

**Exploring
the pattern and ideogram of**

SWASTIKA

**A universal principle
of sustainability**



SANDHI

THE SCIENCE & HERITAGE INITIATIVE
INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR



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योग: कर्मसु कोशलम्

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“ Returning is the motion of the Tao and going far means returning. The idea is that all developments in nature, those in the physical world as well as those of human situations, show cyclic patterns of coming and going, of expansion and contraction. ”

– Lao Tzu



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 livability 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:

- Two language based projects
- Two music projects and
- 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 or the code that is soft (*sabda*) and its meaning or cognition/ recognition pattern/ the value or the hard worth (*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 second team of brilliant minds. They are a collation of summer interns of the year 2016. They are from IIT Kharagpur, NIT Rourkella, NIT Calicut, SPA Bhopal, SPA Delhi, CEPT Ahmedabad, Jadavpur University and other IITs. The book presents 9 explorations, which 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 on perhaps the most ancient and interconnected of all symbols that have interconnected the global culture, religions, sciences and civilization as a whole. We call it Swastika.

Swastika: an ancient yet universal principle of sustainability

Nine explorations on the global advent of Swastika has been attempted by the summer Interns. Augmenting the explorations, the Technology Student Gymkhana SandHI Cell has added its own thought about Swastika and the explanation that make both sides of SandHI evident i.e., Science and Heritage. The team has presented a synopsis entitled 'Exploring the pattern and ideogram of Swastika'. The synopsis gravitates on a deep interrelationship between the wings of Vedas (*Vedanga*) and Swastika.

Vedanga and Swastika

The Vedas have interpreted Swastika as the tangible imprint of cosmological uniformity that transmits perfect balance and harmony when applied to the cognitive and tangible spheres of the human-environment paradigm. The ethereal concepts of time-cycle (*kala chakra*), when viewed through a framework of the Vedic calendar year is denoted by the stable centre of the Swastika – the seat of Kartikeya, the lord of the four cardinal directions. In the wheel of life, Kumar/Scanda/Su-brahmanyam Swami, as he is widely known among the galaxy of Sages is both Visakh (at *Vaisakhi*) and Kartik (at *Krittika*), based on the seasonal and cosmological iterations of spring and autumn, as said an ancient Chinese Philosopher.

The right and left arms of the Swastika showing the East and West directions have a north-south bound movement. The arms to the due North and the due South are represented by astral location of *Bhadra* (north) and *Phalgun* (south), the only two stars possessing east-west bound disposition. On the astronomical foundation, the relative seasonal position of the *Saptarshi* (Big Dipper) centered on the Pole star takes the image of Swastika.

Swastika - a key to a sustainable dynamics of human-environment matrix

In the future, a detailed rendition on Swastika can be best attempted if it is based on the elucidation of the Vedas by the six wings (*anga*) of the *Vedanga*, namely:

1. *Shiksha* (Constructs of communication based on phonology and phonetics – *sabda* and *artha*)
2. *Chhanda* (Rhythms of prosody and composition balancing involution and evolution)
3. *Vyakarana* (Grammar and syntax of outward language systems – *para*, *pasyanti*, *madhyama*, *Vaikhari* and *Varnamala*)
4. *Nirukta* (Etymology of syllables and word-formation)
5. *Kalpa* (Evolution of rituals, performances and oblations based on location in space and time) and
6. *Jyotisha* (positions, numbers and astral cardinals of aspirant's standing based on cosmic interconnectedness and law of causation).

Swastika is an integral pattern-ideogram that builds the whole schema of human evolution as realized by the Vedic Seers in form of an episteme of the *Vedanga*. It perhaps forwards the very foundation of all modern sciences, made evident in the epilogue of the book.

A global exploration of the Swastika in the different world cultures can uniquely trace a hidden working pattern across human cultures and civilizational matrix. That working of the Swastika can be in all the levels from the deep abstractions of cosmology and ecology, which are only open to a contemplative introspective mind. The present attempt is to explore the tangible forms of Swastika in ritual and built environmental setup that is open to rational inquiry, logic, measurements and concretization. The present book has just initiated the attempt.



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'



July 2016

Tribute

नासतः सत् जायते —
*Existence cannot be produced by
non-existence.*

“

*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 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.*

”

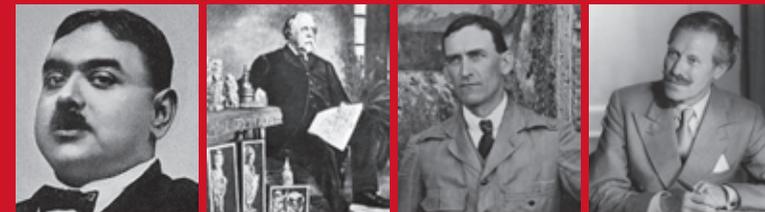
Swami Vivekananda
HISTORICAL EVOLUTION OF INDIA



Vedic Swastika portrayed as a Seal in the Indus Valley Civilization (2700 BCE)

In 1856, General Alexander Cunningham, later Director General of the Archaeological Survey of north western India, left for the Indus valley to coordinate and reorganize the expansion of the Indian railways due to inexplicable revelation of artefacts, relics and potteries extracted by villagers from a vast area in the river valley. Soon two teams led by John Hubert Marshall and an Indian archaeologist Rakhaldas Bandyopadhyay and the other by Robert Mortimer Wheeler paved the ways and means to rewrite the story of Indian civilization by a few thousand years predating Plato, the Budhha and the Christ. Surpassing Mohenjodaro and other lost cities, the discoveries of Mergarh I and II today have pushed back the Indus valley chronology to 8000 BCE. More are expected to emerge in the near future.

One pattern evident among the many thousand seals of the ancient Indus valley was the archetyp depiction of Cosmic and natural order – the Swastika. Recurring also in the Vedic literature, the presence of this ideogram amidst the Indus valley has raised significant questions of positioning the Vedic lore, at least as a legacy of understanding and deep knowledge system prior to the Indus valley. The book is a humble tribute to these four souls and many others who fostered the great discovery.



The Modern Architects of Indian History and Archaeology
Rakhaldas Bandyopadhyay; Alexander Cunningham; John Marshall; and Robert Mortimer Wheeler

Prologue

Philanthropy as a concept transcends the time warps of era and interestingly blends into the ancient and modern constructs of humanity. It is so fascinating to realise how the word Philanthropy is so deeply rooted as a part of the historical facet in the formation of modern society, upon which society thrives. Though the philanthropists till date expend for the betterment of humanity for the nourishment, development and enhancement of what it means to be human. Explorations, such as these; that may uplift the human development, seeking the deeper truth of past human civilizations; have been termed as etymological studies. Perhaps, all these explorations have been a continuation of the Platonic Academy and its teaching of *Philanthropos*, which is *Philos* meaning 'to love' & *Anthropos* meaning 'human being'.

One such find, out of multiple others is the 'Swastika'. The Swastika, as a symbol, has bewildered and amazed researchers and scholars world over. The multiplicity of the symbol world over, indeed makes it a thought-provoking subject. Thomas Wilson, curator of the U.S National Museum (A Smithsonian Institution) published 'The Swastika' in 1896. The paper was a collation of various symbolic manifestations of Swastika across the globe found during that period and earlier. The sources for the paper were the author's findings through various books, published papers, and journeys. The following compilation draws inferences from similar sources as 'The Swastika'. Moreover, the study attempts to collate them with scientific aspects of the modern day, which were perhaps present during that ancient period too but were not acknowledged.

Swastika is defined by the penguin dictionary of archeology as 'a cross in which the arms are bent at a right angle in the same relative direction'. Swastika probably was the first ideogram to be made with a definite intention and a consecutive meaning, the knowledge of which was passed from person to person, tribe to tribe, dynasty to dynasty and eventually from nation to nation maintaining a continuum and ultimately encircling the globe. Swastika is the manifestation of same ultimate reality, interwoven by the natural forces based on the concept of dynamism/change. We are living in the universe which have dynamic interconnections and acts like an alive cosmic waves. Hence it is an ethical responsibility while perceiving 'Swastika' to understand its association with law of nature and its beauty of evolution. Rather deflecting towards negative variables originated from malicious intent which only leads to the severe damage to human kind.

The Vedas, the earliest and most important textual records also have a mention of various forms of Swastika. In the end of the first mandalas first Aṣṭakas, Shukta 1.89.6 (Rig Veda) gives a brief introduction of Swastika in the cosmos, with the higher level of Indra, Pusha, Tarksya and Brihaspati at the macrocosmic level and seeking their blessing is the man at microcosmic level. Lusha Dhanaka Rishi explains the various manifestations of the Swastika in the 10:35 and 36 Suktas of Rig Veda. During the long period over which the vedas were composed, the creators of vedas came up with the concept of Brahmana. Brahman, which become central core thought of the Vastu Shatras, the 'science of architecture', is a traditional Hindu system of architecture. So if

Brahman was the 'motive power' behind existence, the 'essence of existence' was identified as the Purusha which in turn is known as the Vastu Purusha in the Vastu Purush mandala.

<p>ॐ भद्रं कर्मिभिः शृणुयाम देवाः ॥ भद्रं पश्येमाक्षभिर्यजत्राः ॥ स्थिरैरङ्गैस्तुष्टुवाग्मस्तनुभिः ॥ व्यज्रेम देवहितं यदायुः ॥ स्वस्ति न इन्द्रो वृद्धश्रवाः ॥ स्वस्ति नः पूषा विश्ववेदाः ॥ स्वस्ति नस्तार्क्ष्या अरिष्टनेमिः ॥ स्वस्ति नो बृहस्पतिर्दधातु ॥ ॐ शान्तिः शान्तिः शान्तिः ॥</p>	<p>Translation: <i>Illustrious far and wide, May Indra prosper us: may Pūsan prosper us, the Master of all wealth.</i> <i>May Tārksya with uninjured fellies prosper us: Brhaspati vouchsafe to us prosperity. (Rig Veda 1.89.6) (Translation by- Ralph T.H. Griffith, 1896)</i></p>
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The diagram is square because the earth, to which the *Purusha* is to be bound, is four cornered in the supreme reality behind appearances where it is clasped by the heavens, the points of contact manifest in the rising of the sun and moon, balanced by the poles. The figure defining man in perfect measure was also seen to be square (compare Vitruvius, Book iv.i) The navel of *Prajapati*, in the centre of the square, is surrounded by the deified aspects of the sun and moon whose movement is symbolized by the Swastika and whose divergent courses reconciled in the embrace of *Rahu* (the eclipse), the recurrent cosmic sexual act from which existence is reborn, symbolized by the gaping leonine monster *Kirtimukha*. *Varuna* and *Indra* reappear with *Kubera* (Productivity) and *Yama* (death) as *lokapalas* (Guardians of the four cardinal directions- west, east, south and north respectively) (Tadgell, 2008).



Vastu Purusha, various forms of swastikas observed around the world and the Vitruvian man

The end result that is intended shall seek the fact whether the spatial and temporal changes thus studied in the realm of Swastika has been synchronized with the factors of Space, Time period, Genre, Swastika into a probabilistic attribute rather than a deterministic parameter in the history of human civilization by using the methodology in this research leading us to even further and deeper trait-based. The unrevealed intention is also to create deterministic parameter in the history of human civilization by using the methodology in this research leading us to even further and deeper trait-based analysis, making the present study a mere base for its work.

Exploring the pattern and ideogram of Swastika

A Synopsis

Polynesia



The Polynesians migrated from India and Southeast Asia some two or three thousand years ago, and spread to all the islands of the Pacific through the great triangle that stretches from Hawaii, New Zealand to Easter Island. The four armed sacred symbol has embraced the life of Polynesians since aeons. The Maori tribes of New Zealand and Easter Islands are highly respected and considered as holy people who perform occult tattoo designs representing Swastika forms till present times. The Swastika model in rotational stylization represents the four corners of the earth and sometimes the 'nga hau e wha' – meaning 'four winds'. A typical Maori symbol features the essence of Vedic mandala bordered by an eight pointed star and the Swastika symbol at its centre. The Polynesian mattang is a compass that follows the basic principles of Swastika. The sailors used the devise to locate astral positions, cloud formations and flights of birds to navigate over large expanses of Open Ocean.

Indonesia



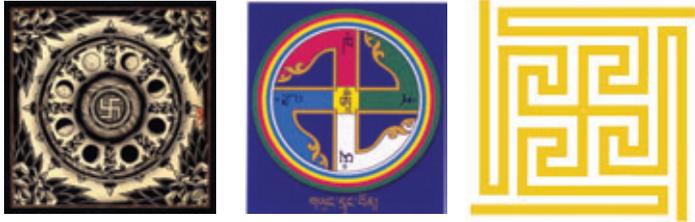
Indonesia has long been the extended South-east Asian civilization of India, culturally and spiritually, where the temple of Borobudur and Prambanan are represented as the cosmic form of Mandala both as the representation of Buddhism and Hinduism respectively. In a wider sense Swastika is the representation of the wheel symbolism i.e. 'the wheel of the sun', the Mandala concept in Hinduism and the *Dharmachakra Pravartana* concept of Buddhism. And in this regard the Mandala form of Borobudur and Prambanan symbolize the four quadrilateral directions along with the circle of life where one has to complete the whole circumambulation of the temple in order to attain Nirvana. The ritualistic meaning of Swastika in form of cardinal earth chakras is used in the world purification Centre of Bali, where the Rainbow Serpent and the Plumed Serpent meet to form a zigzag pattern of Swastika. In Bali the sacred sites like Gunung Agung, Gunung Batur, Gunung Batakau, and Gunung Ingas mountains are considered as the World Purification Centers. Today Swastika pervades their cultural milieu by being depicted on the outer walls of houses, gravestones and even in many commercial objects in Southeast Asian countries.

China



In China one finds the earliest depiction of Swastika representing the path of a comet. The discovery in the Mawangdui Excavation of the Western Han province reveals a nobleman's tomb (150-200 BCE) where the Swastika has been interpreted as a comet. As per Carl Sagan's theory, the comet Atlas has a shape like Swastika and relates to the astrological (*Jyotish*) interpretations of appearing in spring (implying good harvest), summer (suggesting drought), autumn (suggesting flood) and winter (implying small battles). In China, the form of quadrilateral or the triskelion serves ritualistic use on the funeral urns of the Banpo (7th century BCE) and Majiayao (3rd century BCE) Neolithic sites. The Swastika also represents the religious symbolisms of Guiyidao and Falun Gong. The epigraphic form of Swastika can be seen in Chinese scripts in varied forms such as character (pinyin: wàn), Unicode encodings like U+534D 卍 (left-facing) and U+5350 卐 (right-facing). The sacred symbol is also mentioned in the Sutras like Flower Garland Sutra (*Avatamsaka* or the sutra of interpenetration [*Tungata*] of two triangles) and Lotus Flower Sutra (*Sadharna Pundarika*) of the Mahayana form of Buddhism.

The Himalayan Civilization: India and Tibet



The etymology (nirukta) of the word Swastika rests in the meaning 'well being' in Sanskrit language. The Vedic hymns have repeatedly used 'swasti' to denote blessing, benediction, success, fortune and the like. Stability or completeness is the very essence of Swastika. The epigraphic form in Vedic hymns and the graphic form in Indus Valley seals are the earliest recorded swastikas in India. The epic of Ramayana mentions the symbol embossed in the boat that ferried Lord Rama while the Mahabharata describes the *Chakra-Vyuha* or the Swastika maze as the perfect arrangement of artillery in the war field of Kurukshetra. Swastika, the prominent Jaina symbol continued as a central theme in the aniconic and the iconic phases of Buddhism and coinages of ancient India. Most rituals (*kalpa*), astrological and astronomical observations (*gyotish*) initiates in the auspices of the sacred symbol. Hence, we find the occurrence of the symbol to denote perfect balance and fulfilment ranging from the subtle metaphysical and spiritual domains to the more tangible grounds of rituals, trade and warfare.

Tibet, a near neighbor of India shows a strong affinity for the sacred symbol. Yungdrung, the Tibetan name for Swastika is a quintessential symbol of the Bon religious faith. The counter-clockwise Swastika guides the direction for circumambulation paths around holy mountains, shrines and turning of the prayer wheels. The Buddhist Chos tradition and Bon religion, both take the worldview of the reverse motion of Swastika as it represents the counter-clockwise movement of the astral bodies. The Swastika, the *Nandyavarta* (a Swastika like labyrinth form) and Sauwastika are the first, third and fourth sacred signs on the Buddha footprint which are used to develop architectural designs based on cosmic plan.

Mesopotamia



The Swastika appears only very rarely in the archaeology of ancient Mesopotamia. It is found mostly on prehistoric pottery, of which the Samarra bowl is the oldest known example, and on a number of early seal impressions. However, with time the direct imprint of the quadrangular ideogram disappears from the record for the remainder of the Near Eastern Bronze Age.

The Samarra culture is a Chalcolithic archaeological culture of 5500–4800 BCE, overlapping partially with Hassuna and early Ubaid. On the whole, the Ubaid period (ca. 6500 to 3800 BCE) is a prehistoric period of Mesopotamia and it is perhaps the source of its first consolidation, the Sumerians, who were non-Semitic speakers and bore a language that was closer to the overall Sumero-Akkadian tree of language syntax bearing a large resemblance with Elam (Persia) and Dravidian India. The cross-cultural availability of seals between ancient Sumer (Kish) and Indus Valley validate enough relationship with the story of Sumerians trading with a distant land of Meluha (perhaps synergic with Malay Hills/ Malabar/ Western Ghats of India).

However, the quadrangular tradition re-surfaced in later Mesopotamian art and subsequent Biblical tradition in form of the Garden of Eden (bearing some distant association with the pagan demi-God Adonis). From the Garden of Pasargadae to later gardens evident in the Near eastern and Semitic traditions, the ideogram of the Cross and the Chahar (four square) Bagh (Garden or the word of God) reigned till the day the Humayun's Tomb and Taj mahal were recreated by Mongols (Mughals) in India.

Abyssinia- Alexandria- Atlas Mountains



The stretch from the south of the Iberian Peninsula separated by the Strait of Gibraltar to the ancient Carthage, the Phoenician colony grew along the northern Africa bordered by the Atlas Mountains almost 1000 years prior to Christianity. The etymology of the Carthaginian deity *Tanit* goes back to the Phoenician city states of Tyre, Sidon, Gebal on the eastern shores of the Mediterranean. The origin can be further tracked down to ancient India. The Rig Vedas and later the Mahabharata mention the Panch (Phoenicians) as the leading sea-faring tribes of the East. *Tanit*, meaning 'serpent lady' is the mother goddess of fertility. Carved in stones, the symbol is very similar to the Swastika, particularly the ones used in the Eastern parts of India. The *Tanit* appears as a trapezium closed by a horizontal line at the top and surmounted in the middle by a circle. The trapezium is sometimes replaced by an isosceles triangle. The divine symbol is interpreted as the symbol of supreme feminine creative principle corresponding to the '*shakti yantram*' in India. The *Tanit* also resembles the *ankh* (sacred eye) held by the Egyptian deity Isis, the goddess of fertility, life, cosmic magic and good fortune similar in many respects to Shakti in India. The symbol of *Tanit* (akin to *Tantu* in Sanskrit meaning loom, weaving and tapestry) bears the array/mattress/matrix of creation, the intermediary *Ankh* of Egypt and finally the symbol of woman today.

The Celtic (Chaldean) - Caledonian Culture



The proto Celtic phase in Europe perhaps dates back to around 1800 BCE or before synchronizing with the Etruscans. The typical Celtic features first recorded in the Hallstatt culture (c. 800-480 BCE) in the late Bronze Age gradually spread across Central Europe, Britain and Galicia. The prevalence of triskelion or triskele- the three spirals, represents balance and harmony in the flow of life and seasonal cycles. Often thought to be of Celtic origin, the symbol was in fact, carved at least 2000 years before the first Celts resided in Ireland. The western scholars have identified triskeles as swastikas in continuous motion signaling uninterrupted generation, continuity and recurrence of life. The Icelandic sagas attest the symbols on the blessing hammer of Thor, the God of Thunder. The Vikings of Scandinavia regularly used the Swastika as a sacred omen and as a pagan symbol of sun worship. In the Baltic region the Perkons or the Perkuna is a manifestation of Swastika



associated with the Thunder God. In Greece, both triskelion and Swastika are encountered from the early Mycenaean vessels (1600 BCE), the vases and coins of 8th to 6th century BCE to the classical images of the head of Medusa. The Italian 'Camunian rose' of 7th -6th century BCE is a model of four sided winding Swastika bearing nine cup marks. The Vedic-Celtic association goes further than the similarities between triskele and Swastika. The etymological, linguistic and mythological semblances indicate a deep-rooted legacy of the the triple (triangular creative) foundation of the Swastika traceable from Celtic imagery to the nave of the *Dhamma* Wheel.

Iberian Basque Peninsula



The Iberian Peninsula includes the countries of Spain, Portugal, Andorra and the United Kingdom outpost of Gibraltar. The cosmology grafted in the 6000 BCE old astronomical observatory of Almendres Cromlech is an early Neolithic (Basque) site that reveals the impression of concentric circles, spirals and cup marks – the essential elements of the traditional Swastika symbol. The important derivative is the Basque '*Lauburu*' (akin to Latin *labarum* or Cretan Axe/ Libra or Torque balance) covering also the Celtic Galicians and the Austurians. The Swastika as a powerful cosmological and astral symbol has been evidenced in the petroglyphs of Galicia and the hill forts of Portugal along a temporal continuum from the Iron age (c. 8th century BCE) until the Roman times (c. 1st century BCE). The sacred motif has been significantly used in the ritualistic activities as in the votive stellas, gravestones and funerary urns. The regular application of Swastika as an apotropaic symbol denoting the power to avert evil influences or bad luck features in the artefacts of daily usages like the wheel (*Lauburu*), rosettes; defensive weapons of swords, shields, belt buckles; and in architectural designs such as door hinges and motifs on the walls of public baths.

The Americas



The North American Indian cultures settled during the glacial period when the Eurasian corridor of Bering Strait was an active corridor of migration. The Mississippi Mound Builders, the Navajo and the Hopi tribes of Ohio, Arizona, Utah and New Mexico had an intimate association with the Swastika formation in all facets of life. Navajo cosmology was a four directional awareness that perpetuated all aspects of the Vedic *Kalachakra* as symbolized by the Swastika –the guardian of the cardinal directions. The Mississippi Mound culture revered the animistic stylization of the sacred symbol as the division of order between the Underworld, the Earth and the Heaven. The metaphysical worldview had firmly shaped the human ways of life as observed in the imprints of Swastika motif on the ritualistic artefacts in burial sites, Navajo sand paintings, ceremonial rattles and woven garments.

The Meso-American culture broadly comprising the Olmecs, Mayans and the Aztecs, as old as 7000 BCE, flourished in the Gulf of Mexico and southward across the Isthmus of Tehuantepec. In the Aztec mythology, the Supreme Being sits in the middle of cosmic canoe representing the Milky Way. With His outstretched arms the creator produces a greater cross that can be related to cardinal axes of Solar System Zodiac (SZ) and the crosses in his arms represent the axes of Tropical Zodiac (TZ), thus representing the primordial Swastika. The idea of great celestial conjunction, represented through the symbol of 'Galactic Butterfly' reflects the esoteric idea of cosmogony, which also presents the 'Mesoamerican' analogue of the ancient Swastika. The Swastika frequently appears with the mythical serpent Kukulcan/Quetzalcoatl of the Mayan calendar and as sacred spiral tattoos on human head and artefacts. The underlying continuity of a Cosmic Cyclic pattern from the Mongoloid-Tatar Kalachakra to the movements of the Galactic Butterfly via the Mayan quadrantile is a powerful evidence of the pre-historic migration across Kamchatka peninsula.

‘The world's rotation seen from one or other of the poles’

R. Guenon
Penguin Dictionary of Symbols

The celestial positions of the Seven Sages (Ursa Majoris or the Great Bear) are eternally revolving with an objective of establishing complete truth, consciousness and beatitude around the highest and fixed heaven - “*Tad Vishnu param padam*” (Polaris or The Dhruvapadam) [Rig Veda: 10.82.1-2; *Srimad Bhagabatam*: 5.22.17].



The revolution (dynamics) around the highest fixed point (statics) has been conceived in four cardinal quadrants meaning - a) the involution of the universal manifest of the Vast (the macrocosm) from That infinite backdrop; b) the further evolution and extension (path of *Tantra*) of the individual consciousness within it (the microcosm) which is *Aristonemy* ; c) the return of the individual to that vast (the path of *Yoga*), which is *Indra*; and d) the re-establishment, fostering (*Pusha*) and complete resurrection of the Individual as The Lord of the Vast (*Vrihaspati*) and beyond to That infinite for generating the next cycle or *Kalpa*.

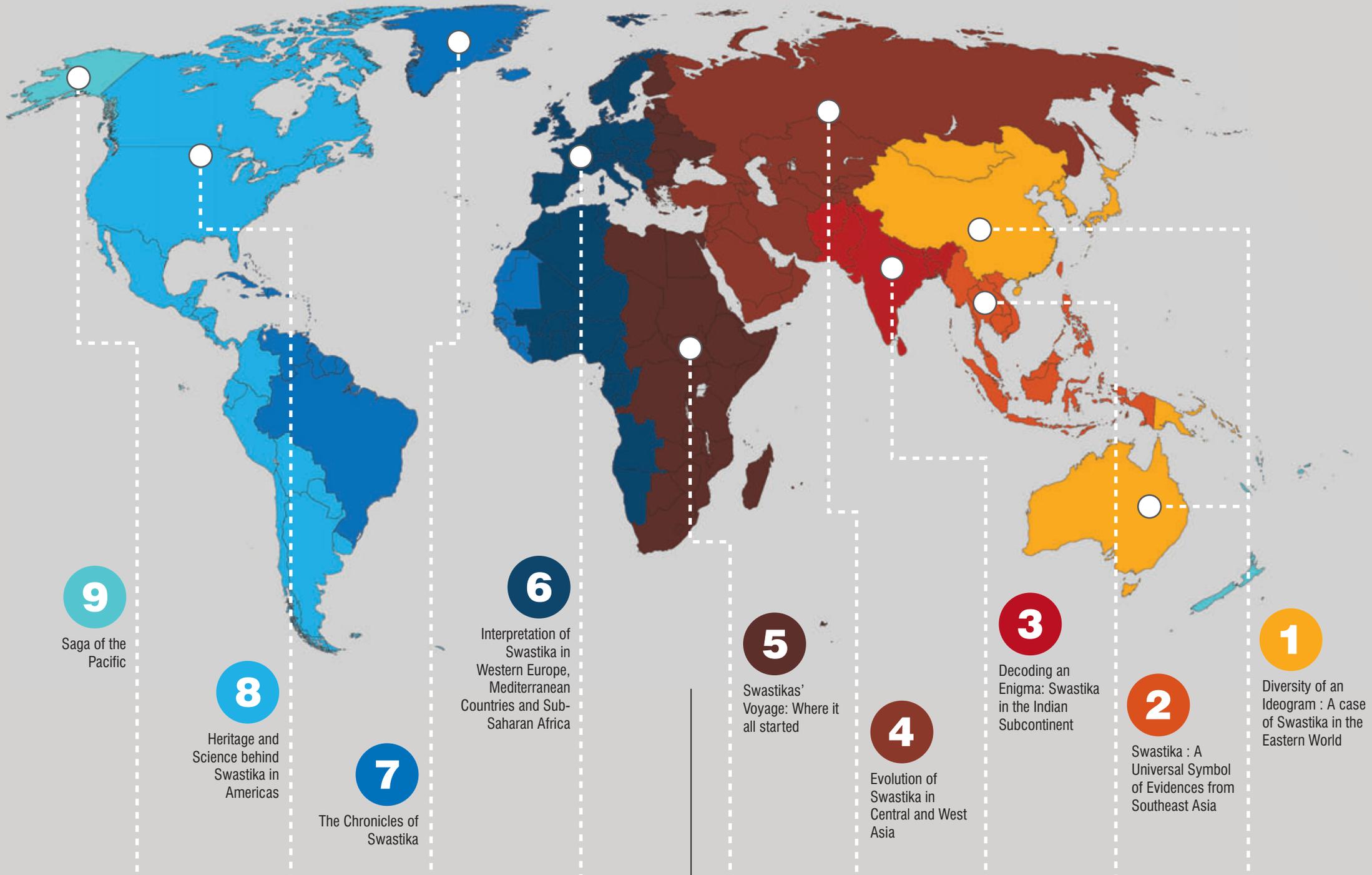
Thus the Soul becomes triple founded - individual, universal and the Absolute transcendental.

