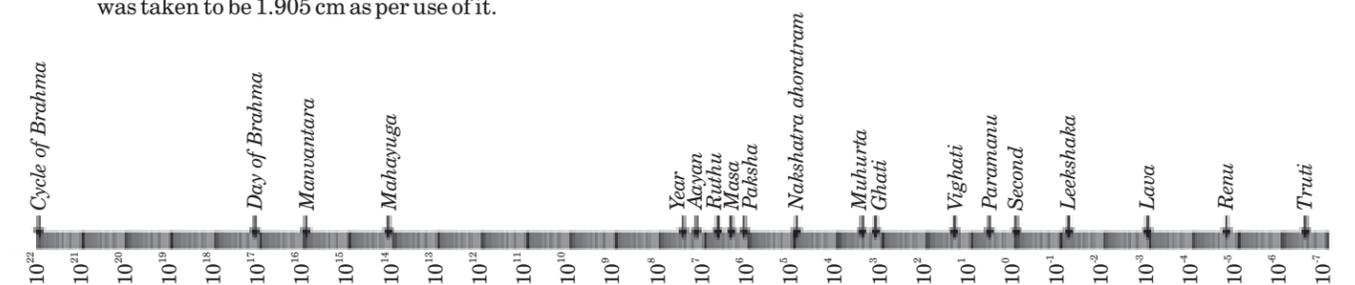


Figure 2: Ancient time units in Seconds. (source : Wikipedia)



Such variations and conflict on measurement scale in Vedic era can be attributed to the gap between two civilizations. So, different civilizations followed different system however presently existing modern SI system is Worldwide accepted thus removes any such problems.

In our discussion of units we have already seen the significance of large scale units like nimesha in the section on Macrocosm but the small units like parmanu have their significance in description of small scale or Microcosm.

3.3. Microcosm

The word macrocosm describes large scale orders whereas the word microcosm used to describe order at micro or subatomic level. From scale of ancient measurement system in India it can be inferred that the units were taken by their physical significance i.e. the word itself signifies its value. The smallest value on length scale is considered as “Parmanu” expressing its physical significance as fundamental entity in matter. The concept of Parmanu was given by Maharishi Kanada, who is associated with atomic theory around 600 B.C., which in modern context is related with Atom and subsequent subatomic particles (Bhatnagar, 1984).

Man is compared to microcosm or a consciousness in many ancient Indian texts. But in modern view the microcosm is the realm of atoms and subatomic particles. Subatomic particle with their unique way of interaction in nature is the most fascinating thing, explaining their nature lead to development of quantum mechanics. And it is with this development a link between consciousness and its influence on surrounding is signified. One of the many interpretations of quantum mechanics is “Copenhagen Interpretation”. This interpretation signifies the effect of a conscious mind on the state of a system or a particle. According to interpretation the wave function of a particle collapses when an observer make an observation.

This raised more curiosity about consciousness and is direct evidence from modern physics that human consciousness affect the physical world around it when observed. Expressing views on relationship between physics, religion and philosophy Paul Davies says “It is true that results of modern physics do touch such fundamental concepts as reality space and time, the confrontation may lead to entirely new development which cannot yet be foreseen” (Heisenberg, 2000).

In this section we take a fresh approach to draw parallel between this modern physics and Vedic science. Vedic science basically focuses on gaining knowledge through exploration of consciousness.

Einstein's hope of finding a unified field theory to unite the electromagnetic, gravitational and other known force field has been virtually realized in the form of unified quantum field theory.

- It can be possible from a unified field theory, that all four fundamental forces can be derived from the field theory located at Planck's scale (10^{-33} cm or 10^{-43} sec), which through its own self-interacting dynamics diverse forces and matter fields that constitute the universe.
- Investigating further about dynamics lead us to the parallel Vedic concept of consciousness. The revival of Vedic knowledge has given rise to a new quantitative science of consciousness with application and proven technologies in every major field of human concern. (Yogi, 1986, 1985, 1977; Chandler, 1987; Proceeding of the International Conference, 1980). These provides systematic experimental techniques (Meditation) which allow direct exploration into fundamental and universal principle of intelligence and consciousness (Yogi, 1969, 1975, 1986b).

The fundamental state of awareness has been found to possess a close structural correspondence to physical structure of natural law at fundamental scale (Hagelin, 1987). The deep parallel between human intelligence and intelligence of nature makes it possible to gain profound physical insight into basic laws of nature. The concrete classical concepts no longer provide an adequate basis for understanding physics at the quantum-mechanical or quantum field-theoretic levels, and are often more confusing than illuminating. If one's outer, sensory experience fails to provide a viable common-sense basis for physics, then the only obvious alternative is the inner experience of the dynamics of consciousness itself (Hagelin, 1989).