The idea takes the form of the four seasons - autumn, winter, spring and summer. The universal pattern as coded in the Vedic mantras and decoded as realisation (*dharana*) by the *Mantradrasta* or the *Rishis* is Swastika.

ॐ भद्रं कर्णेभिः शृणुयाम देवाः ॥ भद्रं पश्येमाक्षभिर्यजत्राः ॥
 स्थिरैरङ्गैस्सुहृत्वाग्मस्तनूभिः ॥ व्यजेम देवदितं यदायुः ॥
 स्वस्ति न इन्द्रो वृद्धश्रवाः ॥ स्वस्ति नः पूषा विश्ववेदाः ॥
 स्वस्ति नस्तार्क्ष्यो अरिष्टनेमिः ॥ स्वस्ति नो बृहस्पतिर्दधातु ॥
 ॐ शान्तिः शान्तिः शान्तिः ॥

The Rig Veda: 1.89.6

Both the Ukraine_mezine Swastika and Indus Valley Swastika perhaps have had originated from the aforesaid celestial pattern of Vedic epistemology.



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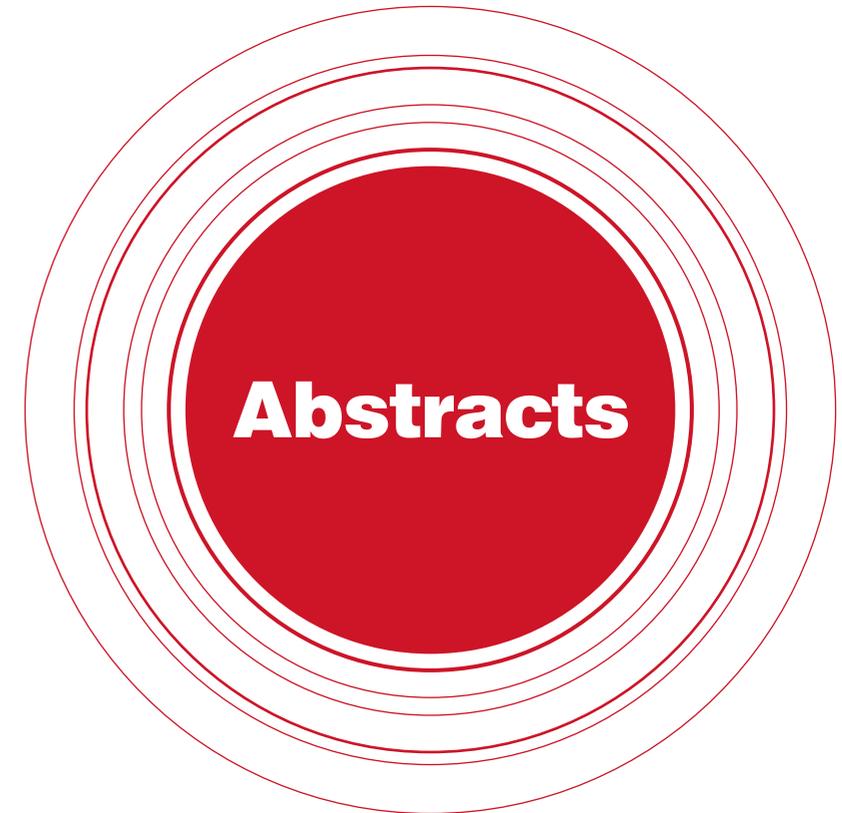
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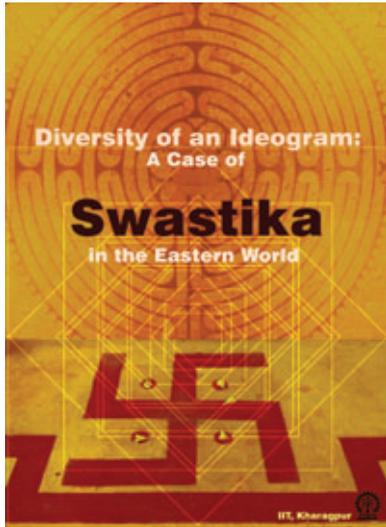
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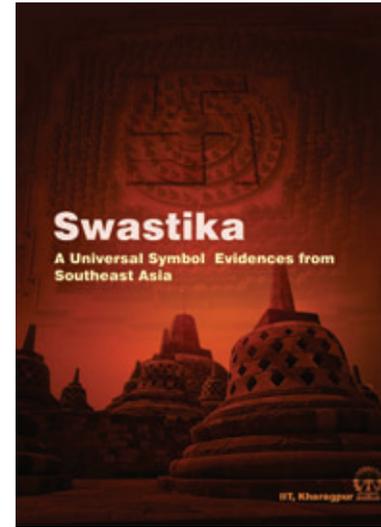




1

Diversity of an ideogram: A Case of Swastika in the Eastern World

Swastika, being a symbol of auspiciousness was always one of its derivative expressions. The irony of history is that in spite of being a positive word in most of the countries, it acquired a negative meaning in the last century due to some developments in Europe. The purpose of this section is to find out the different meanings and interpretations of Swastika in the Eastern World or Austronesia to be specific. However, the evidences of Swastika seen in this region have been embedded in the culture of each country in a very different way. As a matter of fact many important events of history have also created an impact to find direct evidences of it in each of these countries, majorly being the influence of Buddhism and Nazism. If the paths of these two movements are tried to be traced, a network can be found linking all these countries in this particular region. Moreover, this availability of the evidences in a particular spatial location also has scientific explanations asserting that even centuries ago, unknowingly science was important to mankind. Not only that, with the help of this research, one will come to know that how an auspicious symbol in various regions can be associated with the everyday life of the people and also dealing with a rational approach. A strong link, therefore, tends to get established between the scientific and cultural parameters, showing the cohesion and proving the fact that neither culture nor science can exist independently.

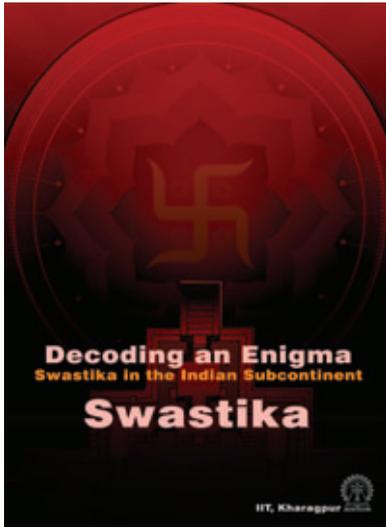


2

Swastika: A Universal symbol Evidences from Southeast Asia

Symbols have been used by humankind to express and preserve ideas, operations, and relations. These symbols at different parts of the world have different meaning associated to them. These can be classified broadly on two parameters, namely, scientific and cultural. One such symbol is the Swastika. The Swastika, irrespective of its place of origin, can be found almost everywhere around the globe. It has reached a status of universality like the symbol of Lotus flower. Many studies have tracked its origin and appearances throughout the world, but the region of Southeast Asia is often left untouched. This section focuses on finding Swastika and similar symbols for the region of Southeast Asia which includes the countries Burma, Cambodia, Laos, Vietnam, Thailand, Malaysia, Indonesia, and Philippines. As the tools to approach the ideogram, cave paintings, architecture, and artefacts were chosen, as these areas usually contain symbols which are prominent to their surroundings. Further, this section is divided into sub sections, which traces Swastika according to time and space. This section also tries to consolidate and arrange all the evidences found for the symbol, which hasn't been done for this region before. This section also tries to shed some light for the connection between science and heritage parameters via the symbol of Swastika. Explanations for the evidences are explained not in a deterministic but in a probabilistic way. Swastika is also found in the form of mandala in architecture and planning processes, and banji in textiles. Various routes (trade and religion) through which the Swastika has travelled into this region are also explained. The universality of Swastika is valid in this region and it is generally used for the depiction of Buddhist and Vedic ideologies.



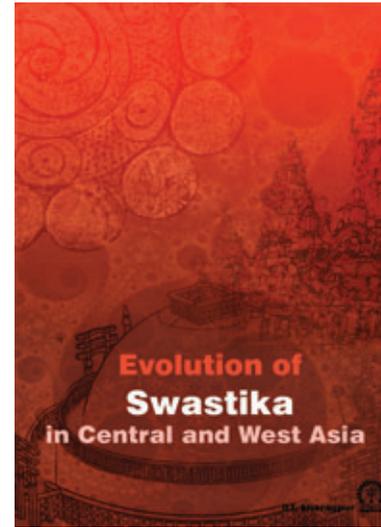


3

Decoding an Enigma: Swastika in the Indian Subcontinent



Swastika, a living paradox, has several interpretations and manifests auspiciousness, prosperity, good fortune, the sun, cycle of life, and so forth. The symbol has auspicious as well as decorative values. Various opinions prevail regarding its origin, functions, meaning, and elucidations. In Indian sub-continent it can be traced from pre-historic, Indus Valley, and Saraswati civilization till the present times. The symbol has imprinted its significant place in almost every ancient Indian design and communication like *dakshinavarta*, *svastika*, *tetraskelion*, etc. It occupies all possible sites of expression in the material culture including sculptures, pottery, coins, etc. This section is an attempt to classify and describe the Swastika symbol as found in the remains of different dynasties over various time intervals in the present Indian subcontinent. This zone is of prime importance, in context of application and proliferation of Swastika, as it is the land of diversity depicting almost every trait of human civilisation. Besides the direct exemplification, the research highlights its depiction combined with other related symbols like *Srivatsa*, twin fish, lotus, wheel, *Stupa*, tree, Star of David, Serpentine Goddess (*Kundalini*), *Nataraja*, Charbagh, Ashoka's Pillar, etc. The exploration tries to consolidate that the reason for sustenance of Swastika over the centuries is not only cultural but also has scientific dimensions. The study also attempts to break the orthodox belief system confined to religious domain and reaffirms the universal concept of humanity and spirituality.

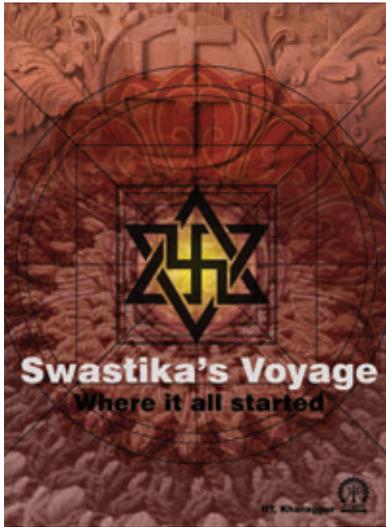


4

Evolution of Swastika in Central and West Asia

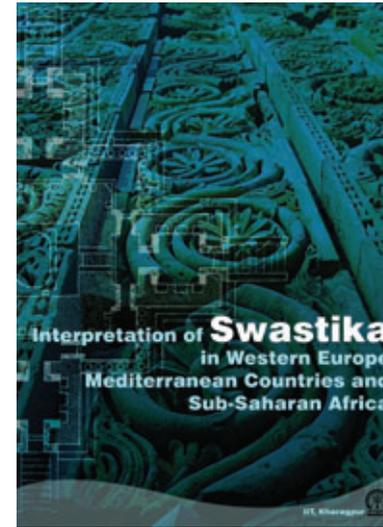


The Swastika is an ancient symbol that was found in use in different civilizations in almost all parts of the world from the very beginning of human civilization. This section deals with the evolution of Swastika in central and west Asian countries comprising of Russia, Georgia, Armenia, Turkey, Cyprus, Syria, Jordan, Lebanon, Iraq, Saudi Arabia, Yemen, Oman, Iran, Turkmenistan, Uzbekistan and Kazakhstan. The origin of the Swastika is debatable as it is precisely not known to us. However the study of archeological findings has helped us to determine the timeline and the region where the Swastika symbol was utilized. It also becomes evident from the study that human migration had led to the transference of the Swastika to other places and as such is also responsible for the varied usage and interpretation of the symbol. The timeline for the evolution of Swastika is developed based on the study of migration of major races in the designated areas. Since time immemorial the migrants had settled which over time had spread into an empire and likewise had undergone changes in boundaries. These phenomena had made it susceptible to multiple layers of history. Migration of races, namely the Sumerians and lastly ending with the Russian invasion, had played a very important role in carrying forward the utility and message contained within the Swastika. In some regions at a particular timeline when the Swastika had helped the inhabitants to ascertain seasonal changes and cosmological findings, the same symbol had emerged as a sign for regeneration and life cycle, at another space and time. While one would find the symbol used as an auspicious sign and marked on relics, in another case it was utilized as a pattern to adorn cornices, walls and floors of mosques, churches, tombs, etc. The findings highlighted in this section will help to establish the connection between the regions in terms of beliefs, activities and identity of humankind.



5 Swastika's Voyage: Where it all started

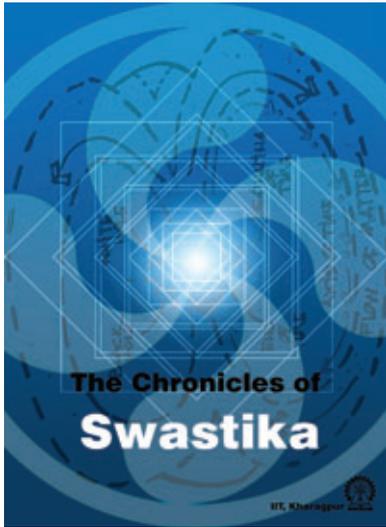
The journey of Swastika from its origin to today's world is filled with mysteries and broken links of evidences spread over different ages of civilization. This section discusses about the occurrence of Swastika in the study region encompassing the Baltic States, East Slavic states, the Balkans, and Eastern Africa. Each of these regions has a different ethnographic and socio-cultural fabric. From the mystic north, the land of Finland, Estonia, Latvia, Lithuania where some of the oldest tribes set abode to down south to the Ukraine, Romania, Bulgaria, Cyprus and Hissarlik, this culturally diverse region yields some of the oldest examples of Swastika in exemplifying the beginning of an enigmatic geometry. The evidences found in the study raise numerous questions in the mind, how did Swastika come into existence, what was its significance to the people. The answers that we are looking for are hidden in the history of the region and the evidences. They tell us the origin of Swastika, its evolution and possible migration pattern linking it to the other parts of the world. This section strives to answer the conundrum related to Swastika regarding its origins- whether it is endogenous or exogenous to the study area. The linkage of spiritual and cultural parameters with scientific phenomenon is the key objective of the research. These cultural parameters and scientific parameters are arranged in a form of a consolidated matrix where the evidences are classified by the region they belong to. This matrix will give us a broader view on the answers that we are looking for.



6 Interpretation of Swastika in Western Europe, Mediterranean Countries and Sub-Saharan Africa

Although the most primitive Swastika (known as Fylfot in Western Europe) till date has been found in the Balkan region, which is modern day Ukraine, the dominant discourse states the spread of Swastika through a migration of the settlements pattern from this area through Asia Minor to the Mediterranean region and further to the West and North-West of Europe. Hence the first aspect of this section is an endeavour to establish the spread of Swastika as probable evidence to support this discourse. The study area is a longitudinal distribution of the globe which covers a varied historic background and diverse regional setting. The second aspect of this section also aims at the evolution of Swastika symbol over this varied spatio-temporal framework and how this symbol is embedded in the heritage and socio-cultural ideology of the people when seen through an overlay of scientific parameters. In other words, the plethora of evidences found in these regions has been arranged in the form of matrices with respect to the time period these date back to. Further, these region-wise matrices have laid the base for analysis of the evidences found from a scientific approach. Western Europe being largely affected by the atrocities of the World War II, the most recent perception of Swastika among the people completely negates the previous use of the symbol in cultural beliefs and rituals of well-being. Finally the contemporary approaches to revival and reuse of the Swastika symbol in Europe have also been addressed.

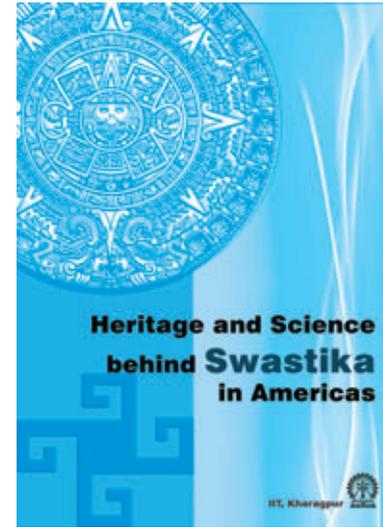




7

The chronicles of Swastika

Often during the study of Swastika's roots, it may be observed that a sequence of events or linkages have indiscriminately occurred around a wide range of timeline as well as across several civilizations, often involving geographic diversification too. Probably these coincidental events are manifestations of an enigmatic thread, which is: scientifically balanced, culturally measured and socially intended. There are some specific dimensions which are to be nurtured and analysed for the intended understanding of the Swastika under the methodology adopted for this section. The objective of the whole program is to establish connections between the relatively smaller paradigm of space and the broader paradigm of Swastika. A number of theories also support the movement of Swastika worldwide and connections to even what is beyond visible world. There will be a methodical probe into this aspect as well, but under the realm of this section's spatial extent, which are parts of: Latin America, Western Africa, Northern Europe and lost kingdom of Atlantis. The intended end result shall seek that whether or not, the spatial and temporal changes thus studied in the realm of Swastika, has been synchronised with the factors of Space, Time period, Genre, Embedment, *Epistemology*, *Ideograms* and *Numismatics*. The clandestine intention is also to create Swastika into a probabilistic attribute rather than a deterministic parameter in the history of human civilization by using the methodology in this research leading to even further and deeper trait-based analysis, making the present study a mere base for its work. Thus, Swastika might be a perfect example of how science and heritage has been in the realm of our existence in a coherent, harmonic and symbiotic manner.

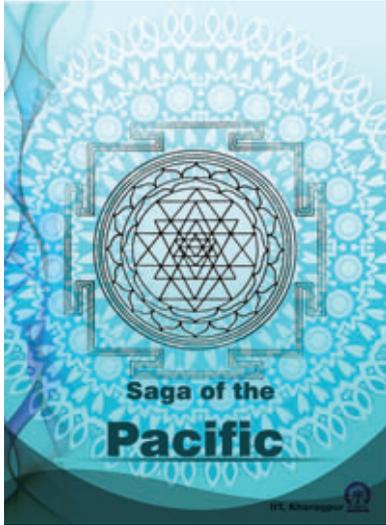


8

Heritage and Science behind Swastika in Americas

Swastika is a timeless symbol which has been present worldwide since 12000 BCE. This section gives a brief idea about presence and use of Swastika in the Americas. A timeline based on presence of Swastika in different cultures and civilizations at different time periods has been given for overview. A parametric approach has been taken for the study to arrive at relation between the cultural uses and scientific reasons behind them. An attempt has been made to understand the scientific reasons for various uses of the symbol and the variation/ relation in the beliefs of different cultures. The main cultures & civilizations for which study has been conducted in this section are Maya Civilization, Hopewell Culture, Hopi Culture, Navajo Culture, Aztec Culture, Inca Culture. The study of various aspects by the adapted methodology suggests that there were various scientific reasons behind use of the symbol. The symbol might have come into existence by tracing the pattern formed by Ursa Major around the pole star in various seasons of the year. The astrological reasons were the most important one and were common in most of the places. The common and similar beliefs in various civilizations suggest cultural exchange or continuity between various civilizations. The relation between scientific and cultural parameters suggests that there were scientific reasons behind the use and continuation of the symbol. The symbol has been used as a sign for positive energy, good luck, worship, war symbols, healing rituals, craft works etc. in this geographical region during different time periods. Despite of varying forms, use and beliefs, the concept behind the symbol remains the same, i.e. cyclic movement between phases.





9

The Saga of the Pacific



The meaning and the usage of the word 'Swastika' has been interpreted and reinterpreted across various countries but in the later period it has been recognized as 'Swastika' (In Sanskrit). In this section, the purpose of the research is to find the relevance of Swastika in the Pacific region based on the regions - Alaska, Hawaii, Fiji, French Polynesia, Easter Island, New Zealand and will also cover other regions that has a similar ethnic connection. The research was carried forward using secondary source. This portion is comparatively more active geographically as it lies on the Pacific Ring of Fire, hence, most of the evidences that could have been a major source of inspiration were either washed away or destroyed. However, a linkage has been established with the remaining evidences. In this research it has been noticed that Swastika is embedded in the culture of the natives of these regions and has been used as a symbol of good luck, welfare, prosperity or victory. These symbols have been used rationally to impart a scientific meaning as a way to show their connection to the Nature. Starting with the introduction and historical timeline of the settlements, the section will move towards the research methodology and framework. Finally it will focus on the evidences that has been noticed across these portions and will try to establish the relation of the evidences with Swastika.

1

Diversity of an Ideogram: A Case of

Swastika in the Eastern World

In every case this symbolism is one of aggregation, recurring in China, where the Swastika is the sign for the number ten thousand, which is the totality of beings and manifestations. It is also the earliest shape of the ideogram FANG denoting the four quarters of space. It might well be related, too, to the numbers of the LO-CHU, which in any case conjure up cyclical and gyratory motion.

The Penguin Dictionary
of Symbols

Diversity of an ideogram: A Case of Swastika in the Eastern World

Atul Kr. Kant¹, Naveen Nishant², Raja Singhai³, Shreyas. P. Bharule⁴, Sreenandini Banerjee⁵

Introduction

The word Swastika appears to have been derived from the Sanskrit language meaning 'well-being', 'existence of good' and has been ideogram of a positive sign in most of the countries across the globe. Though the region dealt with, in this section is in context to the Swastika and its grounding in the selected region of the Eastern world, the connotations of Swastika appear to be different in each of the countries, having different interpretations, meanings, and importance. Moreover, since the name by which Swastika is identified in the different countries changes with language, the iconographic manifestations of the same get altered too. The primary objective of the study is to understand the possible integration and coherence between the traditional value of Swastika, which remains embedded in culture and our lives, and the material or the scientific side of it.

Keeping the above objective in mind, there are six countries in which the evidences have been found and they attract in our interest. Starting right from the first country longitudinally Mongolia, China, Japan, Korea (including both North Korea and South Korea), Papua New Guinea and Australia have been looked into. The evidences thus found are studied and each of the evidence leads to an inference.

¹ Post graduate student at School of Infrastructure Design and Management, IIT Kharagpur

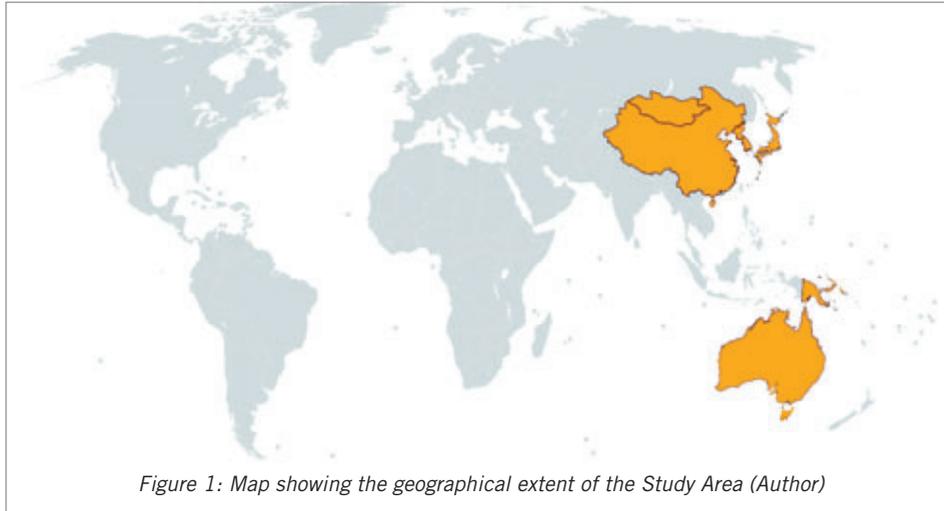
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⁴ Post graduate student at Department of Architecture & Regional Planning, IIT Kharagpur

⁵ Post graduate student of Urban and Regional Planning, CEPT University

The study helps in affirming a possible connection to the other parts of the world which is yet bewildering to the modern human.



Research Questions

Three questions arising in the beginning of the research after setting the objective are:

- The *first* question was that **where** the research is being carried out i.e. by defining its spatial entity. This means that how the Swastika has alterations in terms of its meaning and connotations according to the variations in space.
- The *second* question being the continuation of the first relates to the fact that exactly **what** are the evidences of Swastika that are found in a particular place.
- The *third* question adheres to the first two questions and gives the basis of this research by questioning the reason for finding evidences in a specific location. **Why** are the evidences of Swastika not uniformly found in all the places, is the final question.

Approach to the study

Components of research

After identifying the primary objective of this research there are certain points or guidelines which were to be kept in mind while carrying out this research. These points ultimately formed the components of this research. The basic and the very first component was that of the space i.e. the location of the country with its areal extent. The second component was that of the cultural parameters according to which the evidences of Swastika were being searched. In this world of realism and materialism, the existence of culture has to be related to some scientific meanings and reasons which actually form the third component of this research. Therefore a link must be established between these two categories of parameters for reaching the goal and objective of the research.

Conceptual framework

The basic methodology of this research is divided into various segments which include spatial features, historical background, migration, evidences of Swastika and the further categorisation of these evidences, and finally building a linkage between cultural and scientific parameters of Swastika.

- *Firstly*, the spatial features like terrain, geographical boundaries, and natural constraints were analysed which may have influenced the local tradition of the place.
- *Secondly*, the historical timeline was looked into, to note down the dynasties which ruled over the place at different periods. Here the cultural beliefs and thoughts were considered of the place, developed by the ruling dynasty.
- *Thirdly*, together with the knowledge of the geographical location and history of the place, the possible routes of migration of Swastika were tried to trace upon. These possible paths eventually helped to gather evidences of evolution and interpretation of Swastika throughout the proposed path. This collection of various evidences were then categorised into groups like Arts, Currency, Emblem and logos, Manuscripts, Clothing and ornaments etc.
- *Fourthly*, all the possible evidences of a particular country were gathered (in the area of interest) and the evidences were then placed one by one in its most suitable group. In this way, the matrix table of the evidences was building up.
- *Fifthly*, also a research on scientific features of Swastika was carried out and possible theories or explanations were gathered which tried to explain the true meaning of the form and shape of Swastika and its evolution over time. Some of these parameters include Life Cycle and Movement of the Sun etc.
- *Finally*, the most important step was to develop a linkage between all the findings and to connect and sketch a possible route of the flow of idea of Swastika. Further, the spread of Buddhism from India to China and the possible trade connection between Germany and Japan, and Nazi Influence over the Asian and South-east Asian countries may have helped to exchange thoughts and currency at that time. Perhaps an ancient network of trade “Silk Route” developed an interaction between the West Central and the East Asian countries to ease the flow of goods and currency over many places. This helped us to derive a possible explanation of our proposed paths of migration of Swastika.