- In the fundamental state of awareness, the knower, the known, and the process of knowing are united in a state of pure, self-interacting consciousness, in which consciousness knows itself alone.
- This inner subjective experience is marked by the onset of a unique constellation of physiological (Wallace et al, 1972); Farrow and Hebert, 1982; Wolkove et al, 1984; Jevning, 1978), neuro-physiological (Badawi et al, 1984 as cited Hagelin, 1989), and bio-chemical changes (Walton, 1987). According to Maharishi Vedic Science, the unified field is fundamentally a field of consciousness (Yogi, 1985, 1986).
- The field is known as atman, meaning 'pure consciousness', or 'self' since the unified field constitutes the deepest reality and hence the true identity of everything in nature.

“The term 'consciousness' is clearly distinguished from the highly individualized and anthropocentric sense of the term common to everyday experience.”

It is used to denote a completely universal field of 'pure' and 'self-interacting' consciousness—a consciousness aware of itself alone, devoid of any individualizing influence or external objects of experience (Yogi, 1985, 1986; Chandler, 1987). Due to its essential nature as consciousness, the unified field has the dual characteristics of existence and intelligence (Figure 3). (Proceeding of the International Conference, 1980; Yogi lesson 8)

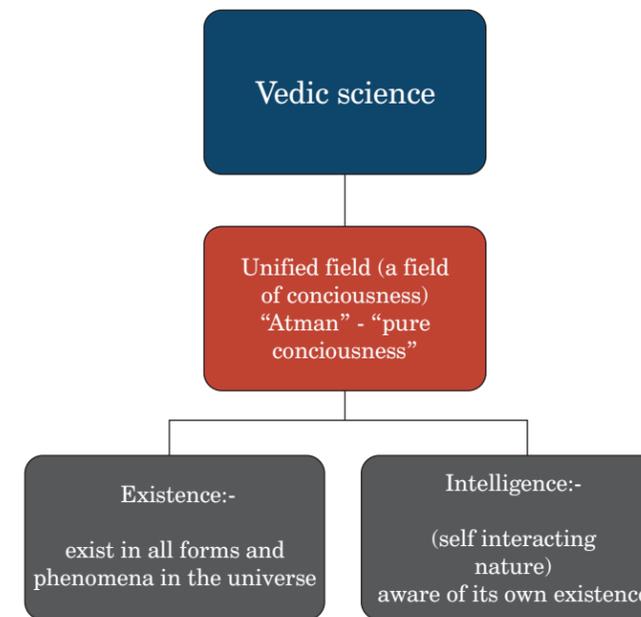


Figure 3: The dual characteristics of unified field. (Source: Authors)

Consciousness exists in all forms and phenomena in the universe; the 'intelligence' part of consciousness is associated with its self-interacting nature. Due to its essential nature as

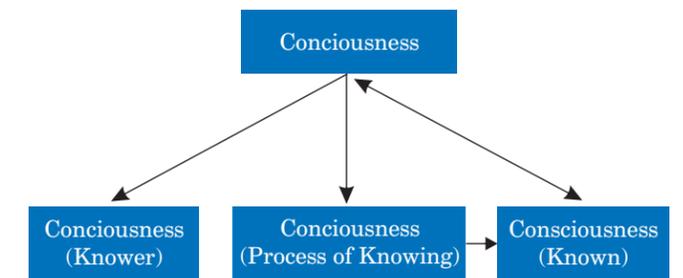


Figure 4: Three-in-one structure of consciousness. (Source: Authors)

consciousness, consciousness is aware of its own existence i.e. consciousness **'witnesses itself'** (Proceeding of the International Conference, 1980; Yogi, 1969). This highly nonlinear property of awareness sets up within the field of consciousness a three-in-one structure of knower, known, and process of knowing which can be described as **'consciousness (the knower) is aware of consciousness (the known) through the agency of consciousness (the process of knowing)'**. This property of consciousness has been represented pictorially in Figure 4.