Timeline and Historical Background

Table 1: Timeline showing the different periods of our study area (Author)

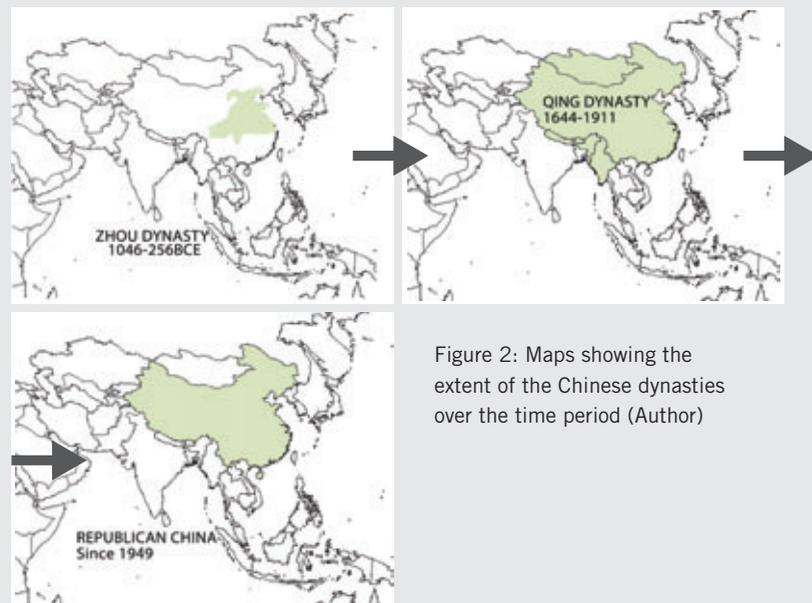
Countries	Time Period	Division of Period	Traces of Swastika
China, Asia	–	Pre-history (Palaeolithic Neolithic Bronze age)	Manuscripts, Symbols, Arts, Currency, Emblem, Ornaments and Clothing
	2100 BCE-221BCE,	Ancient China (3 Dynasties)	
	221 BCE-1911,	Imperial China (16 Dynasties)	
	1912-1949	Republican China	
Australia	7000BCE-2000 BCE	Period of Aborigines	Manuscript, Arts, Emblem
	2000 BCE-1700	Age of Explorers	
	1700-1900	Gold Rush	
	1900	Since 1900	
Japan, Asia	300-550	Pre-history & Ancient Japan (Yamato Period)	Manuscript, Symbols, Architecture, Currency, Emblem
	550-1185	Classical Japan (Asuka, Nara, Heian)	
	1185-1600	Medieval Japan (Kamakura, Muromachi, Azuchi)	
	1600-To present	Modern Japan (Edo, Meiji, Showa)	

Countries	Time Period	Division of Period	Traces of Swastika
Mongolia, Asia	–	Pre- ancient	Architecture, Currency, Emblem
	209 BCE-1125	Ancient Period (Xiongnu, Rouran, Turic)	
	1125-1911	Medieval Period (Mongol, Yuan, Quing)	
	1911- To present	Modern Period (National Revolution, Mongolia)	
Korea, Asia	–	Pre-history (Jeulmum, Mumum)	Manuscript, Symbols, Arts, Architecture, Emblem
	37 BCE-935	Three Kingdom (Goguryeo, Baekje, Silla)	
	935-1910	Unitary Dynasty Period (Goryeo, Joseon, Korean Empire)	
	1910-To present	Division of Korea (Military Government, North Korea, South Korea)	
Papua New Guinea, Australia	– 1800 AD- 1950 AD	Pre- history British Rule Guinea Australia Mandate	

China

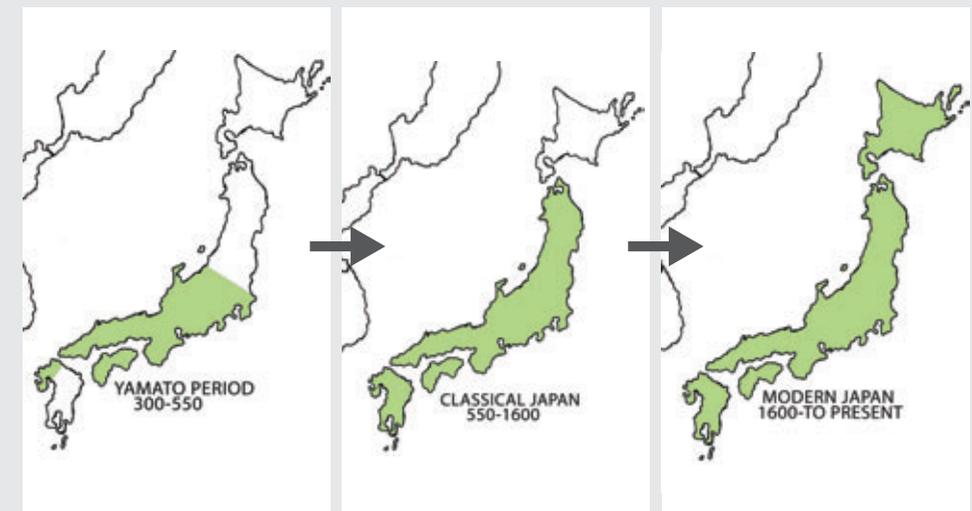
China being one of the most ancient civilisations is located in South-east Asia along the coastline of Pacific Ocean. It has a rich and varied culture, literature, philosophy and it mainly flourished in the Zhou dynasty (Wu, 1998). However to understand the position of China at present there is a need to understand the chronology of events through its timeline which is as follows:

- **Prehistory** - In this period, the agricultural activities were predominating over the region. Some cliff carvings were found by the help of carbon dating mechanism and process (Chang, 1986).
- **Ancient China** - The detailed history of China was found in the form of written documents in the period of Sang Dynasty.
- **Imperial China** - In this period, the influence of Buddhism religion took place in wide context. From India, the religion of Buddhism came to China during the Hang Dynasty period but consequently spread of various kingdoms also took place.
- **Republic and Modern China** - The symbol of Swastika is widely used in the present time. For example, Swastika symbol is used in food packaging in order to spread the importance of Buddhism religion (Taylor, 2009).



Japan

Human settlement in Japan can be found in Pre-ancient times. Japan is an island nation of which Honshu, Hokkaido, Kyushu and Shikoku are the largest of them. The Sea of Japan separates Asia from the Japan archipelago. The historical time period, however, is very interesting and intriguing. The pre-historic phase was the part in which Yamato Period was the most important one. This is because in this period cultivation of rice, as well as living standards of human beings had been improved (Hall, 1971). In the case of Classical Japan Asuka Period was popular in which Prince Shotoku imposed Buddhism on the people in the states. During Hen period, all spiritual elements and writing pattern of China had been taken and applied in these regions. In the case of medieval period, people were divided on the basis of caste and creed, and forced to divide the regions also. Shogan community had controlled the whole Japan. Mongolia had also tried to invade two times but Japan defeated them (History of Japan, 2016). In the case of Modern Japan, Edo period was famous. Its capital was Kyoto from where whole Japan was controlled. During 1900s, Japan had tried to expand up to Korea and China and in World war II Japan got influenced by Germany. During World War II America had dropped the atomic bomb over the parts of Japan and consequently due to this, the economy of the country was getting affected and facing a critical situation during British rule in World War II. After that, America came into influence over the country and helped to increase the economy of it (Jansen, 2002).



Korea

History of Korea in the Korean peninsula began roughly in Lower Paleolithic era. Korea is located in North - East Asia and it is separated by Yalu River in the northwest, Tumen River in the northeast, Yellow sea on the west and Sea of Japan on the west from China and Russia. In prehistory, Jeulmun and Mumun were mainly tribal people who were fully dependent on pottery making in South Korea. In ancient period, three kingdoms were developed--- Goguryeo in North Korea, Baekje in the Middle Korea, Silla and Gaya Confederacy (Byeonhan) in South Korea. In the 13th century, Mongolia invaded Korea during Yuan dynasty. After that Joseon dynasty came in the 14th century, and gradually foreign invaders came in these regions but China had supported Joseon in the period of Unitary Dynastic Period (Em, 2013). In colonial period Japan had occupied Korea during World War I. During World War II, America had attacked Korea and further North Korea was under the influence of Soviet Russia and South Korea under the influence of America. In 1950, Korean War took place which indicates the separation of both part of Korea but they remained united till 1991 by the force of United Nation. Later South Korea became developed and seemed to be independent nation while North Korea became fully dependent upon the foreign trade and ruled under military influence (Lambert, 2016).

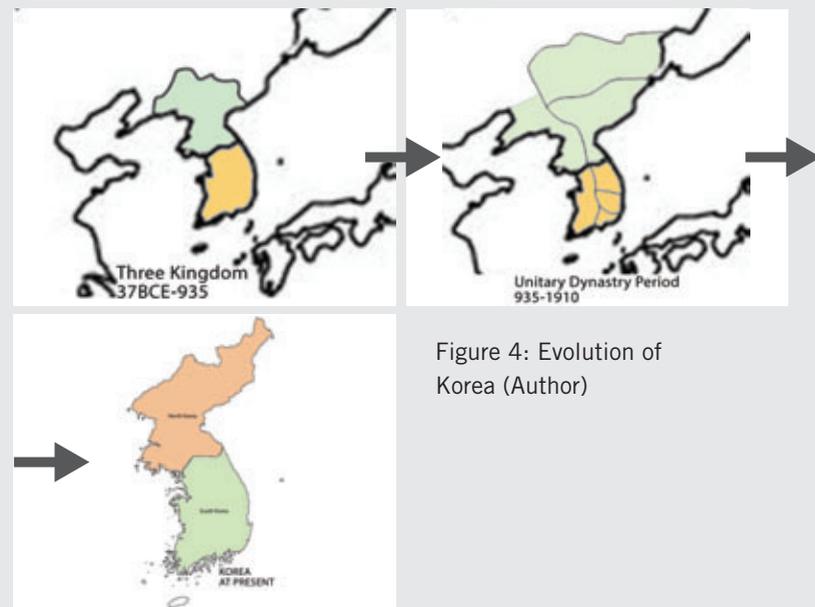


Figure 4: Evolution of Korea (Author)

Australia

The history of Australia mainly deals with the history of its people, society, tribal communities etc. The population is mainly concentrated on the eastern and the south-eastern coast. As there were no distinctive time periods in Australia, its history can be divided into four periods on the basis of the main milestones. The first part is termed as Aborigines Australia in which tribal culture was influencing the regions in various forms of art, music, and cave paintings. The second part is called as the Age of Explorers in which various navigators from Europe came to an island in Australia in the year 1700. A well-known British explorer, James Cook arrived at East coast of Australia in the year 1770 and after that British had made their colonies in some regions of Australia (Clark, 1986). The third period is known for its gold rush period in which traces of gold mines were found. The economy of Australia was increased gradually due to the production of gold and agricultural activities. In modern Australia various colonial Governments made United Federation democratic country in the 1990s (Lambert, 2015).

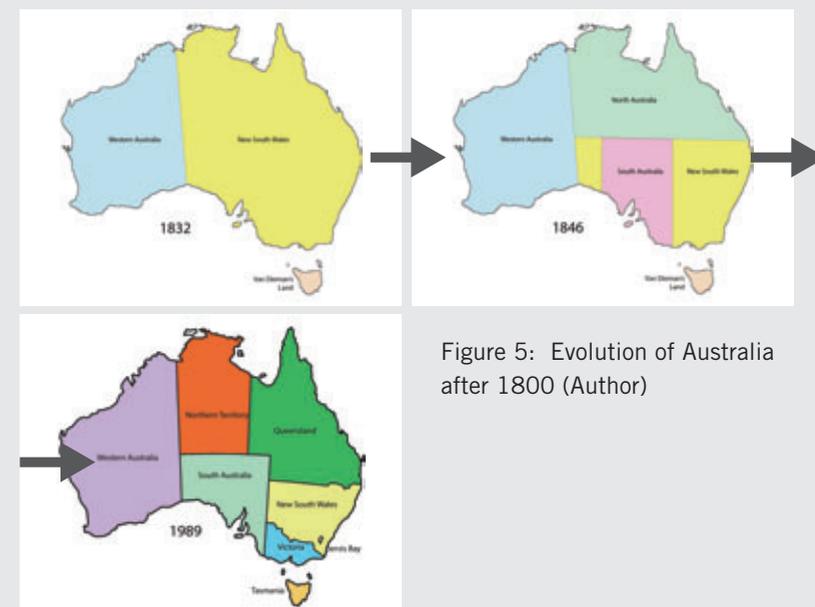


Figure 5: Evolution of Australia after 1800 (Author)

Mongolia

Mongolia being surrounded by China and Russia is known for its rugged topography and nomadic people. In prehistory period various nomadic empires came and followed slave grave culture and it had influenced few parts of Russia, Korea, and China. In ancient period various empires like-Xiongnu, Rouran states were made by the village tribe people. In the case of medieval period, the basic Mongol Empire came under the influence of Genghis Khan who covered large areas from east of Japan to west area of Asia. During this period, the religion of Buddhism came here and got flourished (History of Mongolian Empire, 2013). Later Yuan dynasty came into being in which the spread of Buddhism took place from Tibet. After the collapse of Qing dynasty, in 1911 Mongolia declared itself as an independent country but had to struggle till 1945 for international recognition. However, Soviet Russia had occupied Mongolia and forced to fight with Mongolia during 1921 and ultimately Mongolia got independence from the Soviet Russia (Mongolia, 2016). In between 1911 and 1921, there was a prince named Bogd Khan who emphasised the spread of Buddhism from Tibet to Mongolian region (Lambert, 2013).

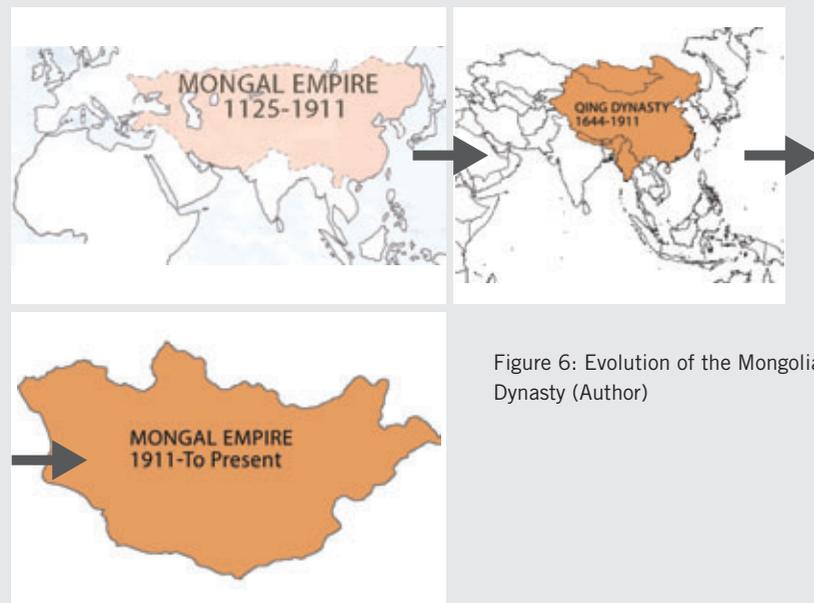


Figure 6: Evolution of the Mongolian Dynasty (Author)

Papua New Guinea

In the prehistoric period, humans had been traced 60,000 years ago. Europeans came first to this island. Portuguese named the island as “Papua” based on native people while Spanish named it as “New Guinea” based on the condition of the island. Gradually British colony came into existence along North and South region of the island and finally declared as British New Guinea in 1884. German had also occupied the region of it during 1884. Commonwealth of Australia had the formal Australia administration for British New Guinea. In 1941 Japan had attacked and further Australia took the island from Japan during Pacific War. In World War II Australia had occupied the whole part of the island (Jinks, et al., 1973).

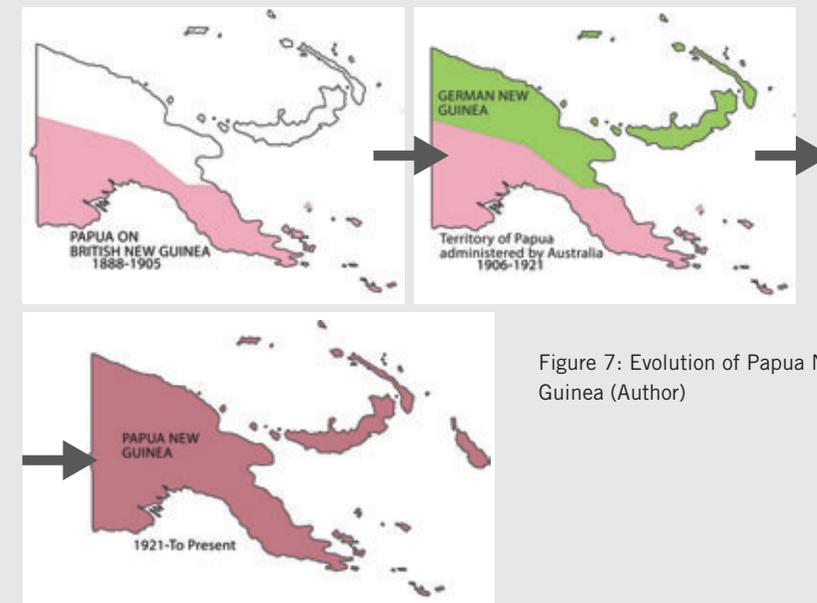


Figure 7: Evolution of Papua New Guinea (Author)

Analysis of the Evidences

The symbol of Swastika is physically found in many forms which are evidences of its existence. In the Eastern Asian region, the main evidences are in the form of manuscripts, flags, maps, temples, paintings, motifs, musical instruments and also in currency notes. However, the scenario is not same in each country as the Swastika is found embedded in each culture in its very own way. Keeping to the objective of this research a link has been established between these evidences and forms of science. The next section will make it clear how the presence of Swastika in the evidences is differing spatially.

Currency

China

In 523, Chinese Wu Zhu Coins have been found of the Lao dynasty displaying the Swastika. From the image it can be seen that there are two swastikas both above and below the square hole. The diameter of this coin is 23.5 mm and the weight is 2.3 grams.



Figure 8: A Chinese coin displaying the swastikas (Anon., n.d.)

Japan

The Currency of Japan was started in the period of Asuka Period under the influence of Prince Shotoku. The Swastika of Japan is called as Manji. The government of Japan had published the paper notes of 10,000 yen in the year 1958 with the symbol of Manji and photo of Prince. The Swastika symbol of Japan depicts scientifically as well-being and wellness, prosperity as well as life cycle (Ginko, n.d.).



Figure 9: 10000 Yen note 1958 Shotoku Taishi (Front and Back Side) (Anon., 2015)

Mongolia

The currency of Mongolia was published as vibrant colours and unique patterns in the period of Bogd Khan. He was highly influenced by Buddhist and Spiritual philosophy. In 1921 paper notes were issued and in 1924 due to certain conspiracy the note was not released due to the death of Prince Bogd Khan. Further, all printed paper currencies had been demolished. The symbol of Swastika is related with scientific parameters like psychological well-beings, wellness, prosperity and life cycle (Anon., 2016).

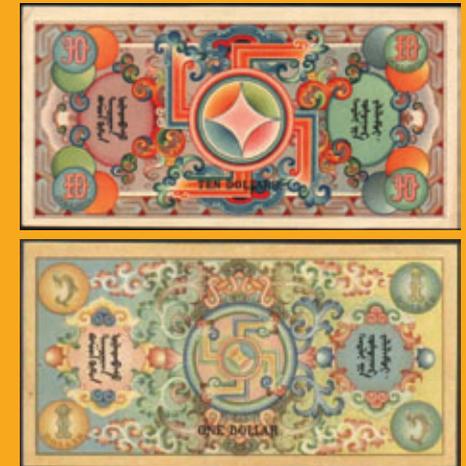


Figure 10: Mongolian Currency (10 Dollar and 1 Dollar) (Saint, 1924)

China

The art of china was famous and was widely in relevance during Tang dynasty. According to Tao Shih, the sculpture of the Buddha with Swastika on its chest was found. Through a painting, it was believed that Swastika acted as a sign of Sun during emperor Wu 684-704 AD. The seventh month of every year, the people of Tang dynasty had tried to catch spiders in order to weave Swastika on their web over fruits. This information was predicted on the basis of a painting and represents the character of good luck (omen). Now in the period of Sung dynasty Swastika was found over the forehead of buffalo in the painting. Swastika was also used in the ornaments especially in Tibet (Wilson, 1896).



Figure 11: Buffalo with Swastika on Forehead (Wilson, 1896)



Figure 12: Swastika in Spider Web (Wilson, 1896)

Japan

The art of Japan was widely used in pottery, painting and calligraphy as well as in the design pattern. 'Sayagata' was one of the most important geometric designs which depict a series of manji and Swastika or 'key fret'. During Edo period, fabrics were imported from China to Japan. The literal meaning of Sayagata was composed of two words - *Saya* is depicted as the name of pattern and *Gata* represents the people. In the design of Sayagata parallel lines are made with creation of negative spaces and intersecting lines represent distinct shape (YAP, 2010).

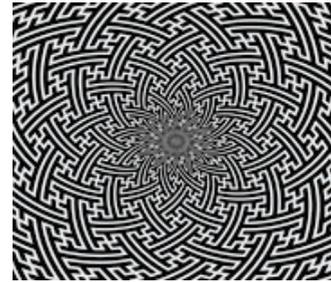


Figure 13: Sayagata pattern (YAP, 2010)

Australia

Aboriginal Dot painting which is a typical of the Australian Art have been used since the earlier times. From these paintings vertical, horizontal lines depicts cardinal directions and circular motion depicts aether. It also depicts a sense of mandala which will be explained later (gallery, 2016).



Figure 14: Aboriginal Dot Painting (gallery, 2016)

Korea

The art of Korea is highly respected in their culture and tradition. The Swastika symbol of Korea is known as Manja. The people of Korea have introduced myriads of beautiful and diverse patterns as well as motifs. Dancheong term is widely used which represents the colours used in the paintings on the eaves and columns of Korean temples (Alive, 2004). According to Chinese philosophy, there are five colours used in Korean paintings with their characteristics features are as follows-

- Black- Water, Winter and North.
- Blue- Wood, Spring and East.
- Yellow- Earth, all inter cardinal directions, ending and starting of seasons and Centre.
- White- Metals, Autumn and West.
- Red- Fire, Summer and South.



Figure 15: Dancheong painting (Japan Tourist Info, 2016)



Figure 16: Korea Pattern (Japan Tourist Info, 2016)

Korea

The Swastika in Korea is referred to as 'manja' and it predates back to the Indus Valley Civilization (almost 5000 years ago). The symbol here is influenced by the Nazis but is the reverse of it. The word 'man' in Korean represents the Swastika sign, while manja literally means the word man.

If these evidences wanted to be linked on manuscripts to parameters of science, a connection is established with psychology. The main reason being that in all these countries, the Swastika is for the well-being of an individual, giving a sense of auspiciousness within its meaning.



Figure 22: Swastika engraved on Buddha's foot (Dstovesky, 2012)

Symbols and Matter of National Importance

If the countries of this region are looked at closely, the importance of Swastika is predominant maximum in flags and maps, as this symbol has been directly used everywhere here in this form.

China

A particular symbol used in China is the one with the Swastika in the middle and then surrounded by four yin yang (explained later) symbols on the corners. This symbol in the Tang dynasty (684-704) meant to link with the sun. (Wilson, 1896) This symbol is scientifically very unique as there is a definite pattern and direction in the symbol. A clockwise direction is following the Swastika and in the centre there is a circular motion. To be more specific, the Swastika is seen as a cross where four lines emanate from the centre point to four cardinal directions (Crytalinks, n.d.). The Swastika is not only used as an individual entity here, but also in atlases its use has been noticed. During the Han Dynasty, in the 'Silk Comet Atlas' the Swastika is denoted as a 'long pheasant star.' (Chinese Buddhist Encyclopaedia Illustrations, 2013)



Figure 23: Tang Dynasty Symbol (Kobres, 1992)

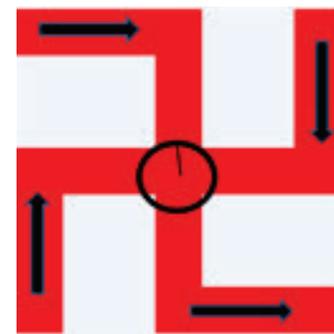


Figure 24: Movement of Swastika (Author)



Figure 25: Silk Comet Atlas (Kobres, 1992)

Japan

A very typical symbol widely used in Japan which has derived its existence from Swastika is the Yin Yang. Although this symbol was first deciphered in China, its use is predominant in Japan also. It is said that the positive and negative Swastika actually lead to the formation of the yin yang. The symbol has a very scientific meaning as it relates to the life cycle. Another symbol which is shown in Figure 26 is also very typical of Japan, in which the vertical axis joins the earth with the sun and the horizontal axis is the connection between the yin and yang; the four arms signify movement (Fritjof, 1975). To talk about its use in the flags, the relevance of the red dot has a scientific connotation of the Swastika. The meaning of Swastika in Japan is sun and this red dot means the rising sun. Therefore this concept of rising sun can have a deep relation with the movement of sun as a parameter of science. (Japan Tourist Info, 2016)



Figure 26: Combination of Positive and Negative Swastika (Author)

Korea

In Korea, the symbol of Swastika has been found as motifs on King Suro's tomb. These motifs represent the classic yin and yang symbol with the meaning of life cycle embedded in it. The two fishes meaning freedom and fearlessness signify life and

death giving a sense of the cycle of life. Similarly, if seen at the emblem on the national flag, it has the symbol of yin yang in the centre representing life and death. (life, 2014)



Figure 27: Korean motif (Calvin, 2010)

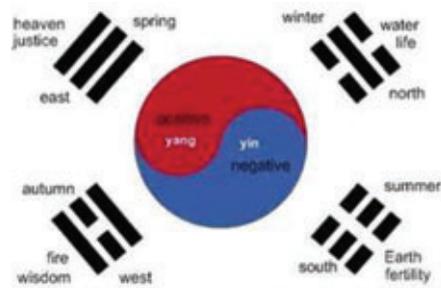


Figure 28: Flag of South Korea (public domain, 2008)

Australia

One can see the Swastika symbol as emblems on flags but having the Nazi look, hinting on the fact that its origin is due to the Nazi influence. This is mainly being seen since World War II i.e. after 1939.

Mongolia

Motifs have been found here in the form of badges being offered to military personnel. These badges are said to have a link with Nestorianism. Exchange of Harappan Civilization coins took place during pre-ancient time of silk trade on which Swastika had been embedded as motif (Slick, n.d.) During the Yuan Dynasty, the flag which was used had the Yin Yang symbol in the middle (formed from the positive and negative Swastika) with half-moon and sun on the top, having a direct link with the elements of nature.



Figure 29: Mongolia Nestorian Motif
Source: (pinterest, n.d.)