'This self-interacting dynamics of consciousness knowing itself and its associated three-in-one structure of knower, known, and process of knowing is called the Ved' (Maharishi Mahesh Yogi, 1985, 1986). It resembles to the highly dynamic, discriminative (because consciousness can discriminates between itself as knower, known, and process of knowing) and creative (as it can

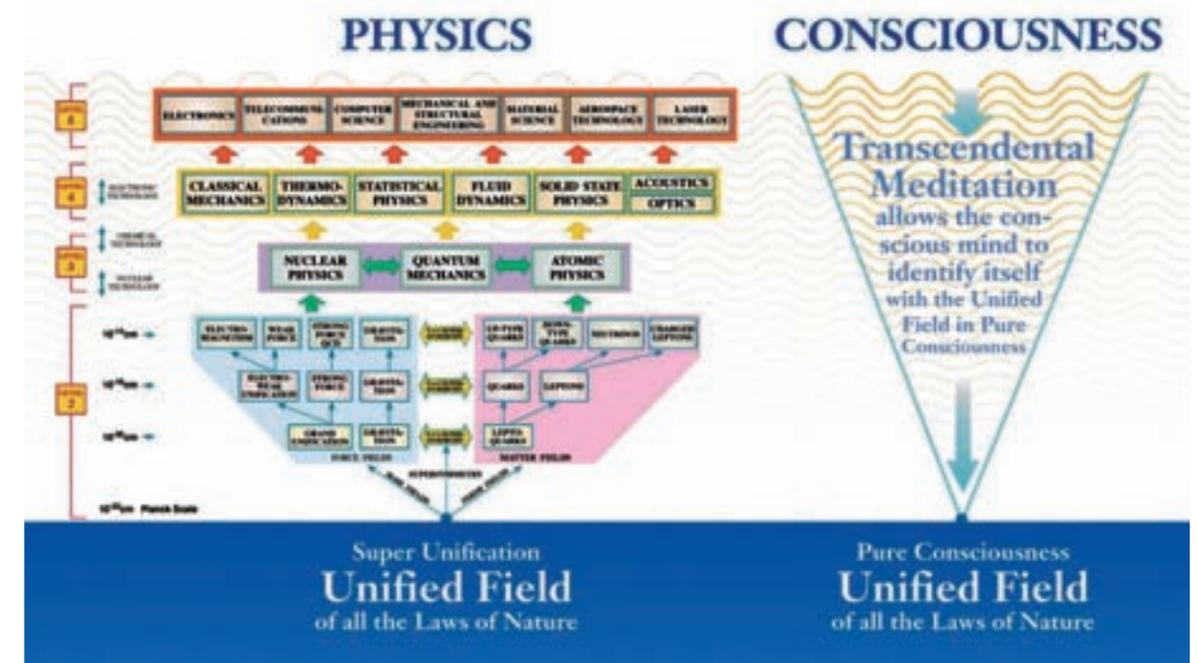


Figure 5: Consciousness and Science. (Source: John S. Hagelin, Restructuring Physics from Its Foundation in Light of Maharishi Vedic Science.)

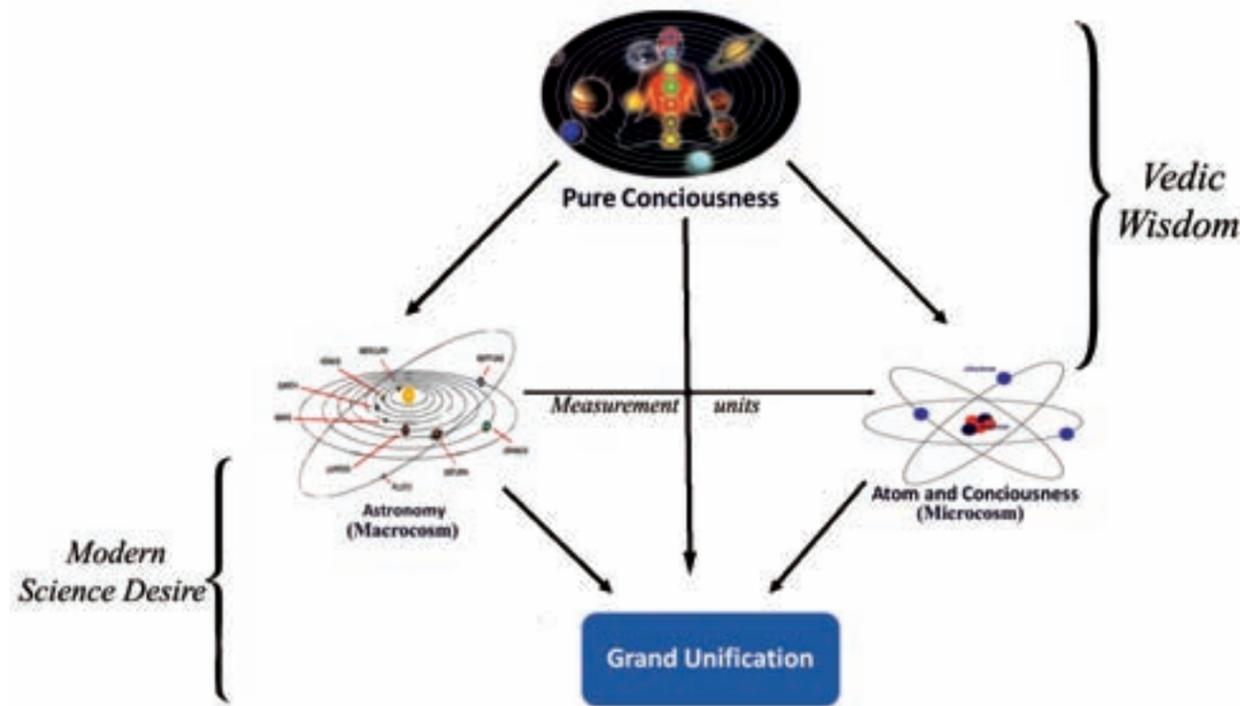


Figure 6: Unification of macro and microcosm in Vedic and Modern Science traditions. (Source: Authors)

create three from the state of unity) property of the field responsible for the spontaneous and sequential emergence of the diversified structure of the laws of nature.

Similar to this there are certain properties of unified field which clearly resembles with various aspects of consciousness.

- It exists and it is eternally present.
- If there were no laws of nature there would be no consistent patterns of natural behaviour and nature would be unintelligible.
- Unified field theory is characterised by its Existence and Intelligence.
- Its intelligence property is displayed in the form of innumerable laws of nature governing natural phenomena at every scale of physical universe, degree of intelligence of discrimination, dynamism and creativity is highly observed at quantum level.

It is interesting to note that from the above provided comparison the unified field is just like a field of consciousness, it automatically incorporates both characteristics of existence and intelligence (Proceeding of the International Conference, 1980; Maharishi Mahesh Yogi lesson 8). One can therefore appreciate the elegance and economy of Vedic Science, in which one fundamental postulate (consciousness) automatically incorporates both characteristics of existence and intelligence—both the field and the quantum principle.

4. Conclusion

4.1. Major Findings

The major similarities and differences between the Vedic and modern views of nature are shown at micro and macro level. The differences observed can mainly be attributed to the basic approach to understand nature and make life easier.

- The western approach is more focussed on making the life easier due to adverse climatic conditions thus their approach can be termed as '**external approach**'- related to the study of ecosystem, matter and forces whereas
- Due to favourable climatic condition, the Indian approach was more focussed on the exploration of self and it can be termed as '**internal approach**'- related to the study of consciousness.

The question here is not focused on which civilization is advance and how these civilizations developed their understanding of nature but how the combination of both can give a better understanding of nature and lead to a good life.

At macro level, it was observed that

- the architecture during the Vedic period is influenced by astronomy and
- The smart arrangement of hymns of Rig Veda represent an underlying mathematical structure which might have existed during that era.



Such beautiful encryption of astronomical numbers in architectural structures, Vedas and the correlation of man with astronomical phenomena signifies that a certain connection between macrocosm and microcosm is known during Vedic period.

At micro level similarities were observed between the concept of consciousness developed during Vedic era and a unified field theory of modern science. These similarities signify that at the level of microcosm, the two approaches even though they start off with completely different views but at a certain fundamental level they seem to converge...they seem to unify.

Thus we conclude with a remark that it doesn't matter what language or view we use to describe the nature at fundamental level all are just the manifestation of one.

4.1. Scope for further research

In this study, the topics are briefly covered describing the similarities and differences between modern and Vedic views at micro and macro level. But, a deeper analysis of these two approaches will provide a further insight into the any existing interrelationship between the two approaches.

- More investigations are required to determine the underlying mathematical structure which had influenced the architecture during Vedic era.
- The conversion of the Vedic units to the modern units is not specifically defined, a thorough study of measurement units is necessary to establish the correct conversion between the two.
- At micro level many similarities between the consciousness and a unified field theory are observed but the correlation discussed is generic in nature. A further research is required to establish a more exact correlation between the Vedic and modern view at microcosm level.

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EPILOGUE

HISTORIC EVOLUTION: A TREE FORM



Epilogue

Historic Evolution: A Tree form

Considering a unique spread and depth of Indian history, the contributions range from varied spheres of human thought, - the political and the cultural; the economic and the ecological; and the material and the spiritual; the evolution has taken place in a unique way – like a tree.