Ornaments and Clothing

China

Beautiful ornaments are seen with designs of Swastika in the form of pendants or even as bangles with the Swastika symbol embossed on it. The image shows the various forms of Swastika used as designs in making of these ornaments. Not only this, Swastika is also seen as printed on apparels. As a matter of fact, during the Tang Dynasty in 763-779, evidences of Swastika can be found on silk. This is because Tai Tsung of this dynasty forbade the use of Swastika in Silk, hinting on the fact that its use was there before him. Besides, if we consider the present scenario, the symbol is seen to be stitched on the collars of Chinese children to protect them from evil spirits. There is a scientific underpinning to this as it can be related to Psychology in the form of belief. (Wilson, 1896)



Figure 30: Swastika Design on Silk Fabrics (Wilson, 1896)



Figure 31: Swastika Decried as a Sign for Sun (Wilson, 1896)

Networks

After dealing with the countries separately, there is a need to establish a link between all these countries. This link can be made by showing the path of the migration of the Swastika in the entire eastern part of Asia. Along the land routes when Buddhism had spread, it had undergone a profound change. These long land routes had connected and strengthened trade routes between China and Mediterranean. Buddhism spread and flourished to northwest India and also beyond that along the silk route. It gradually spread westward to Afghanistan and through central Asia eastward to the Pacific--- to China, Korea, and Japan. (Landry, 1982) It is said that with the spread of Buddhism the relevance of Swastika became more established. In 1125 Swastika was seen to spread towards Mongolia from India. Another path which it followed was towards China in 1800 BCE, then travelling from China to Korea in 37 BCE and then to Japan in 538.

If the southernmost countries of Australia and Papua New Guinea are taken into account, its main influence is due to the Germans or the Nazi influence to be more specific. After 1939 during World War II, in Australia, the traces of Swastika mainly in the form of Nazi flags were seen. On the contrary, if Papua New Guinea is considered, evidences of Swastika could be seen in 1888 by some British explorers.

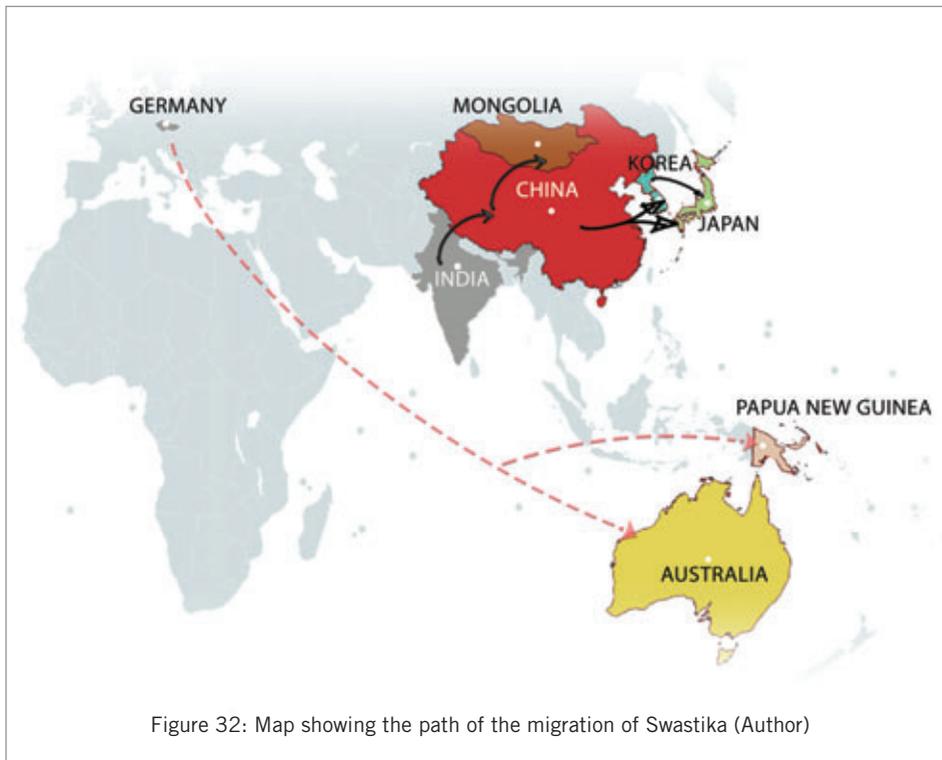


Figure 32: Map showing the path of the migration of Swastika (Author)

Linking Heritage with Science

Table 2: Matrix showing the link between the heritage and scientific parameters (Author)

SCIENTIFIC PARAMETERS		HERITAGE PARAMETERS						
		Manuscript	Symbols/Emblem	Architecture	Currency	Arts	Clothing & Ornaments	
Cardinal Direction			China	Japan		Australia Korea		
Psychological		China Japan Australia				China		
Strength			Australia Korea				China	
Astronomy			China					
Movement of Sun			Japan					
Life Cycle		Korea	Japan Mongolia Korea	Mongolia	Japan Mongolia China			
Five Elements Seasons			Mongolia Korea			Korea		

Research findings

To answer the aforementioned research three questions we have out carried out the research in a systematic manner and have arrived to some results and interpretations. The amount of evidences found in each country varies due to a number of reasons. For example, the influence of Buddhism has been the most in Japan and China as the people of these two countries are seen following Buddhism at a large scale. Although it had spread to Mongolia and Korea also but the amount of evidences found here are less. It is seen that the spread of Buddhism has led to the emergence of Swastika in the northern countries. On the other hand for the southern countries, Papua New Guinea and Australia, Nazism has created an impact on the availability of Swastika. For example, flags are seen in Australia with emblems of the Nazi Swastika symbol and moreover after World War II a brass symbol was found with the 'fylfot' (Swastika called in Australia). Another finding was that scientific reasoning could be seen within the cultural aspects of these evidences. According to the objective of this research, therefore, a close link is established between science and heritage.

Conclusion

Ultimately after completing this research the basic question that comes to the mind is that whether the aim and objective of this research is fulfilled or not. Moreover it is also important to draw out results from the study as it will help in creating a connection among all the aspects of the research. In this case the matrix between the cultural parameters and the scientific reasons is the final output and also the objective that was set while starting this study.

To draw a conclusion among all the countries within the areas of interest, on the basis of the matrix, which is the objective of this research, the countries cannot be ranked equally. Within the region allotted China is found to be available with maximum evidences, by strengthening the fact that even at present the Swastika symbol is used predominantly here. Japan also has a vivid description of the evidences available, placing it on the second position. The reason behind finding such a strong use of Swastika in both Japan and China is mainly due to the inherent culture of Buddhism. Although it had spread to even Korea and Mongolia, and that also before China and Japan, but the use of Swastika in these countries is not so dominant. Therefore, on the third and fourth position Korea can be considered respectively with comparatively less amount of resources. Australia will be considered at the fifth position with the minimum amount of resources and that also due to Nazism. However in the case of Papua New Guinea absolutely no traces of Swastika have been found although there was influence of Nazism.

To conclude one can say that after this research it is asserted that Swastika has a very important use in the lives of the people both directly and indirectly. And most importantly in spite of the Swastika having a strong position in the culture of a particular country, it can be explained with scientific underpinnings. In other words, a rational perspective can also be brought in the heritage of a country.

Scope for further research

While carrying out a research for any project it is necessary to follow a systematic approach and limit certain areas for the convenience of the research. However, these limitations become the scope for further research or the way forward. While searching for the evidences of Swastika according to the objective set before the research, there were some other factors or parameters which could not be considered.

- One of the basic of them was economic relations which mainly had an impact on the society after the period of World War. There were some negative effects of this event which were not taken into account while carrying out the research. Therefore, a question comes to the mind that “does the economic and social wellbeing of the society really have a direct impact over the beliefs and traditions of the society and its people” or “does it have an indirect impact over them.” Whatever it be, but it can be definitely said that in one or the other way, there does exist a strong linkage between the economic status and the prevailing traditions of the particular place.
- Another limitation which came up in the forefront was that there were a lot of indirect evidences found embedded in the everyday lives of the people. As they did not have a strong proof or base to justify them, we did not dig deep into those facts to establish them. This can be taken as another scope for further research by dealing into these indirect evidences and strengthening the research.

Notes for further reference

Sayagata: Sayagata is a geometrical design with an interlocking Swastika, manji and fylfot. From various sources it was found that Sayagata was originated from types of clothes. It was first used in Indian Architecture. It passed through China and then to Japan in the Tenshou era (1573-92). In Edo period, art form and design of Swastika had been developed and Sayagata was combined with various designs of Chrysanthemums, plum blossoms, bamboo or Orchids.

Aboriginal Australia: The term Aborigine means native people. This term "Aboriginal Australia" was given by British after their colonisation in these areas. The people live outside the boundaries of British colonies were indicated as Aborigine. The Aborigine had made various groups and followed different culture, names and languages. They also divided the geography into various parts – Northern, Southern and Central areas. The Northern and Southern areas are rich in natural marine and woodland resources while Central areas are less rich compare to these two mentioned areas. Various local communities are made in present days.

Aboriginal Dot Painting: Aboriginal Dot painting is a unique painting used in Australia. This painting is famous at international platform. It is used to depict as a medium of story and culture of ancient civilization. This type of painting is originated from body painting, sand painting, symbolic pattern, carved on artefact. It may be widely used for shimmer effect on body design or enhanced to other design by suggesting energy field or powerful aura.

List of references

Books

- Balsys, B., 2014. *Mandalas: Their Nature and Development*. Japan: Universal Dharma Publications
- Chang, K.-C., 1986. *The Archaeology of Ancient China*. Yale University Press
- Clark, M., 1986. *A short history of Australia*. s.l.:s.n
- Em, H. H., 2013. *The Great Enterprise: Sovereignty and Historiography in Modern Korea*. s.l.:s.n
- Fritjof, C., 1975. *The Tao of Physics*. 43 ed. United States of America: Shambhala Publications.
- Hall, J. W., 1971. *Japan From Prehistory to Modern Times*. s.l.:s.n.
- History of Japan*. 2016. [Film] Directed by bill wurtz. Japan: s.n.
- History of Mongolian Empire*. 2013. [Film] Mongolia: Military Marvels.
- Jansen, M. B., 2002. *The Making of Modern Japan*. s.l.:s.n.
- Jinks, B., Biskup, P. & Nelson, H., 1973. *Readings in New Guinea history*. s.l.:s.n.
- Taylor, J., 2009. *The Generalissimo*. s.l.:s.n.
- WILSON, T., 1896. *THE SWASTIKA*. s.l.:s.n.

Websites

- Alive, A., 2004. Korean art of painting. [Online]
Available at: http://www.antiquealive.com/Blogs/Dancheong_Korean_Art_Painting_Buildings.html
[Accessed 26 May 2016].
- Calvin, 2010. HALFIE TROTS THE GLOBE. [Online]
Available at: <http://halfietrot.blogspot.in/2010/03/translation-another-point-against.html>
[Accessed 3rd June 2016].
- Crytalinks, n.d. Swastika. [Online]
Available at: http://www.bibliotecapleyades.net/sociopolitica/sociopol_thule10.htm
[Accessed 3rd June 2016].
- Encyclopaedia, C. B., n.d. Swastika. [Online]
Available at: <http://www.chinabuddhismencyclopedia.com/en/index.php/Swastika>
[Accessed 3rd June 2016].

gallery, K. o., 2016. Aboriginal Dot Paintings and their Origin. [Online]
Available at: <https://www.kateowengallery.com/page/Aboriginal-Dot-Painting.aspx>
[Accessed 25 May 2016].

Japan Tourist Info, 2016. Japan Visitor. [Online]
Available at: <http://www.japanvisitor.com/korea/korea-culture/korea-trad-pattern>
[Accessed 3rd June 2016].

Kobres, B., 1992. Comets and the Bronze Age Collapse. CHRONOLOGY AND CATASTROPHISM WORKSHOP, number 1(0951-5984), pp. 6-10.

Lambert, T., 2013. A SHORT HISTORY OF MONGOLIA. [Online]
Available at: <http://www.localhistories.org/mongolia.html>
[Accessed 20 May 2016].

Lambert, T., 2016. A BRIEF HISTORY OF KOREA. [Online]
Available at: <http://www.localhistories.org/korea.html>
[Accessed 17 may 2016].

Landry, L., 1982. The Migrations of Buddhism. Asia Society's Focus on Asian Studies, II(1), p. 20.

life, D. I.-S.-O. C.-O. w. o., 2014. Korea's royal connection to ayodhya. [Online]
Available at: <http://www.sanskritimagazine.com/history/koreas-royal-connection-ayodhya/>
[Accessed 3rd June 2016].

Mongolia, E. o., 2016. History of Mongolia. [Online]
Available at: http://mongolianembassy.us/about-mongolia/history/#.V0_XOvI97IU
[Accessed 20 May 2016].

pintrest, n.d. Pro Swastika. [Online]
Available at: <https://in.pinterest.com/pin/479563060302385394/>
[Accessed 3rd June 2016].

Saint, G., 1924. Mongolia Paper Money. [Online]
Available at: <http://www.numismondo.net/pm/mng/index1.htm>
[Accessed 3rd June 2016].

Slick, M., n.d. Christian Apologetics and Research Ministry. [Online]
Available at: <https://carm.org/nestorianism>
[Accessed 3rd June 2016].

Thomas, 2013. ProSwastika. [Online]
Available at: <http://www.proswastika.org/print.php?news.385>
[Accessed 3rd June 2016].

- Wu, A., 1998. China Highlights. [Online]
Available at: <http://www.chinahighlights.com/travelguide/culture/china-history.htm>
[Accessed 22 May 2016].
- YAP, M., 2010. Japanese pattern and motifs. [Online]
Available at: <http://sweetpersimmon1.blogspot.in/2010/03/japanese-patterns-and-motifs.html>
[Accessed 25 May 2016].
- Anon., 2015. World Banknotes & Coins Pictures | Old Money, Foreign Currency Notes, World Paper Money Museum. [Online]
Available at: <http://www.worldbanknotescoins.com/>
[Accessed 3rd june 2016].
- Anon., 2016. Graded currency.com. [Online]
Available at: <http://www.gradedcurrency.com/mongolia.html>
[Accessed 20 May 2016].
- Anon., n.d. Japan Visitor. [Online]
Available at: www.japanvisitor.com/japanese-culture/japanese-symbols
[Accessed 3rd june 2016].
- Anon., n.d. Primal Trek. [Online]
Available at: <http://primaltrek.com/charmcoins.html#Swastika>
[Accessed 3rd June 2016].
- Anon., n.d. World Banknotes & Coins Pictures. [Online]
Available at: <http://www.worldbanknotescoins.com/2015/03/japanese-banknotes-10000-yen-note-1958-shotoku-taishi.html>
[Accessed 22 May 2016]

2

Swastika

A Universal Symbol Evidences from Southeast Asia

Guenon explains these two opposite directions as 'the world's rotation seen from one or other of the poles' the poles in question being human and celestial, rather than the poles of the terrestrial globe.

The Penguin Dictionary
of Symbols

Swastika

A Universal Symbol: Evidences from Southeast Asia

Akshay Sahu¹, Ankita Mandal², Debanjali Saha³, Abhinav Gupta⁴, Tanima Bhattacharya⁵

Introduction

We are symbols, and inhabit symbols.
– Ralph Waldo Emerson

Symbols, according to the Merriam Webster dictionary are defined as '*arbitrary or conventional sign used in writing or printing relating to a particular field to represent operations, quantities, elements, relations, or qualities.*' Symbols enacted as a tool of communication or to transmit our ideas from one person to another or to successive generations. Human Beings as a species have been using symbols to spread, conserve and record our ideas from the prehistoric times. With emerging consciousness, some of the symbols have gained a level of universality based on natural sciences and philosophy of living. These ideograms can be easily identified and linked with various cultures and practices. One such symbol is the Swastika.

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Swastika, can be found almost around the whole globe, in one form or the other (Beer, R, 2003) (see figure 1). Evidences can be found in the form of cave paintings, decorative motifs in potteries, textiles, in architectural elements and in various other artefacts. This study tries to locate evidences of Swastika and symbols pertinent to it, along with its evolution of logical interpretation, scattered throughout the Southeast Asia. A similar study has been done by Thomas Wilson which is documented in the book titled “The Swastika: The Earliest Known Symbol and Its Migration”.

This study also tries to arrange the found evidences on the basis of time and certain scientific and heritage (cultural) parameters. This would help us to loosely interpret the meaning of Swastika in various contexts. It will also help the future researchers to get a consolidated map documenting the emergence of the Swastika and its related symbols which are discovered in the region.

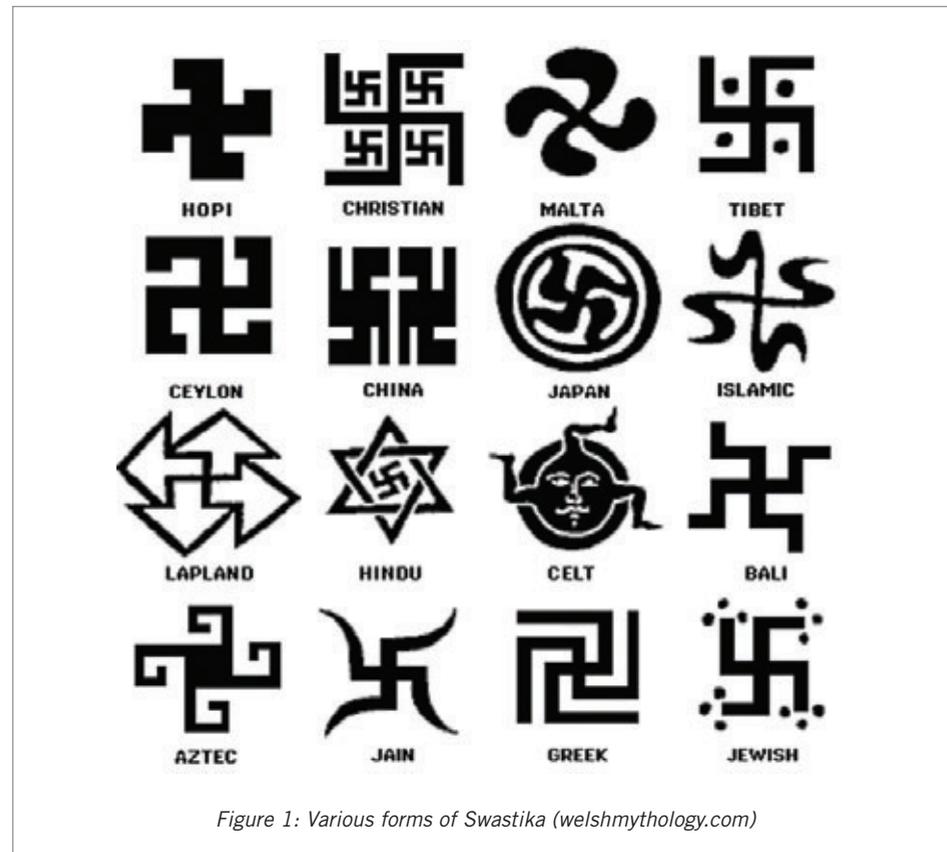


Figure 1: Various forms of Swastika (welshmythology.com)

Research Questions

Most prominent research questions for the study were:

- ‘Is the symbol of Swastika present across the southeast Asian countries?’
- It was followed by the question regarding the intensity and spatial distribution with which it is spread throughout the region.
- Question regarding the validation of the areas that were selected for the research (cave paintings, artefacts, architectural and planning principles and textiles) was also prominent.
- ‘What does Swastika symbolizes scientifically and culturally?’

Timeline and Approach to the study

This research is primarily based on secondary data collected through books, scientific journals, and web pages. Southeast Asian countries can be seen in figure 2. For the ease of research, a timeline was constructed which was sub-divided into four parts (see figure 3). For each time period, the cultural facts of the countries, kingdom that ruled the region, if present, and other facts were collected.

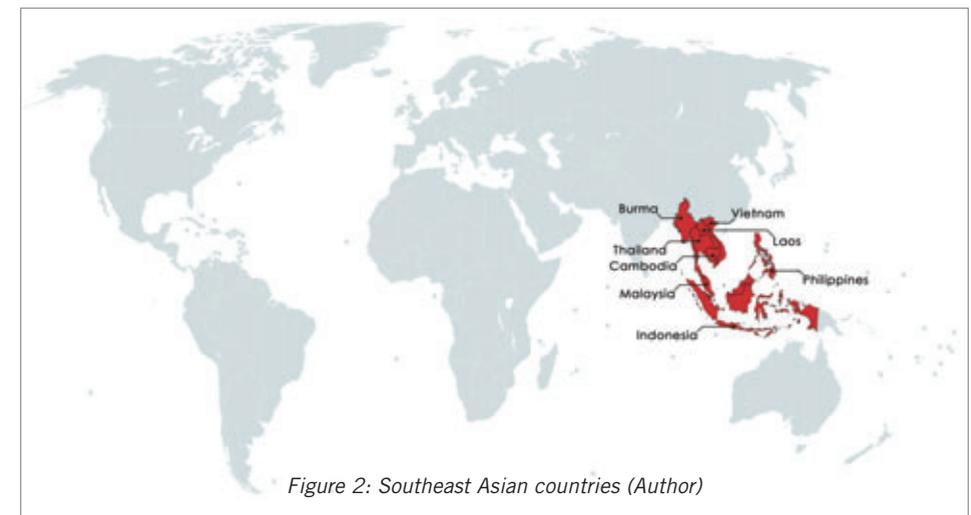


Figure 2: Southeast Asian countries (Author)

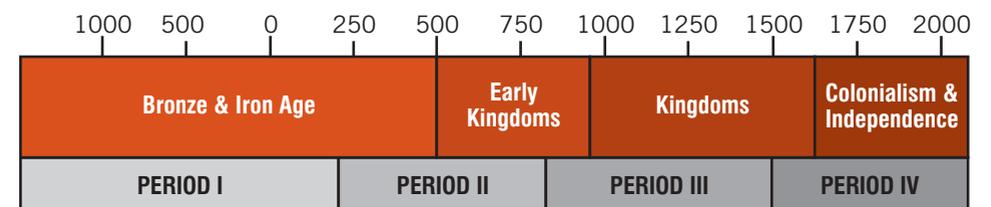


Figure 3: Timeline for research (Author)

Conceptual framework

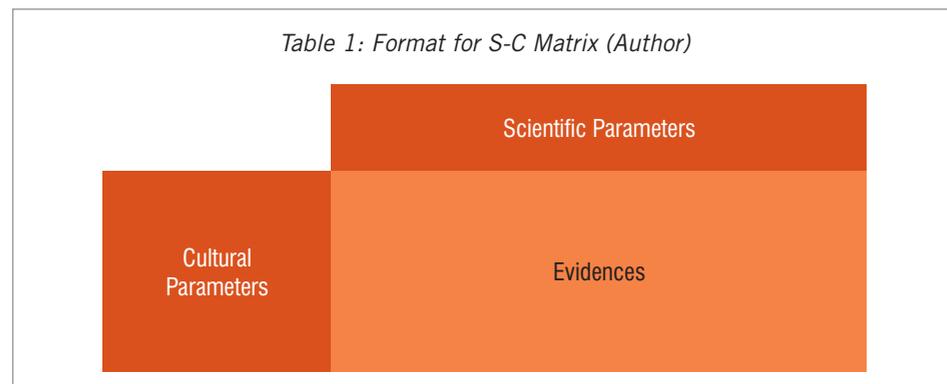
The research is divided into two parts:

- i. Collection of evidences based on time periods
- ii. Analysis and restructuring of the findings

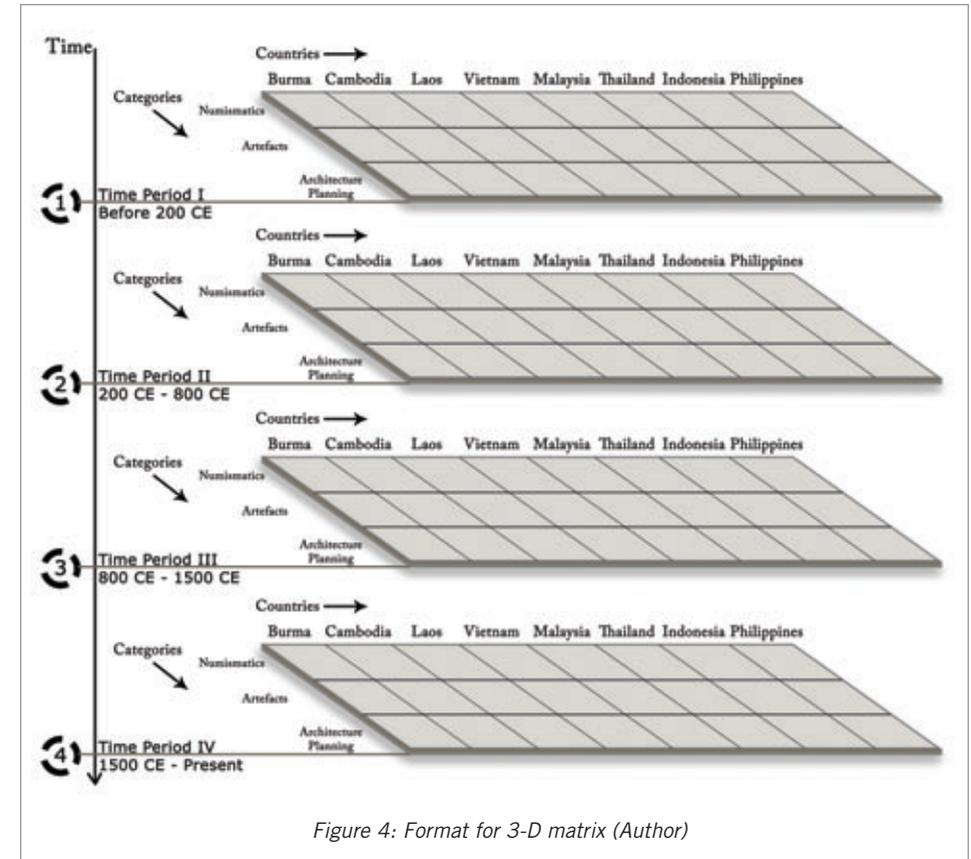
For collecting evidences, a methodological framework was established, which was based on intuitions and prior knowledge. Certain specific areas were chosen which are described below.

1. **Cave paintings:** Early civilizations used symbols to record things. One hypothesis for the origins of swastika is that it is a solar symbol. Another states that it depicts the cosmos. If any of these interpretations is true, then certain cave paintings that depicts similar symbols must exist. Hence, first intuition was to find such evidences on cave paintings and votive objects of the region.
2. **Coins:** During the dawn of this millennium, region of Southeast Asia was famous for its spices. Silk was exported from China to foreign lands through Southeast Asia. This led to the creation of two important trade routes around Southeast Asia, namely Silk route and the Spice route. Silk route existed through the mainland region whereas spice route existed was mostly by ships. Trade led to the exchange of goods and ideas along with coins. Coins used to have marks which defined a kingdom. Swastika is also believed to depict sacredness and auspiciousness, which were the traits of kingdom. Next intuition was to search for such kingdoms that used coins and had Swastika marked in their coins.
3. **Architecture and planning patterns:** Swastika, in Hindu, Vedic, Buddhist and several other cultures represents eternal connection with the cosmos. Hindu temple architecture has always been based on representation of the cosmos. Thus, it was necessary to look into the architecture principles of the temples, stupas, pagodas and the planning principles of the cities, and to find connections if any, with the Swastika.
4. Symbols are often found in textiles and in other artefacts as motifs. The research also looks into the famous artefact of the region and their connection with the symbol of swastika.