But in the tree and in its inner hierarchy having different spheres at different levels, the ideal is that the material, the political, the social, the cultural and the ecological are only secondary and subordinate to the apex. The apex is the very summit of spirituality. In the words of Swami Vivekananda:

'If there is any land on this earth that can lay claim to be the **blessed** *Punya Bhumi* (holy land).....the land where humanity has attained its highest towards gentleness, towards generosity, towards purity, towards calmness, above all, the land of introspection and spirituality – it is INDIA'¹

'Here in this blessed land, the foundation, the backbone, the life-center is religion and religion alone'²

- Swami Vivekananda

Originating from that very summit of spiritual truth-foundations, there is a comprehensive ramification of branches – which includes philosophies, psychology, sciences, and arts and literatures covering all her cultural and material progresses; constituting the diversified parts of a larger whole; and standing and encompassing for her entire history. They stand to render her contributions complete.

The ramifications are the branches and the extensions and they originate from that very summit, the very core or root. They represent a multitude of rivers and living flows descending from that highest. The highest ever remains over the perpetual snow-line in the greatest of all mountains – representing the peaks of universal and impersonal truth-realization. The branches are stratified as the trunk of the tree descends to many forms, flows and diversity. But the connections remain. The tree is India. India is the Speaking Tree.³

India has always spoken for herself and for all humane people coming from all corners of the world. In the words of Shri Aurobindo:

'India of the ages is not dead nor has she spoken her last creative WORD; she lives and has still something to do for herself and the human peoples, And that which must seek now to awake is not an anglicized oriental people, docile pupil of the west and doomed to repeat the cycle of the occident's success and failure, but still the ancient memorable SHAKTI recovering her deepest self, lifting her head higher towards the supreme source of light

and strength and turning to discover the complete meaning and a vaster form of her Dharma'.⁴

An inverted evolution: a special case of involution

Assessment of the historic evolution of any country has usually a focus of research. Normally, it is political or economic and at most, cultural. Only in rare occasions, it reaches something, which is even higher – which is the spiritual.

The cases of Greece and Egypt are such. But in the case of Greece, historic continuities has been only momentary from an archaic period of Eleusinian and Orphic schools in the Cyclades and they shortly ended with Thales, Plato, Pythagoras and a few more antique Greek philosophers. Today, just a little or perhaps 'nothing' remains of that ancient 'Culto-Hellenic' element. Nothing of that has survived in its original form and not much is available today to the modern western material world for ready reference, recognition, acceptance and reuse. For Egypt the roots are far more remotely lost.

The case of India is an exception and unparalleled. They have survived the ravages of time and now they remain ready for a fresh recognition. In the words of the Swami Vivekananda:

'In ancient India the centers of national life were always the intellectual and spiritual and not political. Of old, as now, political and social power has been always subordinated to spiritual and intellectual'.⁵



With the framework of India's Historic evolution, the continuity is with the highest, and the summit has been sustained since her earliest times to that of the present. From that origin, her march, her continuum of historic evolution has remained alive through a multitude of seer-wisdoms manifested through her innumerable prophets and saints and Avatars in every age. Beyond all these and its flow, remains a deeper past, which is still evolving today and also perpetually involved in what we are doing today. Of late, the great personality of Shri Ramakrishna is the historic endorsement to that continuous involvement bringing forward a complete epitome of India and her heritage.

The Indian premise is logically the inverse of others. In her case it is that of an involution – the involvement of that a priori over time.⁶

The Indian schemata

The simile of the tree and its branches are synonymous both with Indian spirituality and the modern computational sciences. Trees' are central to spiritual concepts as they are now in the current sciences of information management based on a stratified 'data search'.⁸ It has been in the introduction.

In Indian spiritual symbolism, there is the world tree. It is the tree of wisdom – the 'Bodhi-tree'.⁹ Here, the tree remains inverted - with the root above and the trunk line below holding all its branches (*urdha-mulamaddhasakham*).¹⁰ The manifold branches stand for ramification, diversity and subsequently for the complexity of this world.

The tree has two forms – one the full form and the other, the embryonic form, the seed-form. In the inverted tree form the two are combined to represent a complete truth. It is the Indian schemata.

In the apex there is the root, the seed-form and the full tree stands for the descendent, the evolution itself. Here involution (or inverted evolution) represents both forward and backward linkages over space and time. In other words:

- Forward linkages are historic continuums.
- Backward linkages are journeys tracing the beginning, the genesis - the root.

In the words of the Swami Vivekananda:

'That every evolution is preceded by an involution. The seed is the father of the tree, but another tree was itself the father of the seed.'

India's contributions

India has contributed through her multitude of ramifications in the passage of time. Her contributions¹¹ are evident from the works of Swami Vivekananda:

'As I look back upon the history of my country, I do not find in the whole world another country, which has done quite so much for the improvement of human mind.....the same holds good

with respect to sciences. India has given to antiquity the earliest scientific physician.....even more it has done in mathematics, for algebra, geometry, astronomy, and the triumph of modern science – mixed mathematics – were invented in India, just so much as the ten numerals, the very cornerstone of all present civilization, were discovered in India, and are in reality, Sanskrit words.....In philosophy, we are even now head and shoulders above any other nation.....In music India gave to the world her system of notation, with the even cardinal notes and the diatonic scale.....In philology, our Sanskrit Language is now universally acknowledged to be the foundation of all European languages.....In literature, our epics and poems and dramas rank as high as those any language.....In manufacture, India was the first to make cotton and purple (dye), it was proficient in all works of jewelry, and the very word 'sugar', as well as the article itself, is the product of India. Lastly, she has invented the game of chess and the cards and the dice. So great, in fact, was the superiority of India in every respect that it drew to her borders the hungry cohorts of Europe, and thereby indirectly brought about the discovery of America'.¹²

The present book has contains a collation of 16 short research outlines for evaluating her historic evolution. But each outline has to begin with a discussion of her impersonal-universal strength, which has had always been her ideal – the a priori, her spirituality, which has led to her evolutionary framework – both in breadth and depth.¹³

The 16 works conducted within a short period of time, i.e., the summer of 2015, covering briefly various aspects of her historic framework and the various chronological phases is just a beginning of the research. But the most important point is to trace in and through that, the inner objective of her return and all humanity to her highest and deepest ideal where the whole universe is one with the Divine and expressed as one Life Divine.

Thus, it is evident that:

'It may be debatable whether material history is the expression of an original idea; but it is an indubitable fact that spiritual history is always so. 'It is of the One existence that yearning hearts speak in diverse ways' - has said a Vedic seer (RV: 1.164.46); and this is true not only in an abstract way, but in a concrete form also.

Like the mystic Asswattha tree of the Upanishad, [the Bodhi Tree] 'with its roots above and the branches below', the Vedic tradition, in a broad sense, it stands at the very source of almost all forms of spiritual cults. And the interpretation of this tradition can be attempted with best results if we do not place the Vedas on the isolated heights of the past, but with a total (complete) vision of the present retrace our steps to the roots discovering, with a penetrating insight, the links at every steps."

Sri Anirvan
Vedic Exegesis

"The Cultural Heritage of India", Volume one
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Understanding the Law of Causation

For assessing the comprehensiveness of Indian history one has to look both at the causal tree (the Tree of Wisdom) and the effectual tree (the Tree of Life) and the linkages between them. The linkage represents the timeless law of causation. The wisdom of the Aryan Poet-seer had realized the law and this is the science, which is imbedded in the Vedas. Gautama the Buddha had revived it in an age preceded by countless of many of different Vedic sages in different periods of a remote history. Swami Vivekananda makes this point clear in his paramount work entitled 'Historic Evolution of India':

'Non-existence can never be the cause of what exists. Something cannot come out of nothing. That the law of causation is omnipotent and knows no time or place when it did not exist is a doctrine as old as the Aryan race, sung by the its ancient poet-seers, formulated by its philosophers, and made the cornerstone upon which the Hindu man even of today builds his whole scheme of life'.

The law provides the schemata, the cornerstone upon which the histories of Indian civilization and the world have been eternally founded.

The historic framework

At the apex of her evolution stands her countless poetic seer-wisdoms – the forerunners, the *A Priori*, **a foundation that is sovereign, impersonal and therefore universal**.

From that summit her history has come down through manifold ramifications – standing for branches of knowledge at the philosophical, the ethical, the humanitarian and the material levels.

These manifestations of the personal and the personified are positioned against the impersonal infinite backdrop. It is a uniqueness of Indian civilization and indeed a peculiarity posed before the one-track monotonous rational mind. In the words of Swami Vivekananda:

'This is a peculiarity which we have to understand – that our religion preaches an Impersonal Personal god. It preaches any amount of impersonal laws plus any amount of personality, but the very fountain-head of our religion is in the Shrutis – the Vedas, which are perfectly impersonal; the persons all come in the Smritis and the Puranas, the great Avatars, Incarnations of God, Prophets and so forth'.