For analysis, a matrix has been used, through which the evidences were classified according to scientific and heritage (cultural) parameters. This matrix was used to analyse the origin (both etymological and ideological) and implications of the swastika (see table 1).



Another 3-D matrix is constructed to arrange the evidences according to space, time, and category. Its format can be seen in the figure below.



Methodology

To create a balance between the scientific and heritage parameters, division into six categories was done which are as follows:

- Introduction to Swastika
- Dividing the countries according to timeline and its connection through trade route
- Spread of religions and influence on the area
- Finding of artefacts and architectural elements of the specific countries
- Forming matrix based on the findings and evidences
- Deducing conclusion

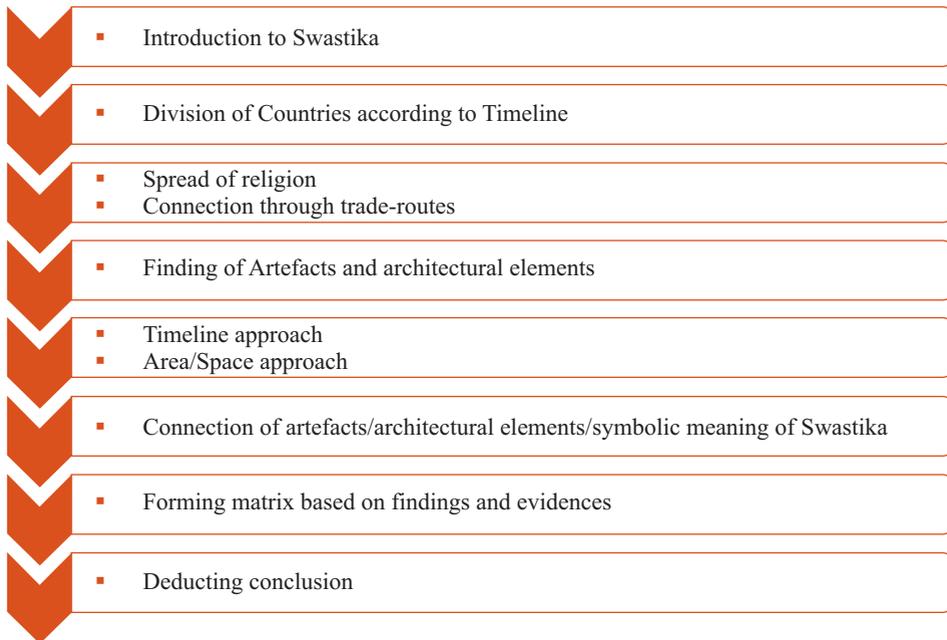


Figure 5: Methodology diagram (Author)

Research

Evidences

Some other eyes will look around, and find the things I've never found.

- Malvina Reynolds

Time period I – Prehistoric Era (Before 200 CE)

Prehistoric Era was the era of the early humans, who started to settle and practice agriculture. Neolithic culture (2500 BCE) was characterised by stone tools, shell beads and ceramics. Bronze technology started to develop between 8000 CE-2000 CE characterised by bronze tools and artefacts (like the *Dongsong* drums). Cultivation of rice started. People were Animist, believing in spirits, good and evil. Early seeds of kingdom were laid out in this period.

Around 500 BCE small settlements of the *Aboriginals, Burmans, Pye, Mon, Khmer, Viets, Malays, Javanese, Filipinos* and *Austronesians* were present around Southeast Asia. Traders and religious missionaries came from India, and evidence of an early form of writing based on Sanskrit has been identified in Cambodia (The Met's Heilbrunn Timeline of Art History, 2016). The *Dongsong* drums of northern Vietnam are the most typical artefacts of this period. The following evidences were found for this time:

Cave Paintings: *Padha-lin* caves in central Burma are one example of the late-Neolithic period (Bowman, J., 2005). Stone tools and cave paintings were present at *Padha-lin*. In the paintings one can see the portraiture of human palm with a form of Swastika on it, a solar cross and depiction of sun inside two converging lines (see figure 6).

Cave paintings depicting various solar symbols were found at East Kalimantan, Indonesia. Paintings at *Gua Tewet* caves, Kalimantan, are considered to be of the Neolithic era (5000 BCE-1500 BCE). Some of these paintings might have an association with the sun and some can be an early version of the Swastika (see figure 7).

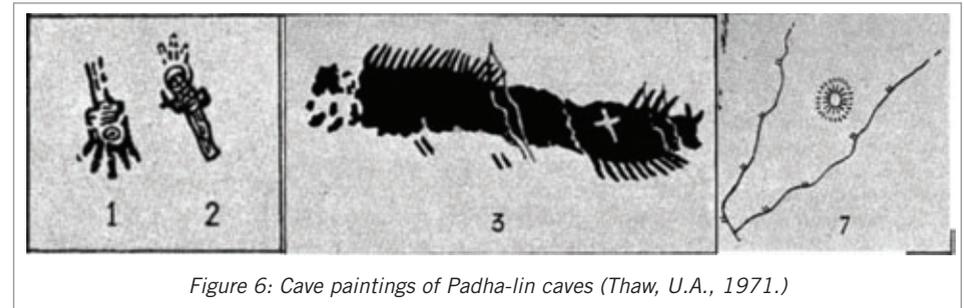


Figure 6: Cave paintings of Padha-lin caves (Thaw, U.A., 1971.)

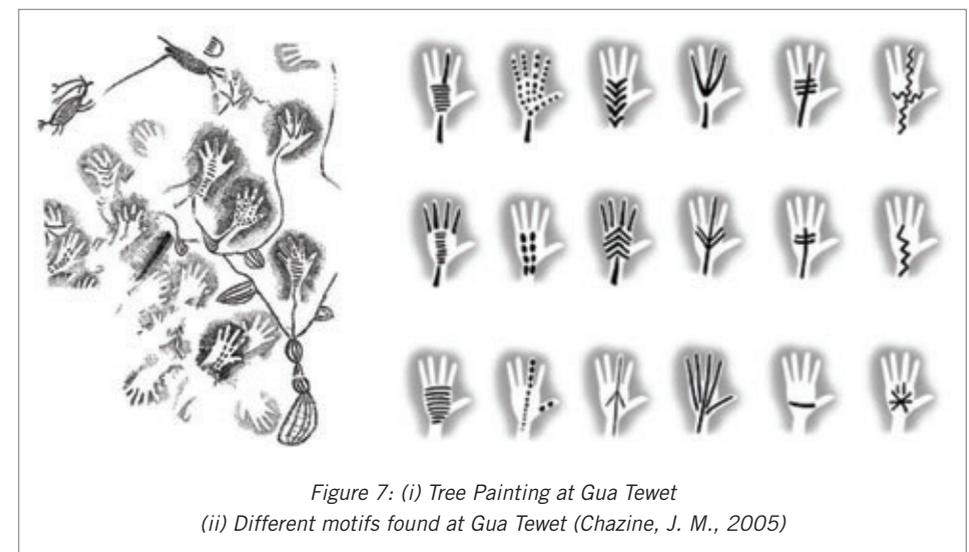


Figure 7: (i) Tree Painting at Gua Tewet
(ii) Different motifs found at Gua Tewet (Chazine, J. M., 2005)

A painting described as a human figure is found at *Muna* Islands which is located near the Sulawesi Island, Indonesia. It has a very strong resemblance to Swastika and *Vajra* symbols (see figure 8). The cave paintings of Ota, Indonesia, are dominated by the Swastika form (Arifin, K., & Delanghe, P., 2004). Various other anthropometric and non-anthropometric paintings are found at nearby islands.

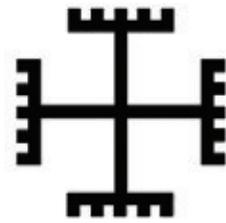


Figure 8: (i) Cave painting, Muna Islands (Arifin, K., & Delanghe, P., 2004)
(ii) Variation of Swastika symbol (Alternative Thinking 37, 2012)

Artefacts: Kettledrums are found in major archaeological sites in the Southeast Asian region (see figure 9). It is also referred as frog drums (based on the tiny metal frogs around the tympanum of the drum, see figure 10) or *Donsong* drums. This instrument is generally used by the aboriginal people residing in the hills who used to practice animism. The drum was used to please the Rain god for the slash and burn farming. Made out of bronze, the drum contains many motifs, some of which might be an earlier representation of the Swastika.



Figure 9: (i) Map showing the location of discovery of kettle drums (Author)
(ii) Method of playing drum (Cooler, R. M., 1995)



Figure 10:(i) Bronze kettledrum (Fraser-Lu, S., 1983)
(ii) Drumhead of the drum (Cooler, R. M., 1995)

Other than the drums, hard-stone productions which bore the symbol of swastika were found at *Khao Sam Kaeo*, Upper Thai-Malay Peninsula. In other stone production, the symbol of Egyptian cross (also known as *Ankh*) which can be attributed with the Egyptian god 'Ra', is also present. These are considered to be constructed around the dawn of Bronze Age.

This time period was the era of transition of early small settlements into early kingdoms. During 200 CE, the kingdoms of *Pye*, *Funan*, *Han* (China), and *Malay* were at power. The cities of *Sri ksetra*, *Beikthano* and *Halin* flourished as the *Pye* city states (present day *Burma*). The city of *Oc-Eo* was an important *Funan* city. In the 2nd and 3rd centuries CE, centralized states arose in *Malaya*. The religions of Buddhism and Hinduism were introduced in *Malaya*. *Malayan* civilization was heavily influenced by *India*. In the late 4th and 5th centuries, indianization advanced more rapidly, in part through renewed impulses from the south Indian *Pallava* dynasty and the north Indian *Gupta* Empire, but *Funan* rulers continued diplomatic ties with *China* (Meyer, M. W., 2000). Hinduism was prominent during the earlier periods of this era.



Figure 11: Hard stone productions found at *Khao Sam Kaeo* (Bellina B)

Time Period II (200 CE-800 CE)

During 500 CE, kingdoms of *Champa*, *Java*, *Malays*, and *Funan* were growing while the *Pyu* cities started to decline. By 750 CE, kingdoms of *Mon*, *Srivijaya*, *Java*, and *Tang* (China) grew along with *Champa*, and *Khmers*. In 750 CE, Buddhism spread over to *Java*. By 772 CE, *Borobudur* was built. The Chinese Buddhist pilgrim *Yijing* (I-Ching) described seventh century *Srivijaya* as a centre of Hindu and Buddhist learning as well as trade (Meyer, M. W., 2000)

Artefacts: Silver coins were used for trade across the kingdoms. These coins are likely to be based on the south Indian coin style, which had sacred and auspicious motifs of fertility and prosperity in it (Gutman, P., 1978). These coins are often called *Pyu* coins. *Pys* minted the symbols of rising sun and Swastika along with *Srivatsa* in their coins (see figure 12). *Srivatsa* and Swastika were used together to denote 'Svasti Sri' at the beginning of inscriptions in palaeography (Gutman, P., 1978). Also according to (Beer, R., 2003), 'Swastika can be identified with the Vedic god Vishnu as the solar symbol of his fiery discus or chakra or as the particular hair curl or mark that adorns Vishnu's breast known as the *Srivatsa*'. Similar coins were found at sites of *Dvaravati*, *Shan*, and *Funan* kingdoms (Bacus, E. A., & Glover, I., 2006).

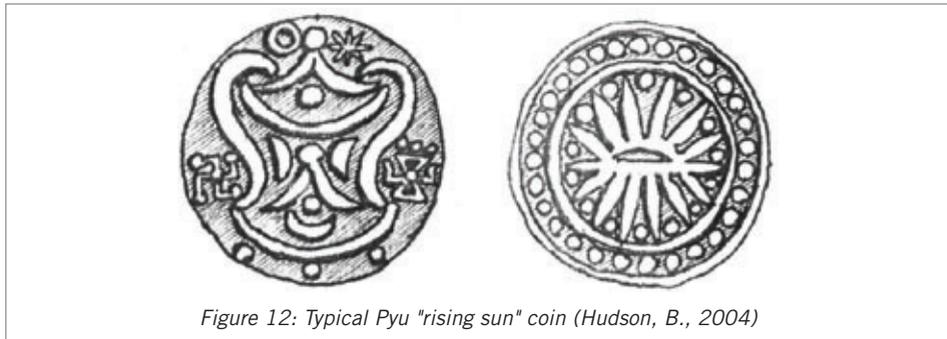


Figure 12: Typical Pyu "rising sun" coin (Hudson, B., 2004)

During the Kedah dynasty (*Malay*), bronze coins with floral symbols were used. The floral pattern might be a depiction of Lotus which along with swastika, was universal symbol then (see figure 13). In the *Srivijaya* dynasty, coins carried the symbol of a *Naga* serpent whose tail moves upward spirally. The idea of swastika relating to the enhancement of level of spirituality can be embedded in the spiral tail of the serpent.

Cave site of *Kulanay*, *Vinaya* Island, Philippines have potteries that can be dated to third or fourth centuries CE. These potteries contains the symbols of swastika and are considered to inherit the patterns of the bronze *Dongsong* drums (see figure 14). Robert Fox of the National museum of Philippines says "I have seen a swastika incised on the lid of a burial jar from a site on the west coast of *Palawan* in the Philippines".



Figure 13: (i) Bronze coin of Kedah dynasty (Pinterest, 2016)
(ii) Naga coin of Srivijaya (Asiainest.com, 2016)

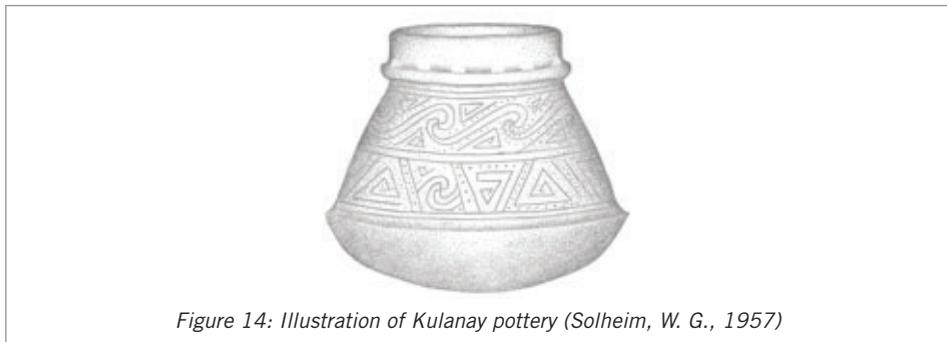


Figure 14: Illustration of Kulanay pottery (Solheim, W. G., 1957)

Architecture and Planning: Swastika was implemented in temples, stupas and pagodas in the form of *Mandala* throughout the region. *Mandala* and Swastika have been associated with each other. There are swastikas inside a mandala (see figure 15).

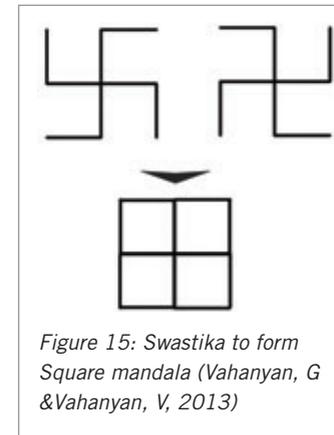


Figure 15: Swastika to form Square mandala (Vahanyan, G & Vahanyan, V, 2013)

One of the temple that was built on the principle of *Mandalas* was *Candi Prambanan*, 9th century Hindu temple at Java. Stupas at *Beikthano* and other *Pyu* cities also followed the principle of *Mandala*. No architectural remains are left for the *Funan* period.

The temple of *Borobudur*, Java, is also built on the same principle. The temple structure resembles a pyramid, yet it has been also referred to as a *chaitya* (shrine), a *stupa* (reliquary) and a sacred mountain. The *Borobudur stupa*, in the ground floor plan is influenced by the *mudras* (positions of hand of Buddha), which are given in the sculptures of the galleries.

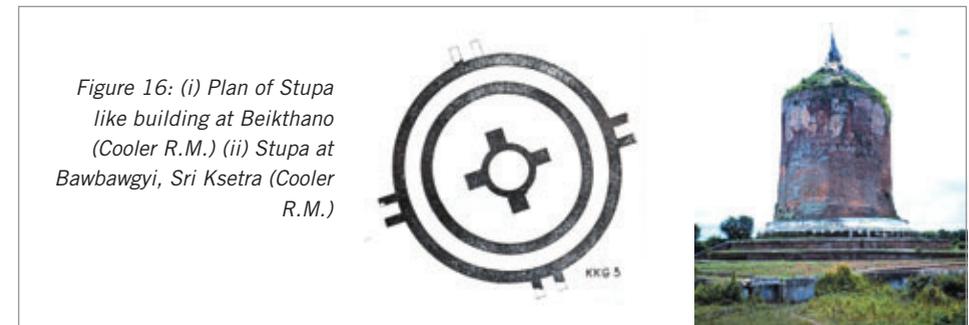


Figure 16: (i) Plan of Stupa like building at Beikthano (Cooler R.M.) (ii) Stupa at Bawbawgyi, Sri Ksetra (Cooler R.M.)

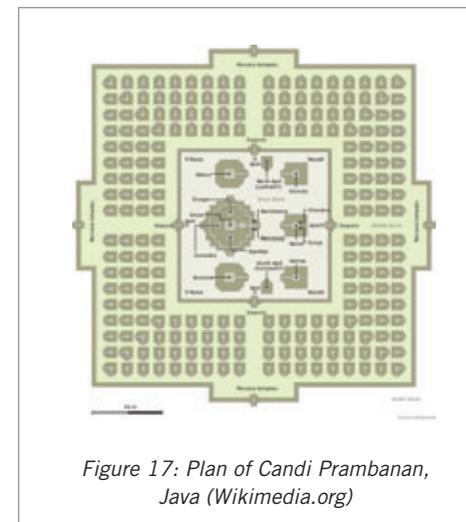


Figure 17: Plan of Candi Prambanan, Java (Wikimedia.org)

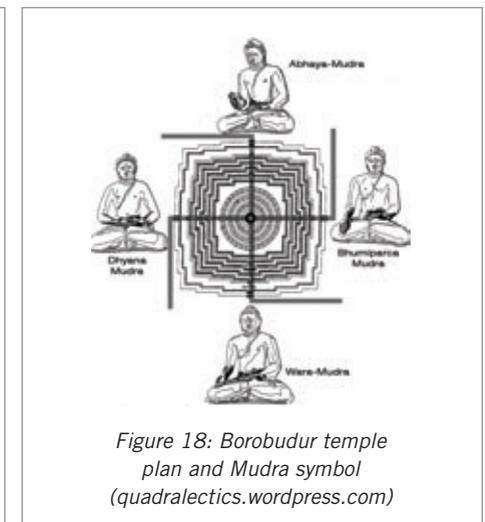


Figure 18: Borobudur temple plan and Mudra symbol (quadralectics.wordpress.com)

Time period III (800 CE - 1500 CE)

During 800 CE-1500 CE, kingdoms of Pagan in Burma, *Angkor/Khmer* in Thailand, Laos and Cambodia, and *Champa* in Vietnam were at power in the mainland Southeast Asia. Buddhism was the primary religion practiced in this region. Authors often attribute this period as the Golden age of the Southeast Asia. *Srivijaya* continued its commercial empire. Some invasions of the Malay world come from the *Cholas* in 11th century and China in 13th century. Indian Muslims traders established small commercial communities in Indonesia. After 1300, Islam became prominent in the region.

Cave Paintings: *Dudumahan* caves, Indonesia have similar solar paintings of this period. Other than the Swastika, symbols like Cross, *Srivatsa* and *Vajra* can be seen (see figure 19). The cruder anthropomorphic figures are dated to be of 14th century, while the concentric, rayed and circular designs are considered to be made around the 1600 CE.

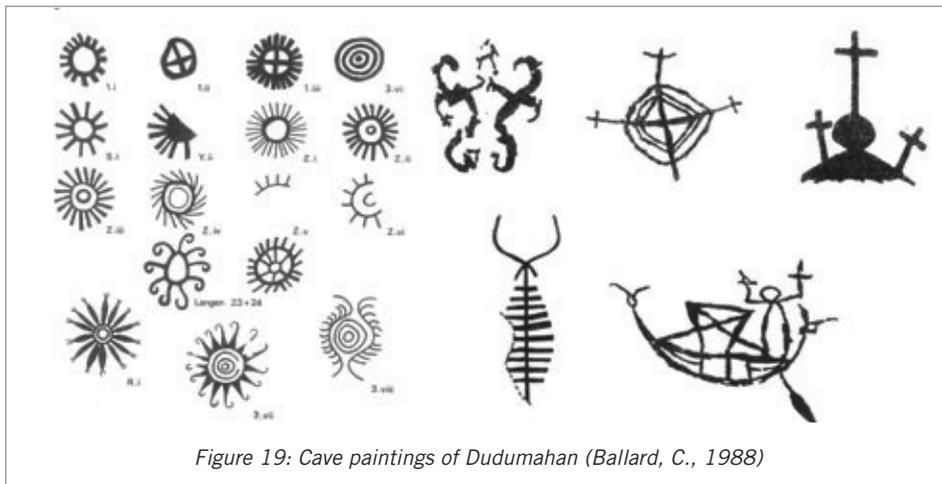


Figure 19: Cave paintings of Dudumahan (Ballard, C., 1988)

Architecture and Planning: Marvellous temples and stupas were constructed which stands till this date during time period III. Most of them were based on the planning principles of Mandala. The city of *Pagan*, is the home for *Shwezigon* Pagoda and *Ananda* Temple. Plans of both can be seen in figure 20.

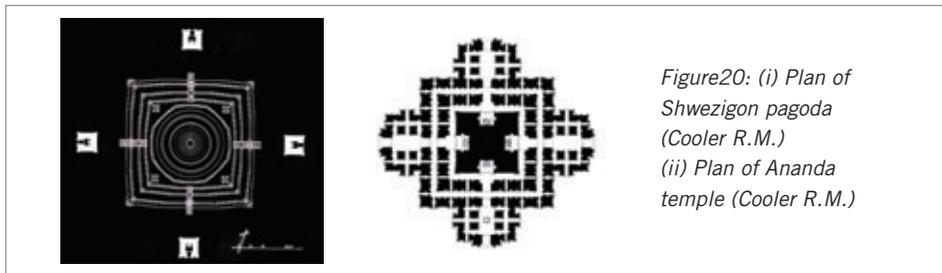


Figure 20: (i) Plan of Shwezigon pagoda (Cooler R.M.)
(ii) Plan of Ananda temple (Cooler R.M.)

Similar planning can be seen in the capital city of Khmer empire, Angkor (in present day Cambodia). It also houses the famous Angkor *Wat* which was originally designed as a *Vishnu* temple. The temple of *Bayon* also shows similarity planning (see figure 22).



Figure 21: (i) Angkor city (Wikimedia.org) (ii) Angkor Wat (Wikimedia.org)

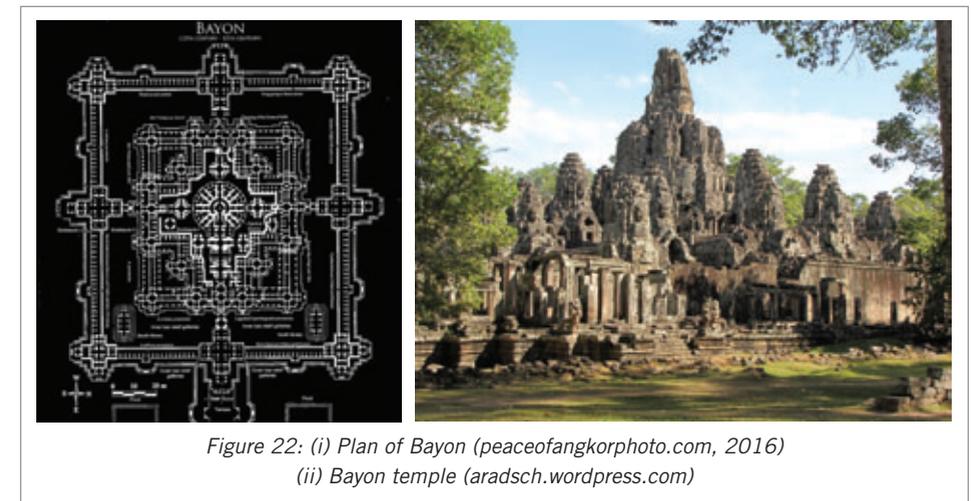


Figure 22: (i) Plan of Bayon (peaceofangkorphoto.com, 2016)
(ii) Bayon temple (aradsch.wordpress.com)

Swastika is also present in temple of *Goa Lawah*, Bali, which is said to be established in the 11th century CE (see figure 23).



Figure 23: Swastika at Goa Lawah Temple, Bali, Indonesia (Wikimedia.org)

Time period IV (1500 CE- present)

It was the era of Colonialism which led to independence and monarchy. The Portuguese took control of Malacca in 1511. Spanish established their capital at Philippines in 1571. In 1641 the Dutch took control over Malacca. In 1863, Vietnam was about to be colonised by the French, and by 1887 France took over Laos, Cambodia and Vietnam. In 1898, USA controlled Philippines. By 1942 Japan took control of Malaya, Singapore, Philippines, and Burma. The sea trade routes were heavily used for the trade of spices for textiles. The kings and the upper class prefer to wear silk and Indian cotton textiles were in demand until machine made products were introduced by Britain in the 19th century.

Artefacts: The locals and the royals of the Malay Peninsula always had a liking for Indian cotton and Chinese Silk. They didn't like the machine woven fabric which was traded by the British. So they started weaving their own clothes (Mohamed, M., 1995). In the clothes, they incorporated the patterns from India and China. The motifs of Swastika, and *banji* (a pattern derived from swastika) were used heavily by them (Hamilton, A. W., 1924).

Similar motif can be found in the entire South-east Asian countries during this period. The indigenous people of the countries have been using similar motifs in the textiles. In Bali and Thailand, the *banji* or swastika is regularly encountered on silk weft *ikat*. It may also be seen in a supplementary weft on *Lao, Shan* and *Kachin* textiles (Sinha, P. C., 2007).



Figure 24: (i) Malay textile (Mohamed, M, 1995) (ii) Batik design from Java (Elliot, I. M.,(2013) (iii) Khmer skirtcloth (Art gallery of New south Wales, Australia) (iv) Pha Hom, Laos (Maxwell, R., 2013)

Meander is another motif which according to Maxwell, is mixed with swastika and is widely used for decorating borders of textiles in the region. Meander is also known as the Greek key or Greek fret design. Some variation of the meander motif which is used in Southeast Asia, can be seen in figure 25.



Figure 25: Meander motif (GEOMETRIS, 2015)

Islamic texts have absorbed some of the existing motifs of *banji*, and swastika, for ornamentation and decoration purposes. An example of this can be seen in Malay Cirebon manuscript, and in illuminated Qur'an from Java (see figure 26).

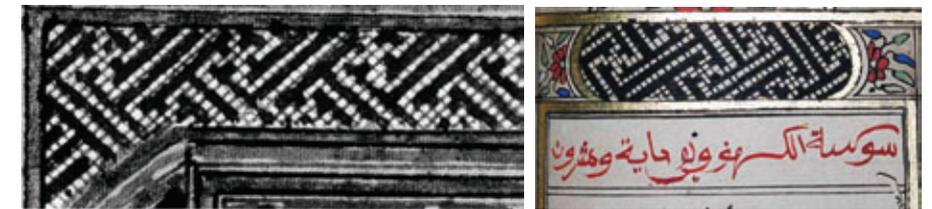


Figure 26: (i) Malay Cirebon manuscript with banji motif (Zakaria and Latif, 2008) (ii) Banji motif in Qur'an, Java (Annabel Teh Gallop, The British Library, London)

Other than the examples discussed above, stamped Swastika glazed porcelain bowl was also found at *Kota Cina*, Indonesia (Edwards Mckinnon 1984: pl. 133).

Architecture and Planning: The swastika motif has been used for architectural decorations. It can be found on leaves of doors, and on tile patterns. Many temples and even mosques built in this era have used swastika for decoration purposes (see figure 27). Swastika can be found at Thailand's Grand Palace's temple grills (Sathāpitānon, N., & Mertens, B., 2012) (see figure 28). It has also been found on the gates of *Tirta Empul* temple near the town of Tampak siring, Bali, Indonesia, and on elevation of the *Pura Besakih* temple, Bali, Indonesia.



Figure 27: (i) Masjid Telok Manok, Thailand (Noor, F., & Khoo, E., 2013) (ii) Masjid Telok Manok, Thailand (Noor, F., & Khoo, E., 2013)



Figure 28: (i) Temple inside Grand Palace of Thailand (Wikimedia.org) (ii) Tanjung Kling Mosque Stairs (Ismail, S., & Yusof, A., 2013)



Figure 29: (i) Gate of Tirta Empul temple, Bali (Sonyaandtravis.com, 2014) (ii) Pura Besakih, Bali (Explorer Bali., 2011)

Mandalay was the capital of Burma for 25 years (1860-1885). The city had the geometrical form of a Buddhist *Mandala*. The Buddhist *Mandala* is the symbolic representation of time and the universe. Pali root word *Mandala* (circular) or "*Mandare*" (believed to mean auspicious land), or *Mandara* (a mountain from Hindu mythology) can all be linked with Mandalay (Soda-thai.com, 2016). There are twelve gates of the royal palace, three evenly spaced along each side. Each gate was surmounted by a square wooden pavilion, a *pyatthat*, and marked with a sign of the zodiac. These gates were replaced by the simple iron gates by the British.

Other areas: A society named "Red swastika society" (a philanthropic and educational society) in Malaysia, incorporates the symbol in their flag and clothes. Their Symbol is an anti-clockwise Buddhist swastika.



Figure 30: The city plan of Mandalay, Burma (Cooler R. M.)



Figure 31: (i) A picture of Red swastika society member (eytanuliel.com) (ii) Red swastika school, Singapore (eytanuliel.com)

In Vietnam, Swastika can be seen over the tombstones in the graveyards (see figure 32).



Figure 32: Swastika in tombstones, Vietnam (mallstuffs.com)

Explanation of the Evidences

Occurrences of Swastika and similar symbols in the time period I (before 200 CE) might be due to reasons like – (i) Swastika being a symbol of sun, (ii) depiction of movement of the sun (iii) represents other cosmos (like the *Ursa Major* constellation) or cosmic activities. According to (Thackeray, F., & Knox-Shaw, P. 1992), the origins of Swastika might be due to a comet. Tail of the comet are represented as the hooked angles of the swastika. They rely on comet atlas found at *Mawangdui*, China for the same time period for their hypotheses (see figure 33).

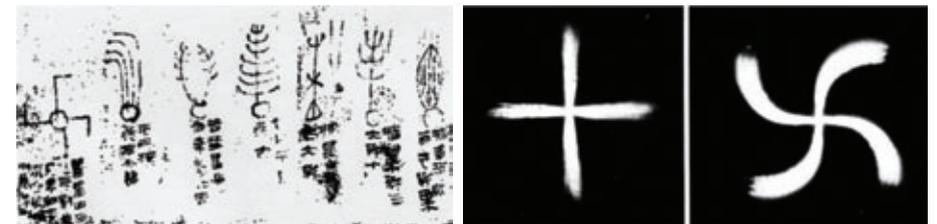


Figure 33: (i) Comet atlas at Mawangdui, China (Thackeray, F., & Knox-Shaw, P., 1992) (ii) Comet jets with cross, and Swastika shape (Thackeray, F., & Knox-Shaw, P., 1992)

For time period II (200 CE – 800 CE), the major vehicle through which the symbol of Swastika might have spread from one place to another is trade and commerce. All the Southeast Asian countries were strongly influenced by the neighbouring countries. Also the sea trade route made them exchange currencies and ideologies. *Jatakas* (see appendix) contain the tales of voyages to *Suvannabhumi* from *Bharukaccha* (Broach), *Suparka* and *Muchiri* (Modern Kranganur), all on the west coast of India, and from *Tamralipti* (tamluk) at the mouth of Ganga. Based on literary evidences it was apparent that all parts of the Indian subcontinent contributed to development of Indian culture in Southeast Asia (Pruthi, R. K., 2004).

For time period III (800 CE-1500 CE), the occurrences of swastika can be explained by Buddhist ideologies. Buddhist stupas and *mandalas* uses repetition of form and the circumambulatory progress of the pilgrim mimics the cosmos as a microcosm. The clockwise movement around the cosmic centre reproduces the macrocosmic path of the sun. Similarly, use of swastika in temple architecture was based on the representation of the cosmos which is eternal and infinite. Both Swastika and mandala are defined as *Yantra*, see appendix for detail (Vedicworld.org, 2016).

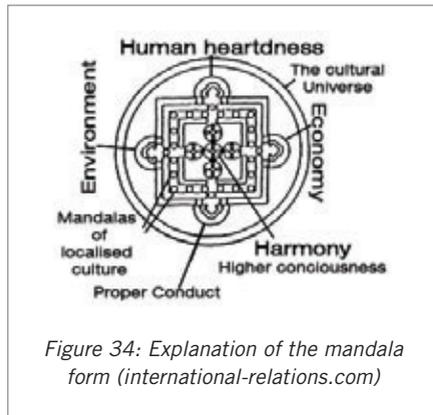


Figure 34: Explanation of the mandala form (international-relations.com)

For time period IV (1500CE-present), Swastika is a symbol of sacredness and auspiciousness. Hence, it has been and is being used in temples, stupas, and pagodas. Other than this, as a symbol of good health, it is being used in textiles in the form of different motifs. Healing mandalas with swastika are also being used for psychological wellness.

Matrix explanation

“Science is not only compatible with spirituality; it is a profound source of spirituality.”
- Carl Sagan

S-C Matrix arranges the countries based on the scientific and heritage patterns. Scientific parameters considered for this research were elements of nature, seasonal cycles, depiction of cosmos, life cycle and psychological well beingness. Heritage parameters for this research were sacred rituals, artefacts, and habitat and patterns. The matrix is filled with names of countries within which it was able to find evidences (see table 2). For example – The temple architecture of Khmer dynasty (like Ankor *wat*, present day Cambodia) depicts the cosmos scientifically and will come under habitat pattern culturally. In a similar way the rest of the matrix is filled.

Similarly, the 3d matrix has been filled with images of the evidences (see figure 35).

Research findings

The places of evidences found in this research are shown in the figure 36 (this excludes the textile evidences as it cannot be spatially pinpointed to a city or place but is a trait of an entire region). This shows that Swastika is present in almost all countries of the Southeast Asia. Intensity of the evidences can be calculated via this figure. Cave paintings of time period I didn't exactly replicate Swastika, but artefacts like pottery and stone tools have the symbol in them. Textiles and architectural planning principles till this date uses swastika. All the selected areas yielded results, hence areas that were selected were good and prominent.

Finding the meaning of swastika in this region was both an easy and a tough job. Swastika used in temples, stupas, and pagodas are easy to decode as they are used to represent Hindu and Buddhist ideologies of eternity, sacredness and auspiciousness. Swastika on textiles is used to denote benevolence. It is hard to say deterministically why Swastika was used on coins and stone tools. For coins, it might represent power/authority/prosperity.

SCIENTIFIC PARAMETERS	Psychological Wellness	Burma Laos Cambodia Thailand	Burma Vietnam Cambodia Malaysia	Burma
	Life Cycle		Burma	
	Symbol of Prosperity & Power	Cambodia	Vietnam Cambodia Malaysia Indonesia	
	Depiction of Cosmos	Malaysia		Burma Laos Cambodia Indonesia Thailand
	Seasonal Changes	Burma Laos	Burma Laos	Thailand
	Elements of Nature	Burma Vietnam	Burma Laos Vietnam Cambodia Malaysia Thailand	Burma Malaysia
	Sacred Rituals			
	Artefacts Art & Crafts			
Habitat & Patterns				
CULTURAL PARAMETERS				

Both clockwise and anticlockwise swastikas are present at Southeast Asia. An abundance of evidence in the area of Architecture and Planning were found for time period II, III and IV, most of which were not included in the above texts because of limitations. Temples, stupas and pagodas of the region has a strong connection with the swastika.

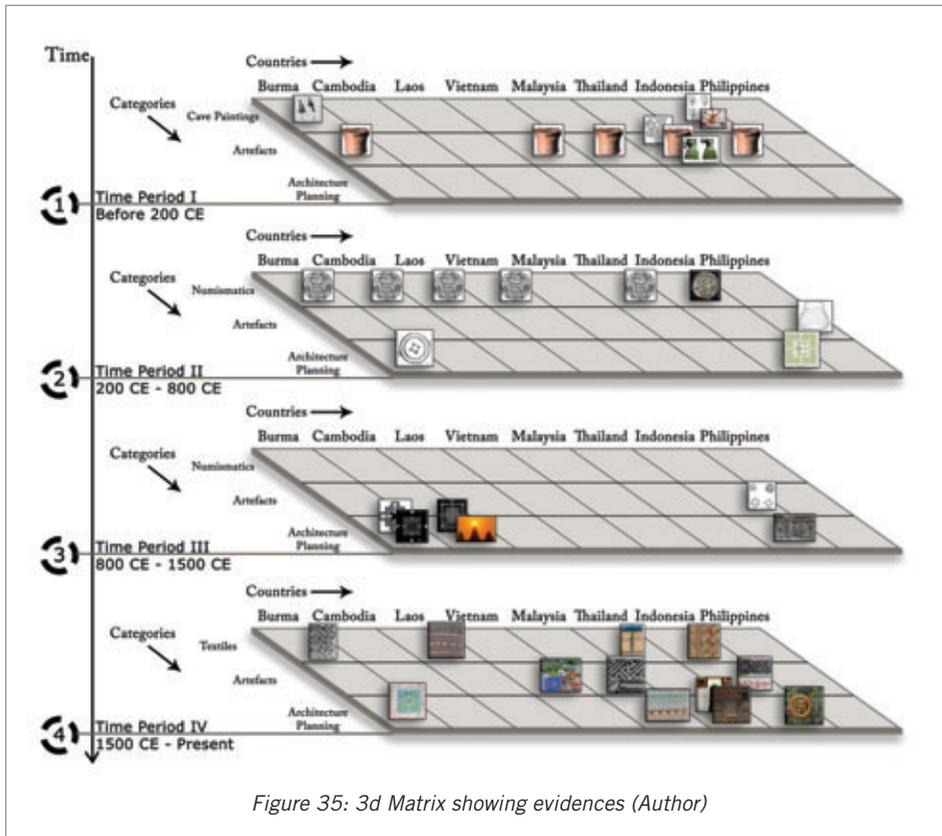


Figure 35: 3d Matrix showing evidences (Author)

Conclusion

“Religion is a culture of faith; science is a culture of doubt.”

- Richard Feynman

Swastika is embedded in the culture of the Southeast Asia. This research tries to breakdown areas, according to time, where the evidences of the use of swastika can be traced scientifically.

Swastika symbolises auspiciousness and sacredness throughout the region. It also represents eternity and prosperity. It has connections with the cosmos and the Sun in particular. For this region, major areas where Swastika was found were architecture and planning principles along

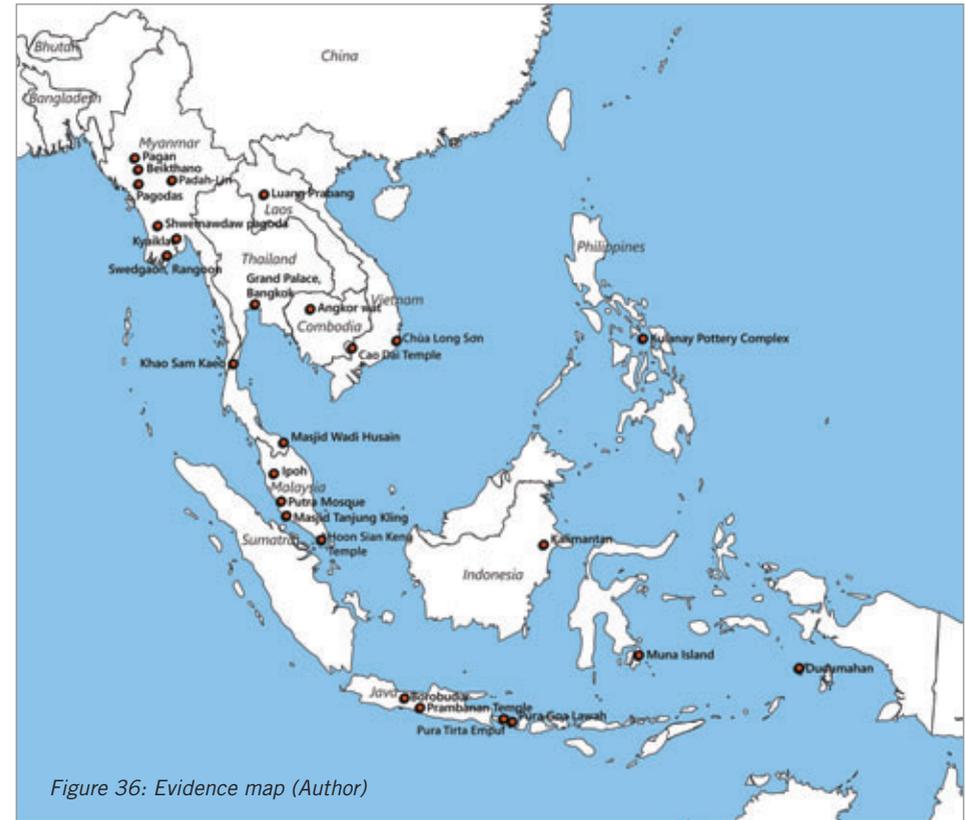


Figure 36: Evidence map (Author)

with artefacts (coins and textiles). The evidences were arranged spatially and with respect to time. With the help of S-C Matrix, the countries were arranged on the basis of the possible scientific and heritage use of swastika. S-C matrix showed that most of the countries had evidences linking to (i) Elements of nature-Artefacts art and craft, (ii) Depiction of cosmos-Habitat & patterns, and (iii) Psychological wellness-Sacred rituals & Artefacts art and craft. Architectural evidences for the time period I (before 200 BCE) are hardly present.

Burma has the highest occurrences of swastika in this study, whereas Philippines had the least occurrences. This doesn't mean that Swastika is not as abundantly present in Philippines as in the rest of the region, rather it means that during the limited research period, researchers were not able to find Swastika in the following countries (though it may exist).

Scope for further research

The scope for this research was limited as it only relied on secondary data. Since no particular documentation was available for the spread of the swastika across the Southeast Asian countries, our job was to search for the evidences. After searching, next step was to consolidate and

document the evidences. This might help future researchers to find more evidences and add to the database that is created from this research. This research can only comment on possible origins of the swastika without any solid proof as it was beyond its scope. Live case studies can also be added to this research. The evidences collected here can be used as a resource for future researches for the origins and the meaning of swastika. Other areas than the ones used (architecture, textiles and cave paintings) can be explored for their linkages to swastika.

Notes for further reference

1. Ikat is a textile art wherein patterns are created by resist dyeing cotton and/or silk yarn before they are woven. This technique is practised across Asia, Latin America and parts of Europe, such as Spain and Holland. Ikat, particularly double ikat, is synonymous with a number of countries including Indonesia and Japan, however, the weaving and dyeing technique has prominent roots in parts of India. It is also synonymous with the fabric made by this process. (Strandofsilk.com, 2016)
2. Jatakas (Pali and Sanskrit: "Birth") are any of the extremely popular stories of former lives of the Buddha, which are preserved in all branches of Buddhism. (Encyclopedia Britannica, 2016)
3. Yantra means a mystical "diagram", "talisman", or "instrument" which, if prepared and created by a qualified "Tantric" (one qualified in the knowledge and practice of Tantra) as well as utilized under their specific instructions for fruitful results, will help to gain the objector objects of desire or ambition. Yantras are used in worship (puja) and can also be an effective instrument used towards the aim of self-realization. They were used by the ancient saints, seers, and rishis. (Vedicworld.org, 2016)

References

Websites

- Alternative Thinking 37. (2012). SWASTIKA for DUMMIES (excerpts from the book). [online] Available at: <https://at37.wordpress.com/2012/02/06/swastika-for-dummies-excerpts-from-the-book/> [Accessed 3 Jun. 2016].
- Asiafinest.com. (2016). Srivijaya Empire. [online] Available at: <http://www.asiafinest.com/forum/lofiversion/index.php/t155468-50.html> [Accessed 5 Jun. 2016].
- Centre, U. (2014). Pyu Ancient Cities - UNESCO World Heritage Centre. [online] Whc.unesco.org. Available at: <http://whc.unesco.org/en/list/1444> [Accessed 2 Jun. 2016].
- Explorer Bali. (2011). Pura Besakih | Explorer Bali - Your ultimate guide to Bali Travel. [online] Available at: <http://www.explorer-bali.com/beta/bali-top-destinations/pura-besakih-2/> [Accessed 13 Jun. 2016].
- Fraser-Lu, S. (2016). Frog Drums & thier importance in Karen Culture - L'Asie Exotique. [online] Lasieexotique.com. Available at: http://www.lasieexotique.com/mag_frogdrums/mag_frogdrums.html [Accessed Jun. 2016].

GEOMETRIS, O. (2015). *SENI RUPA SMA NEGERI 1 JEKULO KUDUS: ORNAMEN NUSANTARA : ORNAMEN GEOMETRIS*. [online] Senirupasaloku.blogspot.in. Available at: <http://senirupasaloku.blogspot.in/2015/07/ornamen-nusantara.html> [Accessed 17 Jun. 2016].

PEACE OF ANGKOR PHOTOGRAPHY. (2016). Bayon. [online] Available at: <http://www.peaceofangkorphoto.com/bayon.html> [Accessed 13 Jun. 2016].

Pinterest. (2016). *Pins from dniewcollectors.blogspot.gr on Pinterest*. [online] Available at: <https://in.pinterest.com/source/dniewcollectors.blogspot.gr> [Accessed 17 Jun. 2016].

Soda-thai.com. (2016). *SODA (Thailand)*. [online] Available at: <http://www.soda-thai.com/project-detail.php?id=118> [Accessed 17 Jun. 2016].

Sonyaandtravis.com. (2014). *Tirta Empul Temple, Water Temple, Bali, Indonesia - Sonya and Travis*. [online] Available at: <http://sonyaandtravis.com/tirta-empul-temple-water-temple-bali-indonesia/> [Accessed 17 Jun. 2016].

TimeMaps Atlas of World History. (2016). TimeMaps. [online] Available at: <http://www.timemaps.com/history/south-east-asia-500ad> [Accessed 13 Jun. 2016].

The Met's Heilbrunn Timeline of Art History. (2016). Southeast Asia, 2000–1000 B.C. | Chronology | Heilbrunn Timeline of Art History | The Metropolitan Museum of Art. [online] Available at: <http://www.metmuseum.org/toah/ht/03/sse.html> [Accessed 13 Jun. 2016].

The One Less Traveled By: a chronicle of my yearlong sabbatical. (2010). Bayon Temple: Cambodia. [online] Available at: <https://aradsch.wordpress.com/2010/02/11/cambodia-2/> [Accessed 6 Jun. 2016].

Vedicworld.org. (2016). *Yantras*. [online] Available at: <http://www.vedicworld.org/yantras/> [Accessed 17 Jun. 2016].

Books and Research articles

Arifin, K. and Delanghe, P., 2004. *Rock Art in West Papua*. UNESCO Publishing.

Bacus, E.A. and Glover, I., 2006. *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists: the British Museum, London, 14th-17th September 2004* (Vol. 10). NUS Press.

Ballard, C., 1988. Dudumahan: a rock art site on Kai Kecil, SE Moluccas. *Bulletin of the Indo-Pacific Prehistory Association*, 8, pp.139-161.

Beer, R., 2003. *The handbook of Tibetan Buddhist symbols*. Serindia Publications, Inc.

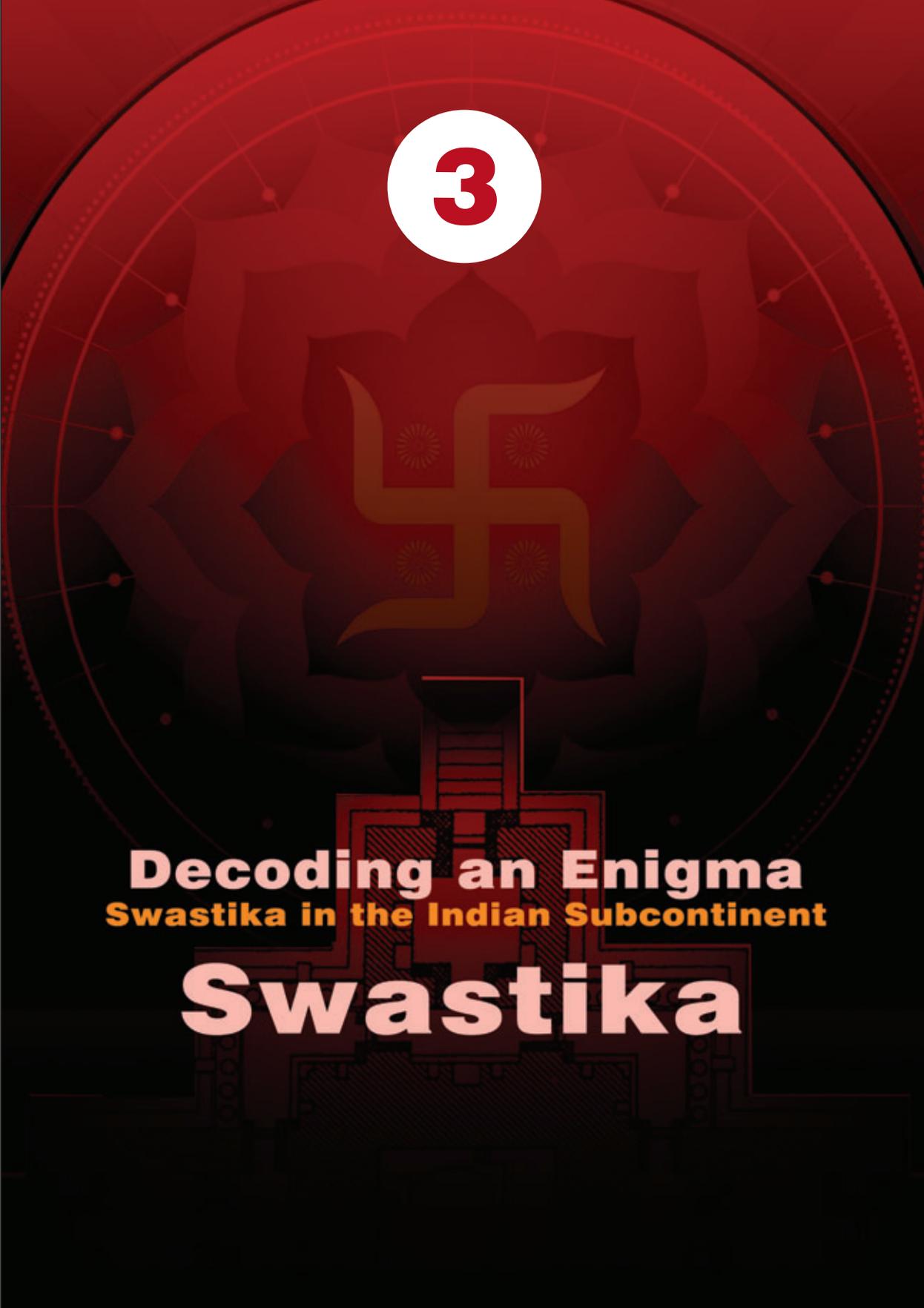
Bellina, B., The Inception of the Trans-National Processes between the Indian Ocean and the South China Sea from an Early City-state on the Thai-Malay Peninsula (Fourth-Second Century BCE).

Bowman, J., 2005. *Columbia chronologies of Asian history and culture*. Columbia University Press.

Chazine, J.M., 2005. Rock art, burials, and habitations: caves in East Kalimantan. *Asian Perspectives*, pp.219-230.

Cooler, R.M., 1995. *The Karen bronze drums of Burma: types, iconography, manufacture, and use* (Vol. 16). Brill.

- Elliot, I.M., 2013. *Batik: fabled cloth of Java*. Tuttle Publishing.
- Gutman, P., 1978. The ancient coinage of Southeast Asia. *Journal of the Siam Society*, 66(pt 1), pp.8-21.
- Hamilton, A.W., 1924. Chinese loan-words in Malay. *Journal of the Malayan Branch of the Royal Asiatic Society*, 2(1 (90), pp.48-56.
- Hudson, B., 2004. The Origins of Bagan: The archaeological landscape of Upper Burma to AD 1300.
- Ismail, S. and Yusof, A., 2013. MOTIF DAN HIASAN CINA DALAM DEKORASI DALAMAN MASJID: KAJIAN TERHADAP MASJID TUA DI MELAKA PADA AWAL ABAD KE 18. *Jurnal Al-Muqaddimah Bil*, 2(1), pp.1-13.
- Maxwell, R., 2013. *Textiles of Southeast Asia: Trade, Tradition and Transformation*. Tuttle Publishing.
- Meyer, M.W., 2000. *Asia: a concise history*. Rowman & Littlefield Publishers.
- Mohamed, M., 1995. The origins of weaving centres in the Malay Peninsula. *Journal of the Malaysian Branch of the Royal Asiatic Society*, 68(1 (268), pp.91-118.
- Pruthi, R.K., 2004. *Indus civilization*. Discovery Publishing House.
- Ros Mahwati Ahmad Zakaria and Latifah Abdul Latif, Lucien de Guise., 2008. *Malay Manuscripts. An Introduction*. Kuala Lumpur, IAMM Publications.
- Said, I., 2012. Art of woodcarving in timber mosques of Peninsular Malaysia and Southern Thailand. *Jurnal Teknologi*, 34(1), pp.45-56.
- Sathāpitānon, N. and Mertens, B., 2012. *Architecture of Thailand: a guide to traditional and contemporary forms*. Editions Didier Millet.
- Sinha, P.C., 2007. *Handbook of ASEAN and regional cooperation: 12th summit & beyond*. Pentagon Press.
- Solheim, W.G., 1957. The Kulanay pottery complex in the Philippines. *Artibus Asiae*, 20(4), pp.279-288.
- Thackeray, F. and Knox-Shaw, P., 1992. Astronomical and entoptic phenomena. *Monthly Notes of the Astronomical Society of South Africa*, 51, p.6.
- Thaw, U.A., 1971. The "Neolithic" Culture of the Padah-lin Caves. *Asian Perspectives*, 14, pp.123-133.
- Wilson, T., 2005. *The Swastika: The Earliest Known Symbol and Its Migration*. Genesis Publishing Pvt Ltd.