Various phases of Indian history

Broadly **seven historic phases** can be identified:

1. **The original phase of the poetic spiritual** – this is the proto-Vedic phase of the earliest Vedic Seers. Here an intense anthropocentric system of direct psycho-somatic

memory traditions was developed, which was centered on the divine word (the 'mantra'). The system provided the key to direct absorption into realization itself expressed as the Shrutis. The Shrutis stand for a complete poetic insight into universal knowledge (the macrocosm) seen in perfect harmony and rhythm with the realization of the individual truth-seeker (the microcosm). The shrutis are therefore poetries of cosmic realization irrespective of their literal coding as documents and also independent of any space, time and racial connotations. They characterize the life of the poet-seer bridging the real (non-real) to the unreal (real). In the words of Swami Vivekananda:

'Arts and sciences, even the realities of domestic life, are covered with a mass of poetical conception, which are pressed forward till the sensuous touches the super sensuous and the real gets the rose-hue of the un-real'.

2. **An existential phase (allied with the first phase)** was emphasizing a complete range of associated needs of human life and collective social ethics and functioning. As a result, a comprehensive system of applied spiritual knowledge-systems (other than *Shrutis*) came into being that covered the applicability of the Vedas to external life. They are the Vedic Exegesis called the six *Vedangas*,¹⁴ which are complementary to the four Vedas; which were structured and documented later. In the words of Swami Vivekananda:

'The earliest glimpses we have of this race show it already in the possession of this characteristic (the poetic-spiritual), as an instrument of some use in its hands. Many forms of religion and society must have been left behind in the onward march, before we find the race as depicted in the scriptures, the Vedas'.

These *Vedangas* are *Shiksha(s)* (Science of Phonetics that explain the formation of words through mantic vibrations); *Nirukta* (Science of Etymology and phonetic roots that configure formation of language systems); *Vyakarana* (Grammatical logic explaining sciences of compounding and de-compounding notes and vibrations behind the nodes leading to pattern of language systems); *Chandas* (Science of rhythm or poetry and harmony between cosmic and anthropocentric vibrations); *Jyotisha* (Science of a relationship between cosmology i.e. large-scale structures and anthropometrics i.e. small-scale functions and the inherent logic and purpose of human evolution implied by that relationship). Ancient India had realized and coded such a galaxy of wisdom right at the outset of civilization itself.

3. **Later Vedic phase – a departure:** Then came a drifting away from the poetic insight. This marked the beginning of a phase of spiritual rationalism – coded in the Upanishads (*Vedanta*) and they were increasingly contrasted by a growing need of existential codes. These codes were the material-moral aspects of social, cultural and economic ethics and they came to be known as various *Samhitas* and *Darshanas* (Manu-Samhita being only one of them).



Over time there were further changes required to monitor a transition from the days of *Shrutis* (large-scale intuitive logic that seemed abstruse and intangible) to *Smritis* (small scale analytical logic that is tangible and therefore manageable). In the words of Swami Vivekananda:

'An organized pantheon, elaborate ceremonials, divisions of society into heredity classes necessitated by a variety of occupation, a great many necessities and a good many luxuries of life are already there. Onwards through several centuries, we come to a multitude surrounded.....we catch a glimpse of different races – Dravidians, Tartars, and anaboriginal pouring in their quota of blood, of speech, of manners and religions'.

4. **The phase of *Smritis*** marked a rise of personified religious systems that consequently leading to a triangular polarization of schools emphasizing direct route to gnosticism that is rapturous and monotheistic as against the two others – one, the idea of devotion based on a growing need and necessity of for the average human being requiring an intermediary (either an icon or a personal savior myth) and the other, agnostic materialism for others, who were not interested in the first two pursuits.

Over time, the rivalry between them intensified. These were periods of growing conflicts and they may be re-interpreted as a phase of historic departures and Diasporas beyond the Indian sub-continent – leading to dispersals, de-linking and disseminations from mainstream depths of Indian thoughts to other world cultural systems. The separation of Egyptians as a race from their once Celebrated Land of Punt and the separation of the Persians from the original Indo-Iranian order of language, religion, norms, nomenclature and culture are two of the brightest examples. Another instance is that of the re-casting of the ideas of the many Vedic sages, who were common to both the earliest *Shrutis* and witness of the historic battle between India and Sri Lanka.

Many missing links of Indian history can be traced back to this phase. The phase was first characterized by internal troubled times of Indian history. And then were the Diasporas. Finally the wisdom and genius of Rishi Krishna (*Veda Vyasa*) saved the great continuum of Indian history by decomposing the loftiest ideals of the universal-impersonal Vedic foundation to a large set of mythical-personalized religious scriptures as coded in the Epics, the *Puranas* and secondary upa-puranas. They were coded in millenniums and centuries and as a whole the period may be presented as 'the age of Puranas'.