3

Decoding an Enigma
Swastika in the Indian Subcontinent

Swastika

When taken in its spiritual sense, the swastika purely and simply replaces the wheel in Hindu iconography. It is, however, also the emblem of Ganesha, god of knowledge, and sometimes a manifestation of the Supreme Principle. Freemasons fall into a category of strictly observing cosmographical symbolism when they regard the centre of the swastika as the Pole Star and the four gammas which it comprises as the four cardinal positions of the Great Bear around it, which might help to elucidate Guenon's remark quoted above.

The Penguin Dictionary
of Symbols

Decoding an Enigma: Swastika in the Indian Subcontinent

Anshuman Dubey¹, Kanthamani KH², Stetson³, Sunil Kumar Prasad⁴, Sunny Bansal⁵

Introduction

Swastika is a Sanskrit word where 'su' means good or well and 'asti' means to be. Thus, 'Suasti' or 'Swasti' means well-being or fortune. 'Ka' intensifies the verbal meaning and therefore, Swastika is literally translated as 'that which is associated with well-being'. Swastika is one of the oldest symbols made by humans and dates back to some 6,000 years in rock and cave paintings.

The interpretation of Swastika varies in different religions. It is a potent emblem of *Sanatana* Dharma, the eternal truth. In Hinduism, it stands for auspiciousness, prosperity, and good fortune and also represents sun and lifecycle. Symbolically, the cross represents God and creation, and the four bent arms stand for the four human aims or *purushartha*- righteousness (Dharma), wealth (*Artha*), love (*Kama*), and liberation (Moksha). It also denotes the world wheel, eternally changing around a fixed centre, God. It is regarded as a symbol of the *muladhara* chakra, the centre of consciousness at the base of the spine. It is one of the 108 symbols of the Hindu God 'Vishnu' as well as Sun God 'Surya'. The symbol imitates, in the rotation of its arms, the course taken daily by the sun, which appears in the Northern Hemisphere to pass from east, then south, to west. The left-hand swastika (called a *Sauvastika*) usually represents Goddess 'Kali', night, and magic.

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Both the Swastikas (left and right) are also commonly used in Buddhism. Usually found in the images of Buddha on his chest, palms, and soles of feet, it originally symbolised the footsteps of the Buddha in the Buddhism. In Jainism, Swastika delineates its seventh saint and the four arms placed clockwise also stand for the four possible places of rebirth: the animal or plant world, hell, earth, or the spirit world. The Swastika is also considered as a hooked version of the Christian Cross.

Apart from its religious significance, the symbol has been extensively used worldwide. In the early 20th century Rudyard Kipling, an English journalist, poet, and novelist, used it in his books and as his coat-of-arms. American pilots put it on planes during World War I. Swastika has great significance in yoga as well. Hindus use Swastika to mark the opening pages of account books, thresholds, doors, offerings, etc. as it is believed to have the power to ward off misfortune and negative forces. The symbol was also used in Nazism flag for “the mission of the struggle for the victory of the Aryan man, and, by the same token, the victory of the idea of creative work”.

Innumerable evidences and applications of Swastika are traced throughout the world. However, the main intriguing question arises regarding the continuous sustenance of the symbol. This solidifies the notion that Swastika is much more than a symbol and its related cultural-religious beliefs. It has manifold aspects related to sciences of spirituality, astronomy, cosmology, physics, and .The Swastika's right-angled arms reflect the fact that the path towards the objectives is often not straight, but takes unexpected turns. They denote also the indirect way in which Divinity is reached-through intuition and not by intellect.

Study Region

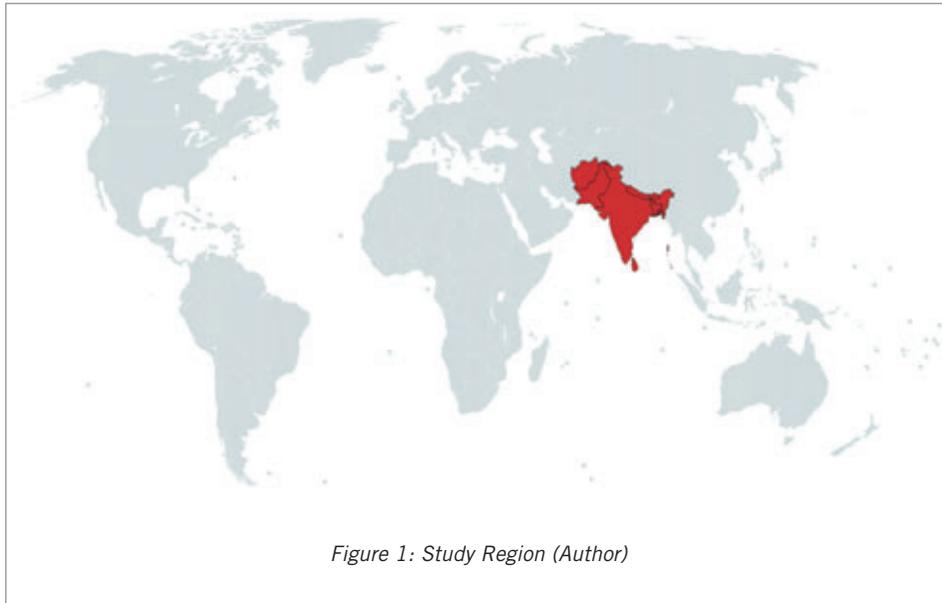
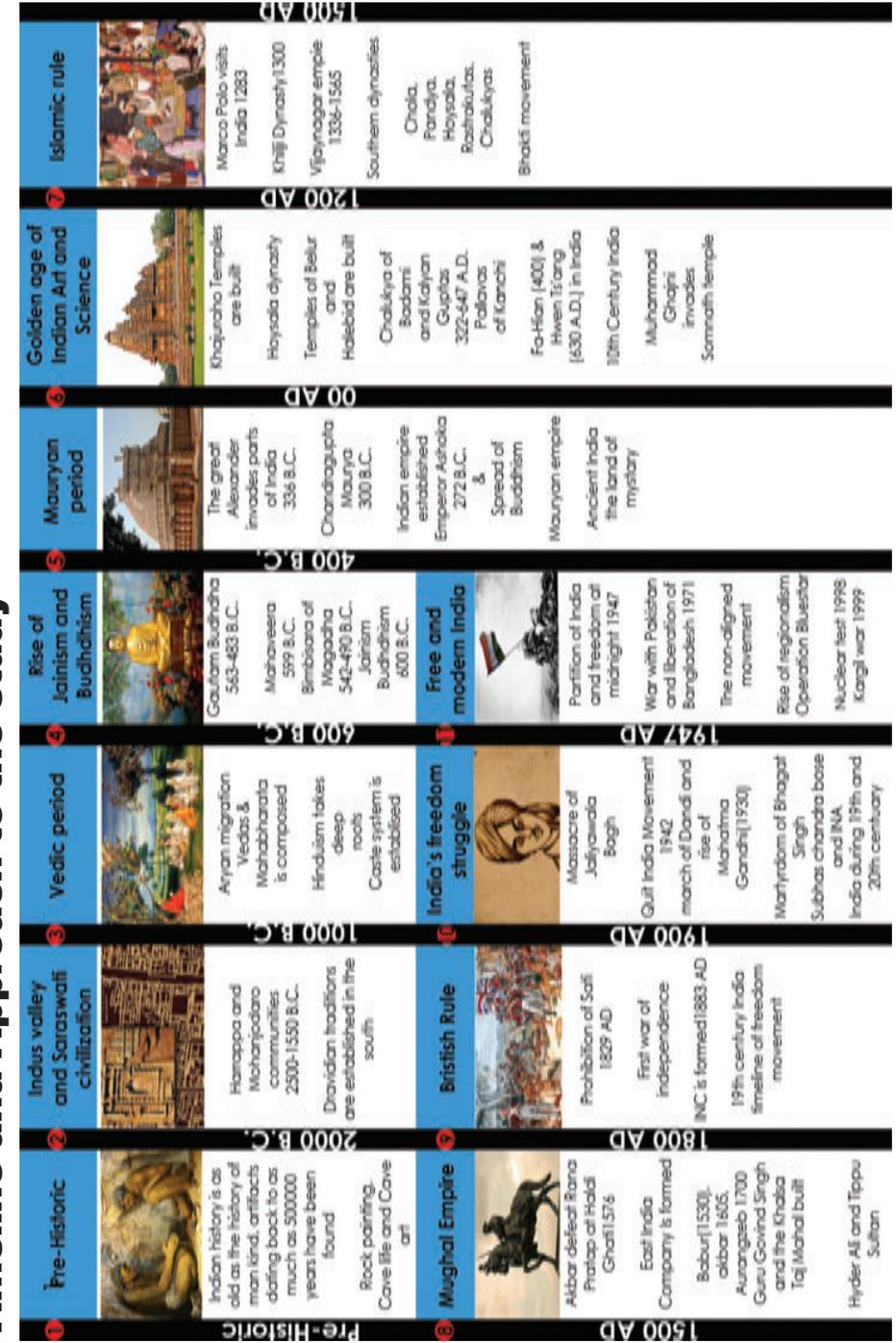


Figure 1: Study Region (Author)

Timeline and Approach to the study



Components of research and Conceptual framework

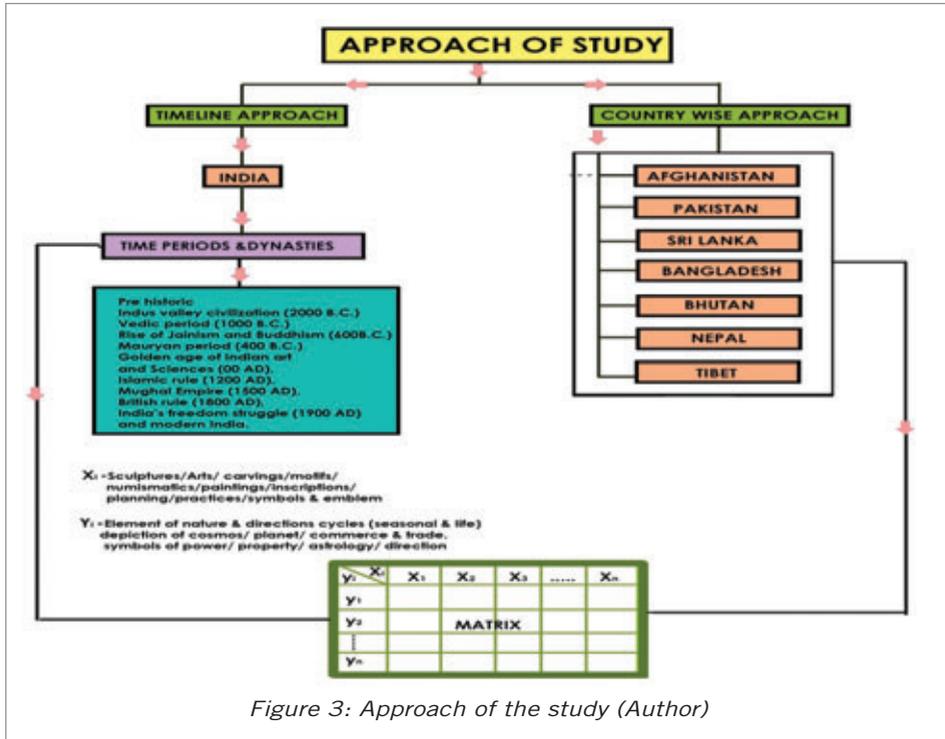


Figure 3: Approach of the study (Author)

Innumerable examples have been found which shows the existence of Swastika in various regions in the Indian subcontinent and the countries around. This research is an attempt to consolidate various evidences and findings on the basis of timeline of Indian history. Indian history timeline has been divided in 11 different periods based on the existence of different dynasties ranging from Prehistoric to Post-independence i.e. modern India. These are Prehistoric, Indus valley civilization (2000 BCE), Vedic period (1000 BCE), rise of Jainism and Buddhism (600 BCE), Mauryan period (400 BCE), Golden age of Indian art and Sciences (00 CE), Islamic rule (1200 CE), Mughal Empire (1500 CE), British rule (1800 CE), India's freedom struggle (1900 CE) and modern India. Periods are then further subdivided on the basis of the different dynasties that existed during those periods. The countries around India like Afghanistan, Bangladesh, Tibet, Sri Lanka, Pakistan, Bhutan, and Nepal has been covered separately. The study is based on the matrix with scientific and heritage parameters and the evidences or findings are classified in the cells wherever it fitted best.

Indus valley civilization

Indus Script hieroglyph



Figure 4: Harappa Swastika Seals, (Kenoyer, 2014)

In the context of archaeo-metallurgical indicators, the swastika hieroglyph multiplex seems to have connoted an alloying process of zinc with other minerals to create pewter or brasses of various kinds. Swastika hypertexts appear in remarkable contexts of Indus Script 'Corpora' which help prove the early significance of this hieroglyph related to metal casters and turners' work involving creation of new alloys during the Bronze Age. (Kalyanaraman, 2015) Swastika hieroglyph multiplex is a remarkable hypertext of Indus Script 'Corpora', which signify *catalogus catalogorum* (alphabetical catalogue of all Sanskrit manuscript collections known at the time) of metal

work. Swastika signifies zinc metal. This validates Thomas Wilson's indication - after a wide ranging survey of migrations of the hieroglyph across Eurasia and across continents that swastika symbol connoted a commodity, apart from its being a hieroglyph, a sacred symbol in many cultures. (Kalyanaraman, 2015)



Figure 5: Harappa Swastika Seals, (Kalyanaraman, 2015)



Figure 6: Local Tribal coin symbols (Anon., 2007)

The distinction between pictorial motifs and signs gets blurred in many compositions presented in the script inscriptions. Thus, a swastika appears together with an elephant or a tiger. Swastika is also a sign-'Sign 148'. The drummer hieroglyph is associated with swastika glyph on this tablet (har609) and also on (h182A) tablet of Harappa with an identical text.

It is hypothesised that the inscriptions on copper plates and the symbols on punch-marked coins made in the mines of smiths are the work of inheritors of the *Sarasvati* brazier-smithy-tradition. Local Tribal coin symbolism of different places like Ujjayini, Tripuri, Ayodhya, Almora, Panchala, Arjunayana Rajanya Uddehika, Audumbara, Kuninda,

Kuluta, Yaudheya, Ksatrapa, Satavahana shows sufficient evidences of swastika in it (Kalyanaraman, 2015).

The Indus Script is the writing system developed by the Indus Valley Civilization and it is the earliest form of writing known in the Indian sub-continent. During the early *Harappan* phase (c.

3500-2700 BCE), the earliest known examples of the Indus Script signs are found, attested on *Ravi* and *KotDiji* pottery excavated at Harappa. Its full development was reached during the Urban period (2600-1900 BCE) (Violatti, 2015).

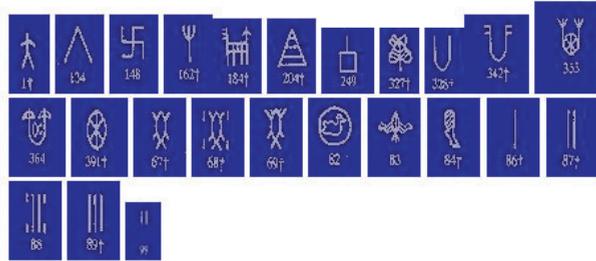


Figure 7: Hieroglyph sign list (Anon., 2007)

Objects

Surprisingly the Swastika is one of the symbols that have been found in many other forms since then. Various kinds of geometrical patterns on Indus objects are analysed and are generally found on small - rectangular and circular seals - often having a boss at the back or two button-like holes at the centre. Some objects of irregular shapes also resemble different form of swastika. A large fraction of the Indus objects are of rectangular shape and have various types of geometric designs on them (Violatti, 2015).

Talpur (1994) has extensively worked on the geometry of button seals, especially on the Swastika, stepped cross motifs and designs with diagonals and circles. Geometric designs on the button seals seem to conform to certain specific set of rules and indicate the usage of a standard set of proportions that may have been culturally acceptable.



Figure 8: Inscription showing Swastika (Kalyanaraman, 2015)



Figure 9: Third variation of Swastika (Vahia & Yadav, 2010)



Figure 10: The '+' design (Vahia & Yadav, 2010)



Figure 11: Grid design (Vahia & Yadav, 2010)



Figure 12: Other variations in Swastika (Vahia & Yadav, 2010)



Figure 13: Circular objects with 4-fold symmetry (Vahia & Yadav, 2010)



Figure 14: Objects with 5-fold symmetry (Vahia & Yadav, 2010)



Figure 15: Object with 6-fold symmetry (Vahia & Yadav, 2010)



Figure 16: Objects of 7-fold symmetry (Vahia & Yadav, 2010)



Figure 17: Objects with eight-fold or higher symmetry (Vahia & Yadav, 2010)



Figure 18: Objects with inscribed concentric circles (Vahia & Yadav, 2010)



Figure 19: Miscellaneous objects (Vahia & Yadav, 2010)

Vedic Period

Hinduism has its deep root in the Vedic period and Mahabharata & Vedas were composed in this period. The period ranges from 1500 to 500 BCE.

Interpretation

The word 'Swasti' appears in the Vedas and Upanishads. It is also found in many *shanti-paths* including (mundaka-upanishad).

ॐ भद्रं कर्णेभिः शृणुयाम देवाः ॥ भद्रं पश्येमाक्षभिर्यजत्राः ॥
स्थिरैरङ्गैस्सुहृद्वाग्मस्तनुभिः ॥ व्यजेम देवदत्तं यदायुः ॥
स्वस्ति न इन्द्रो वृद्धश्रवाः ॥ स्वस्ति नः पूषा विश्ववेदाः ॥
स्वस्ति नस्तार्क्ष्यो अरिष्टनेमिः ॥ स्वस्ति नो बृहस्पतिर्दधातु ॥
ॐ ज्ञानिः ज्ञानिः ज्ञानिः ॥

Which is translated as –“May we hear good with the ears, and see good with the eyes. May our body be strong and healthy, may we sing praises. *Indra*, who is well-praised, is good for/to us. *Pusha* (पूषा), the all-knowing, is good for/to us.

Tarkshya (तार्क्ष्य), the all saving is good for/to us. *Brihaspati* (बृहस्पति) is good for/to us. Let there be three-fold peace”. Here the word 'Swasti' is used four times, in lines 3 and 4, as the first word of each half - स्वस्ति. In Hinduism, the right-hand Swastika (Dakshinavarta) is a symbol of the Sun and the God Vishnu, while the left-hand Swastika (Vamavarta) represents Kali and magic (Joshi, 2010).

In Sanskrit language, '*Su*' means good or well and '*asti*' means to be, thus '*Suasti*' or '*Swasti*' means well-being. '*Ka*' intensifies the verbal meaning, and thus '*Suastika*' or '*Swastika*' might be translated literally as 'that which is associated with well-being'. Also, the horizontal line in the Swastika is considered as '*Shiva*' or consciousness and vertical line is considered as '*Shakti*' or energy and the combination is the ultimate God, *Brahma*. The right-handed swastika also considered as a resemblance of Vedic deity Lord *Ganesha* (symbol of creation) and his four qualities are represented by the four hands of the Swastika, i.e., purity,

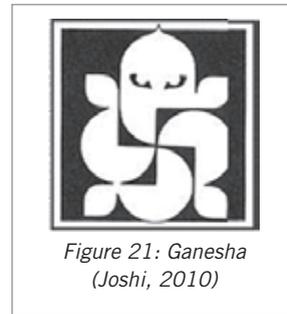


Figure 21: Ganesha (Joshi, 2010)

auspiciousness, innocence, and supreme devotion to the Universal Mother principle.

Town and village Planning

In Sanskrit, *Vastu* means habitation and *Su* means good and thus, Swastika might also be an amalgam of these terms and mean 'a good habitation'. Hence, it has been used in town planning also. Here, two main streets cross each other at the centre, running south to north and west to east (Rangwala, 2015).



Figure 22: Town Planning (Rangwala, 2015)

Fort Planning

In conventional forts, the fall of one of the gates to the attacking army would lead to the Enemy's pour into the fort and lead to massacre or capture of all or most of its inhabitants. But in Swastika grids, fall of one of the four gates could still keep at least three-fourth of the fort safe (Birodkar, 1997).

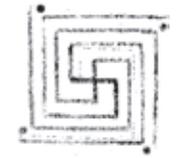


Figure 23: Swastika Fort Planning (Birodkar, 1997)

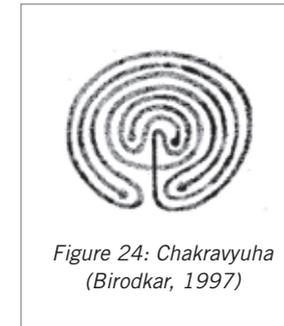


Figure 24: Chakravyuha (Birodkar, 1997)

Defence Arrangement

Grid like the Swastika as a defensive arrangement was corroborated by the military practice of *Chakravyuha*. In the *Chakravyuha*, the army formed Swastika as a defensive arrangement in the form of a circular grid which an enemy army was supposed to break. It is a multi-tier defensive formation that looks like a blooming lotus or disc when viewed from above. The warriors at each inter leaving position would be in an increasingly tough position to fight (Birodkar, 1997).

Yoga

Darsana Upanishad (Part of the Sama Veda), compiled around 1000 BCE, summarizes the principles and practice of yoga based on the *Yogasutras* of *Patanjali*. Yoga has nine important *Asanas* (sitting positions) of which Swastika is an important one. *Swastikasana* is a simple meditation posture where the position of the legs resembles Swastika. This position may be described as one that helps to understand the unity of existence (Ramachander, n.d.).

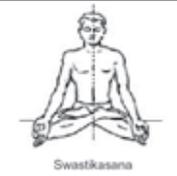


Figure 25: Swastikasana (Ramachander, n.d.)



Figure 26: Swastika on Buddha's chest (Buddhism Beta, 2014)

Buddhism

The Swastika represents the Heart of the Buddha, resignation of spirit, all happiness that humanity desires, mind, and infinity.

- Blue Swastika stands for infinite celestial virtues.
- Red Swastika stands for infinite sacred virtues of the Heart of Buddha.
- Yellow Swastika stands for infinite prosperity.
- Green Swastika stands for infinite virtues of agriculture.

The term *Sauwastika* is sometimes used to distinguish the left-facing from the right-facing swastika symbol,

a meaning which developed in 19th century. In Buddhism, the left-facing swastika is imprinted on the chest, feet, palms of Buddha and also the first of the 65 auspicious symbols on the footprint of the Buddha (Religion Facts, 2015).

Mandala

The basic concept of Mandala is that everything that exists is of the nature of cycles of time.

Outer Mandala: In the Universe with its many galaxies and solar systems, one can see endless cycles of change playing out over the past, present, and future.



Figure 28: Kalachakra (Tibetan Buddhist Rime Institute, 2013)

Inner Mandala:

Kalachakra can be understood to be the very subtle structures of a person's body and mind, but also the dynamic influence that the mind/body complex has on the surrounding universe.

Deepest Mandala: At this ultimate level, unchanging cycle of time, union is depicted by the *Kalachakra* deity in union with his consort. Our sacred truth lies in this deepest absolute level. Human beings are able to purify their coarse perceptions and experiences, through practicing with their subtle body and mind, and thus unveiling the complete *Mandala of Kalachakra* (Tibetan Buddhist Rime Institute, 2013).

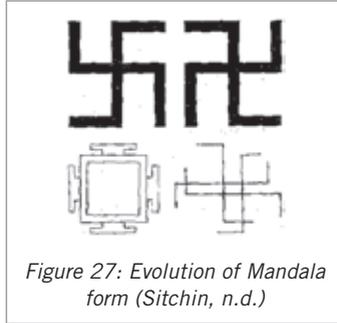


Figure 27: Evolution of Mandala form (Sitchin, n.d.)

Spread of Buddhism

Spread of Buddhism remains a major cause for the spread of Swastika. It started from the Buddhist heartland in northern India (dark orange) in 6th century BCE, to Buddhist majority realm (orange), and historical extent of Buddhism influences (yellow), *Mahayana* (red arrow), *Theravada* (green arrow), and *Tantric-Vajrayana* (blue arrow).

Jainism

Swastika is an important Jain symbol. The four arms of the swastika symbolize the four states of existence as per

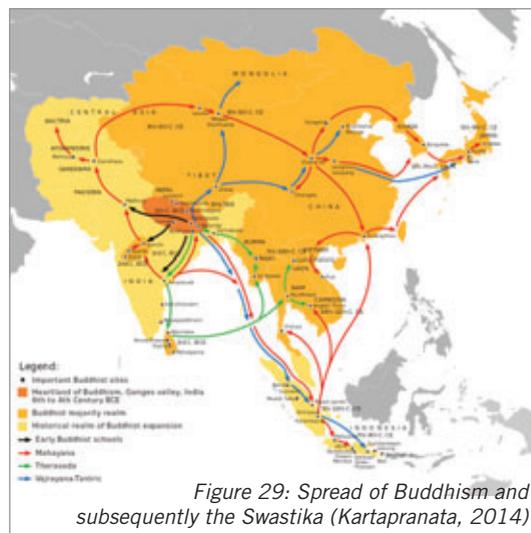


Figure 29: Spread of Buddhism and subsequently the Swastika (Kartapranata, 2014)

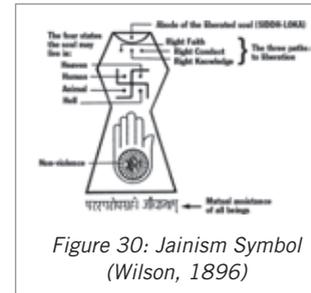


Figure 30: Jainism Symbol (Wilson, 1896)

Jainism, i.e. Archaic or protoplasmic life, Plant and animal life, Human life, and Celestial life (Wilson, 1896). The horizontal and vertical lines crossing each other at right angles represent spirit and matter. Four other bended right arms of the cross, three circles and the crescent, and a circle within the crescent symbolise that there are four grades of existence of souls in the material universe.

All these graduations are combinations of matter and soul on different scales. The spiritual plane is that in which the soul is entirely freed from the bonds of matter. In order to reach that plane, one must strive to possess the three jewels (represented by the three circles), right belief, right knowledge, right conduct. When a person has these, he will certainly go higher until he reaches the state of liberation, which is represented by the crescent. The crescent has the form of the rising moon and is always growing larger. The circle in the crescent represents the omniscient state of the soul when it has attained full consciousness, is liberated, and lives apart from matter. The interpretation, according to the Jain view of the cross, has nothing to do with the combination of the male and female principle. (Wilson, 1896)



Figure 31: Ayagapata foliage motif (Kalyanaraman, 2016)

Ayagapata Foliage motif

An *Ayagapata* or Jain homage tablet, with small figure of a *tirthankara* Jain prophet in the centre and inscription below, was found in Mathura, India. It has a Swastika symbol in it and is an example of the 'swastika within the swastika' (Kalyanaraman, 2016).