5. **Phases of revolt and counter-revolt** within India were subsequent and frequent. The separations led to bifurcations harboring on the pillars of knowledge (gyana-kanda based on ascetic purity or pursuits of philosophy) and other ideas based on actions (karma-kanda) emphasizing material utility and production systems. Much of this period can be traced from what followed the

age of the Gita and its key person to times around the Buddha. The compounding and the intensification of the conflict are evident in the words of swami Vivekananda:

'This was the beginning of that caste question and that triangular fight in India between ceremonials, philosophy, and materialism, which has come down unsolved to our days'.

6. **Phase of invasions and inter-mingling:** By these times, other world civilizations were emerging as powerful ones and as ones distinct and departed from their ancient ties with India. The history of a westward expansion of civilization was characterized by developments in Persia, Assyria, Sumeria, Anatolia and finally Greece and Italy. The journey was also characterized by a departure from the original integrity of the three, i.e., religious knowledge, philosophy and the natural sciences to a stage featuring the separation of three.

In the meantime, the downward descent of Indian history slowly slipped into the mediocrity of the medieval ages and the intensification of her internal weakness was the cause of her increasing exposure to invasions from new civilizations and cultures that have had been far more materially advancing. They were mostly from the West. The first were the Greeks followed by their followers, the West Europeans.

These are more known times of an increasing mercantile trade, and colonization and the outraging glory of a European imperial order. The order gave birth to a powerful utilitarian lifestyle, an origin of much of the suppliers and shapers that determine our present times. A materialistic version of globalization and its underlying intent –the spirit of rising material affordability, consumerism and hedonism are now the current determinants of progress. Here we are.....

But the emerging order of machines and utility have been framed by a series of shifting epicenters– first, Europe; second, the Americas and third, of late, the emerging countries in the Asia-pacific.

The order has traveled westwards; crossed the shores of Europe and the Pacific; reached the Americas; and they are about to re-enter Asia! Here we are now.

7. **The paradigm shift:** We are beginning to enter a phase of advanced social sciences and engineering systems based on advances of communication and information systems to begin with. But more expected trends are visible in the new areas of 'human-nature dynamics' and the principle of life (Bios) and the role of ecology and human resources development are increasingly becoming important leading to a new order of global ethics. 'The Over-view Effect' and the 'Chaos theory', which is rendering a holistic understanding of world weather degeneration, a need of green pollution-free technology and an organic-symbiotic embedment of our own technological progresses into the overall order of the universe are the forerunners to a new



way. The intensity is on the rise with a need of approaches to non-proliferation of arms and unnecessary wealth building and a growing recognition of a rise of parallel economies in the Asia Pacific.

The understanding

The understanding of historical evolution of India in her seven phases is the epitome of the historical evolution of humanity itself. What is more important is the root understanding. It is the understanding of the Indian schemata – the *urdhamulamaddha-sakham* – The Speaking Tree, where the hierarchy of her evolution is an involution. At the root of India's national heritage stands the wisdom of the great Vedic Seers – her spirituality – her realizations of the truth which are universal flow of the impersonal.

Conclusions: an Emergence of 'The Green Order'

In the current ascents and return of humanity, spirituality is the final goal. Spirituality is seen as a harmonious relationship of human mind and nature. A poet had recently realized that 'spirituality is seen not as a distant abstruse truth but as the innermost truth of existence'. In the words of that great poetic mind Rabindranath Tagore, we hear the hopes of that return:

'I believe in a spiritual world – not as anything separate from this world – but as its innermost truth. With the breath we draw we must always feel this truth that we are living in God. Born in this great world, full of the mystery of the infinite, we cannot accept our existence as a momentary outburst of chance, drifting on the current of matter towards an eternal nowhere.'

Let us therefore believe in a spiritual world – not as anything separate from this world – but as its innermost truth. It is the message of India and this is the final intent forwarded by her historic evolution. The wonderful work carried out by the scholars of the Indian Institute of Technology Kharagpur is a living initiator of the very intent.

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- ¹⁰ Complete works of Swami Vivekananda: 'The Future of India'.
- ¹¹ Complete Works (1963), page 195 and page 511-512, Volume 2.
- ¹² This is taken from Swami Vivekananda's work on 'The Future of India', Vol 3 (1989).
- ¹⁶ A holistic idea of global warming and consequential degeneration of world weather explaining a holistic approach to earth's thermodynamic balance covering nature, ecology and human settlement patterns
- ¹⁷ Idea developed by Nobel Laureate Ilya Prigogine in Chemistry of Nature

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