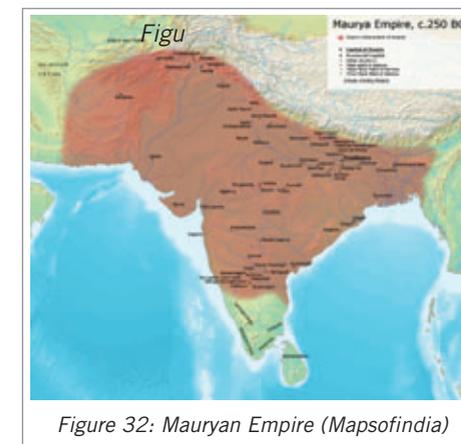


Figure 32: Mauryan Empire (Mapsofindia)

Mauryan Period

The Mauryan Empire in Indian history was reined by the rulers from the Mauryan dynasty which was strong and powerful in all respect including the political aspects and military aspects.

The Swastika was noticed for the first time on coins of post-Mauryan city *Janapadas* and continued right up to the time of the Sultanate period and Mughals before being abandoned under British rule and re-introduced post-independence in Republic India coins.

Stupa Design

The ground plan of the 'Great Stupa' of Sanchi indicates the four gateways (or *toranas*), which were later added to make the plan look like a swastika. In fact Stupas at Sanchi, Bharhut, Amaravati and Manikyala are all of similar ground plan and elevation. Double railing surrounds them, by four projecting gateways or toranas facing the four cardinal points with the return railings of the four projecting entrances forms a gigantic swastika mystic cross of the Buddhists.

All the inscriptions records from these stupas are in *Brāhmī* script and is described as “*Swasti* of Sanskrit is the *Suti* of *Pali* - the mystic cross, or Swastika is only a Monogrammatic symbol formed by the combination of the two syllables, *Su*+*ti* = *Suti*” (Kalyanaraman, 2016).

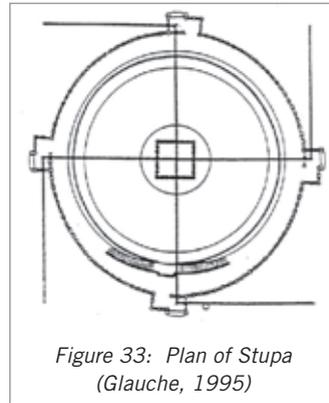


Figure 33: Plan of Stupa (Glauche, 1995)

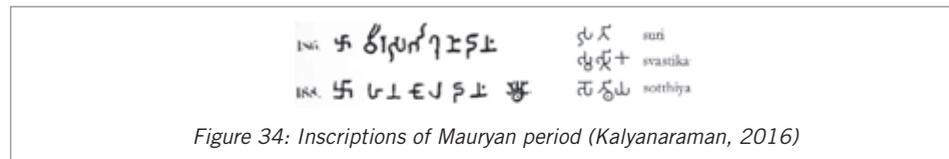


Figure 34: Inscriptions of Mauryan period (Kalyanaraman, 2016)

Bharhut



Figure 35: Swastika evidences at Bharhut (Dutta, 2010)

Stupa at Bharhut was built by the Mauryan king Ashoka in the 3rd century BCE. It is known for its famous relics where Swastika has been extensively used for auspicious and decorative purposes on different sculptures, namely (Dutta, 2010):

1. Pillar medallion
2. Coping stone
3. Corner pillar compartment
4. Railing corner pillar
5. Cross bar panel
6. Railing corner pillar
7. Railing corner pillar
8. Cross bar panel
9. Cross bar medallion

Taxila

Artist representation of Stupa on 40 paisa postage stamp used a World Heritage Site at Taxila in Pakistan Jaulian (Pant & Funo, 2007).



Figure 36: Stamp (Pant & Funo, 2007)



Figure 37: Taxila coin with the 'reverse' Swastika (Pant & Funo, 2007)

Sarnath

Brahmi inscriptions on the main pillar depict Swastika along with some other symbols on the stupa. (G., 2011).

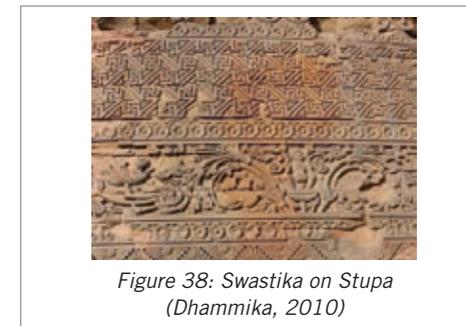


Figure 38: Swastika on Stupa (Dhammika, 2010)

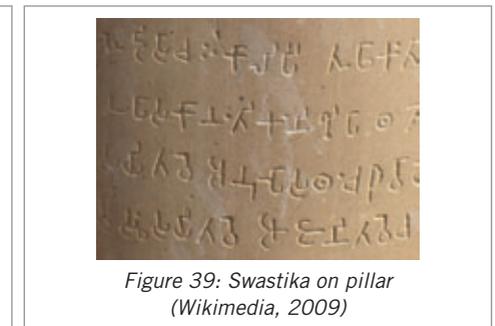


Figure 39: Swastika on pillar (Wikimedia, 2009)

Bodhgaya

A deer with Swastika at Nyingma Tibetan Buddhist monastery in Bodhgaya, Bihar is an example of modern application of Swastika.

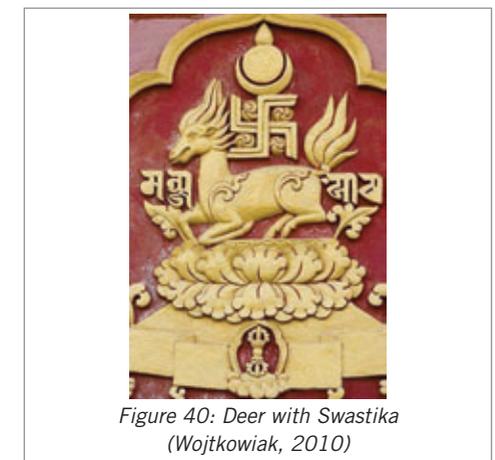


Figure 40: Deer with Swastika (Wojtkowiak, 2010)

Coins

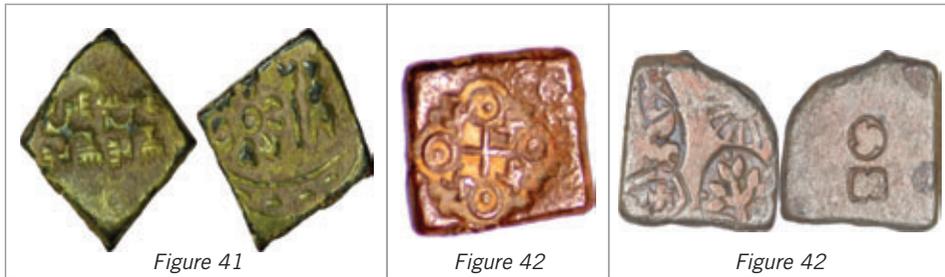


Figure 41

Figure 42

Figure 42

Figure 41: Ujjain, (MP) 200-100 BC, Copper, Ujjain symbol with Swastika between orbs
 Figure 42: VidarbhaJanapada, 250-200 BC, Punchmark coin, debased silver, Swastika (bottom left)
 Figure 43: Saurashtra (Gujarat), 100 BC, Copper, Double Swastika with Nandi-pad arms (Singh, 2015)



Figure 44

Figure 45

Figure 46

Figure 44: Kuninda (odisha),Amogabhuti, 200-100 BC, Silver Drachm, Swastika on Reverse
 Figure 45: Paratras of Baluchistan, Koziya, 230-270 AD, Copper drachm, Swastika with Brahmi legend around
 Figure 46: Ujjain, 200-100 BC, Copper, Shiva type, Swastika within orbs of Ujjain symbol (Singh, 2015)



Figure 47: Punch Marks on Ancient Indian Coins resembling Swastika (SBSS Technologies, 2016)



Figure 48: Various Symbols on Punch Marked Coins, Delhi National Museum (Drashokn, 2015)

Golden age of Indian Art and Sciences

1. Gupta Empire (320-540 CE) (Boundless, 2016)

Chandra Gupta 1 was the real founder of the Gupta Empire. He came to the throne in 320 CE and laid the foundation of Gupta Era on 26 February 320 CE.

2. Chalukyas of Badami (540-757 CE)

In 535 CE, Pulikeshi 1st founded a small kingdom with the capital at Vatapipura (modern Badami). Pulikeshi 2nd was the most famous ruler of the Chalukya Dynasty. The magnificent temples of Belur and Halebidu and the Elephanta caves were constructed during the Chalukyan period.

3. Pallavas (645 CE)

Simhavishnu was the founder of the Pallava dynasty. Narasimhavarman, a Pallava ruler, defeated Pulikeshi 2nd and adopted the title Vatapikonda. Narasimhavarman 2nd was the most important ruler of the Pallavas dynasty. He founded Kailasanatha Temple and Shore Temple at Mahabalipuram.

4. Hoysala Dynasty (1026-1343 CE)

5. Kandariya Mahadeva Temple- circa 1030 CE (Nagara style)

6. Konark Sun Temple-1255 CE (Nagara style)

7. Vijayanagara Empire (1446-1520 CE)

The founders of Vijayanagar Empire were Harihara and Bukka Rai. They founded the dynasty in 1336 CE with the capital of Vijayanagara on the bank of Tungabhadra River with the help of Saint Vidyanaya. Vijayanagar Kingdom lasted for 230 years and produced four dynasties namely:

- Sangama (1336-1485)
- Saluva (1485-1505)
- Tuluva (1505-1565)
- Aravidu (1565-1672)



Figure 61: Coins in Pallava Dynasty (Ancient Indian coins, 2011)



Figure 62: Swastika shaped temple tank, Pundarikakshan Perumal Temple (Muthusamy, 2014)



Figure 63: Swastika dancing posture (Muthusamy, 2014)

the street around the temple. It has four stepped gateways, each having 51 steps. The tank is believed to have been built by Kamban Araiyan during the reign of Dantivarman (Muthusamy, 2014).

4. Hoysala Dynasty (1026-1343)



Figure 64: Hoysala Dynasty (Mapsofindia)



Figure 65: Chakra in Hoysala Dynasty (Cantillano, n.d.)



Figure 66: Swastika on the ceiling of Badami Temple (Channappa, 2012)

5. Kandariya Mahadeva Temple- circa 1030 CE (Nagara style)

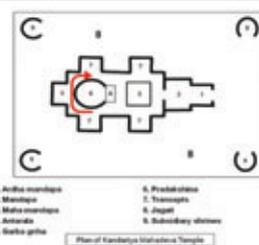


Figure 67: Layout plan of Kandariya Mahadeva Temple using the 64 pada grid design, Khajuraho (Tangopaso, n.d.)



Figure 68: Vastu Purusha Mandala Manduka grid layout (Kelkar, 2015)

The planning of the Kandariya Mahadev Temple follows Vastu Purusha Mandala where Mandala means circle, Purusha is universal essence at the core of Hindu tradition, while Vastu means the dwelling structure (Tangopaso, n.d.).

6. Konark Temple-1255 CE (Nagara style)

Konark Sun Temple is a 13th-century temple at Konark in Odisha, India. It is believed that the temple was built by king Narasimhadeva I of Eastern Ganga Dynasty in 1255 CE. Dedicated to the Sun God, Surya the entire



Figure 69: Sun Temple, Konark (UNESCO WHC, 2016)

structure of the main temple is like a huge chariot, with twelve pairs of wheels pulled by seven horses. Each of these wheels is intricately carved and scientifically designed, such that its spokes serve as sun dials and can tell the time of the day. These wheels are interpreted as a form of Swastika (UNESCO WHC, 2016).

7. Vijayanagara Empire

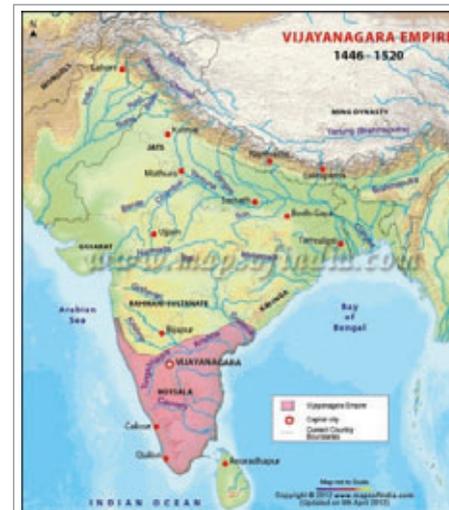


Figure 70: Vijayanagara Empire (Mapsofindia)



Figure 71: Vijayanagara Empire Coins (Rajgor's Auctions, 2012)

A number of evidences in the form of numismatics are traced like Garuda or Hanuman resembles to that of Swastika and the posture of Lord Vishnu is in Swastika Asana.

Mughal Period

The Mughal Empire was an empire based in the Indian Subcontinent, established and ruled by a Muslim Persianate dynasty of Chagatai Turco-Mongol origin that extended over large parts of the Indian subcontinent and Afghanistan from 1526 to 1540 and 1555 to 1857 CE (Kaetana, 2014).

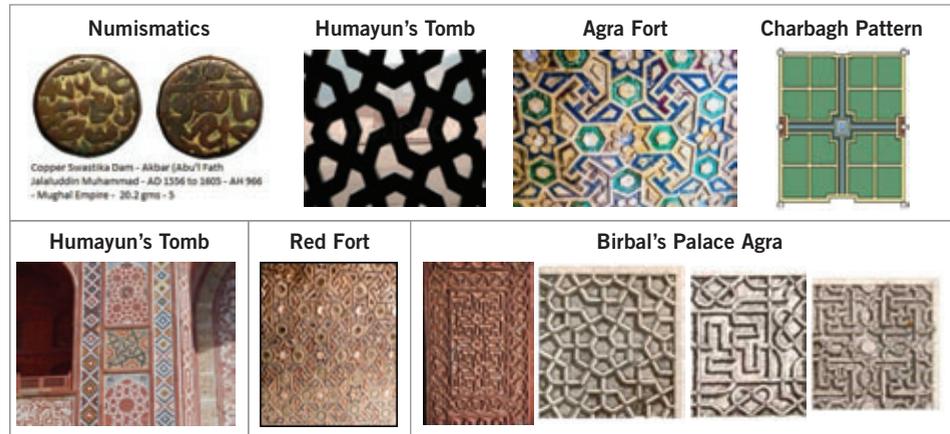


Figure 72: Swastika in Mughal era (Sen, 2015) (Uma, 2011) (Kaetana, 2014)

In the early 17th century, local red sandstone was used with ornate marble inlay (including Koranic calligraphy in letters at least a foot high). Chevrons, eight-pointed stars, and octagonal designs are common, but the incorporation of the swastika is found to be an interesting Indic touch (Uma, 2011). Floral designs display several symbolic representations including the Star of David (Judaism), a green hexagon (Islam), and Swastika (Christianity or Hinduism). The idea of circumambulatory path having four quarters of the Char Bagh Garden replicates the four cardinals of the Swastika form (Sen, 2015).



Figure 73: White swastika 6 pence war savings coupon (National (War) Savings Committee, 1916)

British Rule

The Anglo-Indian author Rudyard Kipling (1865–1936), who was strongly influenced by Indian culture, used a swastika as his personal emblem on the covers and flyleaves of many editions of his books, along with the elephant,



Figure 74: Kipling cover art (Swastikas on the wedding dress (Kattlewa, 2014)

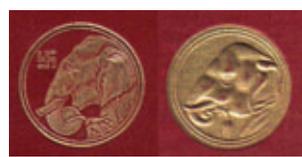


Figure 75: Swastika Seal from Rudyard Kipling book (Farmer, 2004)



Figure 76: Scanned image of Swastika logo from Rudyard Kipling book (Farmer, 2004)

signifying his affinity with India. With the rise of Nazism, Kipling ceased to use the swastika. One of his *Just So Stories*, 'The Crab That Played With The Sea', included an elaborate full-page illustration by Kipling including a stone bearing what was called 'a magic mark' (Farmer, 2004). The all over 'water-marked paper' used for the production of the first Indian Postage Stamps in 1854 has the East India Company's 'Coat-of -Arms' comprising England's Red Cross flags of St. George (Kattlewa, 2014).

Modern India



Figure 77: Independence Day celebration, Mundan ceremony - Hindu Ritual (Author), Used as symbol, Shri Yantra, (Author) (Swastika, 2016)



Figure 78: Modern application of Swastika- Temple, textile, wall art, funeral, currency, 'puja thali', 'rangoli' (art), music, dance, tattoo, painting (Lang & Blackswan, 2010) (Swastika, 2016) (Author)

The symbol known as the Sri Yantra is an ancient Hindu symbol comprised of nine triangles that are interlaced in such a way as to form 43 smaller triangles in a web said to be symbolic of the entire cosmos. The 64 tetrahedron grid is also the foundational seed geometry of the fabric of the vacuum according to Nassim Hamein's Unified Field Theory i.e. everything is connected by the structure of space (Lang & Blackswan, 2010).

Swastika is an important Hindu symbol. It is traced with the finger with vermilion on the head or body during Hindu rituals and on doors on festival days - notably on Diwali. It is painted on almost every vehicle. In all these uses it is a lucky charm protecting from evil and attracting good. The architecture is influenced heavily by the principles of the Swadeshi movement of the early twentieth century and the use of canonical texts and ancient symbols like Swastika. Swastika is deep rooted in the Indian culture. It has found its place in almost every aspect of life varying from currency, dance form, religious places, decoration, different kind of arts, in the ceremonial activities, rituals etc.

Pakistan



Figure 79: Pāratārājas coin (Tandon, 2015)

Pāratārājas were a dynasty of kings who ruled an area that is now in the western Pakistani province of Baluchistan, from the 1st century to the 3rd century CE. The coins found in this region are dated back from second and third centuries and 'Coin Galleries of Pāratārājas' catalogue was published in Volume 2 of 'Catalogue of Indo-Scythian Coins' (Tandon, 2005). The coin catalogue presented below lists the coins in their chronological order.



Figure 80: Pāratārājas coin (Tandon, 2015)

- Coin 1** Yolamira, silver drachm, early type c. 125-150 CE
- Coin 2** Arjuna, silver drachm, early typec. 150-165 CE
- Coin 3** Hvaramira, silver drachm, early type c. 165-175 CE
- Coin 4** Mirahvara, silver drachm, early typec.175-185 CE
- Coin 5** Mirahvara, silver hemidrachm late type c. 175-185 CE
- Coin 6** Mirahvara, silver hemidrachm early type c. 175-185 CE
- Coin 7** Mirahvara, silver drachm, late typec.175-185 CE
- Coin 8** Miratakhma, silver drachm, late typec. 185-200 CE
- Coin 9** Kozana, silver drachm late type c. 200-225 CE
- Coin 10** Bhimarjuna, billon drachm late type c. 225-235 CE

Bangladesh

The first coins in Indian subcontinent were minted around the 6th century BCE by Mahajanapadas of the Indo-Gangetic plain (present Bangladesh). Punch-marked coins dated between 6th and 2nd centuries BCE had various symbols 'punched' manually and separately. There were symbols of human figures, artefacts, arms, various forms of hills, animals, trees and fruits, floral and geometrical patterns and religious symbols like Swastika. Archaic Silver Punch-marked Coin (c.350-330 BC), 4 symbol coins of the Meghna - Padma divide, copper cast coins have been found in the archaeological sites of the Early Historic period.



Figure 82: Bengali Swastika (Bengali Hindu, 2010)

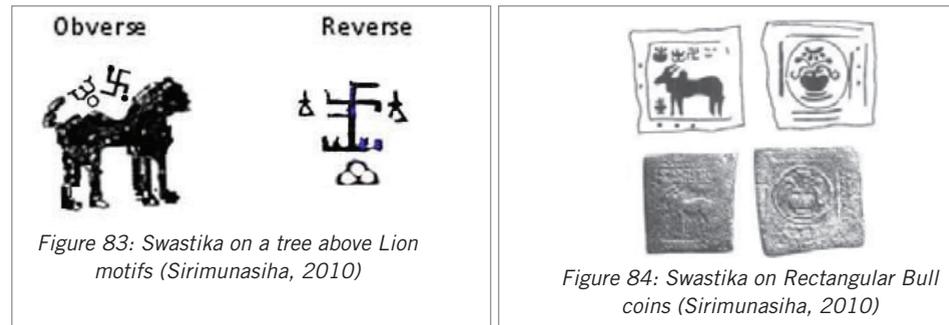
The unique religious symbol, used by the Bengali Hindus of India and Bangladesh is commonly referred to as Swastika (BengaliHindu, 2010)



Figure 81: Silver and copper coins (Classical Numismatic Gallery, n.d.)

Sri Lanka

It is famous for its ancient Buddhist ruins, including the 5th-century citadel *Sigiriya*. Swastika symbolises as Sun, a rotating disc (auspicious symbol), and Chakra Yudhaya, a powerful weapon of Chakravarti (Universal king). Several pre-modern coinages are also found. These coins have tree inscribed on them, called a Bo-tree, which has religious significance to the Buddhists. Swastika belongs to the set of eight symbols which depicts the Anavatapta or the Male (Sirimunasiha, 2010). Swastika was also used on the mast of the ships (Sirimunasiha, 2010).



Nepal

The Buddhist community believes that the city was planned in shape of the *dharmachakra*, the Buddhist wheel of law, which recalls Swastika. Patan city shows connection between Buddhist symbolism and south Asian concept of urban design in the Indus valley (Mohan Pant, 2007). According to *Vastushastra*, it is *Sarvatobhadra* (Swastika Pattern). The block of four wings is laid in such a way that each of the quadrangles creates cyclic order.

Swastika is extensively used in the modern Nepal like electoral ballot papers are stamped with a round swastika and logo of Nepal Chamber of Commerce, etc. (Nepal Chamber of Commerce, 2016)



Tibet

In Tibet it is not unusual for the monks to get swastika tattoos as an outward show of their spirituality. The throne of Dalai Lama is decorated with four Swastikas and is found throughout Tibet on everyday items and as a mark denoting monasteries (Cantillano, n.d.).



Figure 87: Symbol of auspiciousness (Enacademic, 2014)



Script

Character of a Bön script called Zhang Zhung or smar-chen swastika used as part of the character by turning anti-clockwise. More of the Zhang Zhung script spells out 'yungdrung' which is the word used for swastika and translates as 'unchanging well-being'. Calligraphy art piece is made using the words young 'drung' to form the shape of a swastika (Related Tibetan Scripts, 2011).



Stone inscription

Swastika in Tibet, flanked by sun and moon, exists from the Iron Age (1300 BC – 600 BC). The swastika, sun and moon are still key cosmological and religious symbols in Tibet and often grace classical religious art. However, it is not prudent to attempt to transfer their historic meanings in to the prehistoric cultural setting (Landon, 2014).

The counter-clockwise swastika is the symbol of the Bon religion par excellence, but its origins as a rock art motif go back to prehistory. On the other hand, Tibetan Buddhists use the clockwise swastika, setting them apart from the Bonpo in an easily recognizable way. The swastika depicted here was painted in red ochre (oxides of iron), the most common pigment used in Iron Age (Bellezza, n.d.).

It was around 1000 years ago that the direction of the Swastika became a marker of religious affiliation. In prehistoric rock art Swastikas are oriented in both directions with no apparent differences in their mytho-ritual context. Early swastikas have arms turned to align with the opposite side. These non-standard swastikas resemble birds. Birds and swastikas were well-known solar symbols in Eurasia, possibly accounting for the hybrid design in Tibet (Bellezza, n.d.).

In Buddhist and Bon art, the sun often cradles a crescent moon, signifying the union of the methods and wisdom that lead to enlightenment. In more ancient rock art the sun and moon usually appear separately on stone surfaces. In this composition the two of them were carved in conjunction with a swastika. The sun with its spokes and hub resembles a chariot wheel (Bellezza, n.d.).



Figure 95: Swastika on Iron Age stone (Landon, 2014)



Figure 96: Tibetan rock art (Bellezza, n.d.)

Afghanistan

Indo Scythian (200 BCE–400 CE)

Buddhist statues in Afghanistan in the second or third century B.C. provide a definite proof that the region was inhabited at that time by Hindus and Buddhists. Hari Rud (Arius) River in the northwest corner of the country and the words Arius and Ariana reflect Aryan presence in Afghanistan. Scythian conquered the Indo-Greek Kingdom. The Indo-Scythians are a subset of the much larger nomadic tribe known as the Scythians, the Sakas or the Indo-Iranian Sakas.

After the decline of the Indo-Scythians, the Hindus were governing and inhabiting the country. They ruled the country till the end of the seventh century when the Arabs conquered Afghanistan and the people of Afghanistan embraced Islam.

Human figures by the Buddhist sculptors of Gandhara (presently Kandahar) are found dating back to 3rd century BCE. Also, silver coins of Vijayamitra in the name of Azes with Buddhist 'triratna' symbol in the left field on the reverse are found showing the evidences of Swastika.

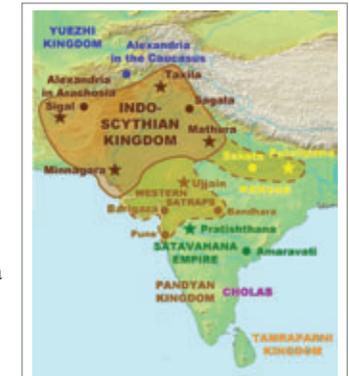


Figure 97: Indo Scythian Kingdom (mapsofindia)



Figure 98: coin of Vijayamitra (Anon., 2006), (Anon., 2007)

Indo-Greek Kingdom (180 BCE – 10 CE)

A 'triratna' or three-jewel symbol on the pad of the big toe, and the other four toe-tips are marked by a swastika was found in Gandhara (presently Kandahar). The 'triratna' mark is a felicitous symbol and symbolizes the three jewels of Buddhism - the Buddha, the Buddhist Law (dharma), and the community of practitioners (*sangha*) (Schumacher, 2007).



Figure 99: Footprint of Buddha (Gandhara/ Swat Area, Pakistan)

Research findings

Evidences has been traced in the form of “manuscript, practices, arts, printing, symbols, emblem, motifs, sculptures, numismatics, carvings, and planning (temple, town and city)” with the manifestations of “element of nature, directions, cycles (seasonal and life both), depiction of cosmos, commerce and trade, symbols of power and prosperity, rituals, education, science, and directions”. It is interesting to note that maximum evidences were found in numismatics in different periods and architecture (carving, motifs, sculptures, planning) in different regions of the Indian subcontinent starting from ancient to recent history. However, prevailing and widespread application of Swastika is found in pottery, textiles, art, dance, music, rituals, and almost every aspect of contemporary life in this region, especially in India, Nepal, Bhutan, and Tibet.

Conclusion

After the extensive research of the evidences of Swastika found in the Indian subcontinent, it can be confidently stated that Swastika is truly a 'living' ideogram. Existence of Swastika has been traced since the establishment of civilisation in the region and a continuous application of its direct and modified versions is widely present till date. It is prevalent in almost every trait like religious ceremonies, art, architecture, planning, coins and seals, textiles, wall decorations, etc. Also, it is fascinating to note the symbol is omnipresent among the major religions of the region and can be connoted as a thread weaving them together. The symbol is associated with luck, well-being, and some or the other form of God and thus, holds a higher position in these religions. It is “the most sacred and mystic symbol” of the region.

Despite its modern controversial connotations due to its misappropriation as the symbol of Nazism, the symbol still holds the highest spiritual value to Hindus, Buddhists, and Jains. It symbolises auspiciousness or “all is well” attitude. It represents Fohat, the cosmic electricity, and its four arms signify rotation and continual motion of the invisible forces of the universe and time-cycle. However, given the vastness of the study region and innumerable evidences found, there is still a high scope of further research to augment and project the origin and essence of Swastika.

“Applied to the *Microcosm*, Man, it shows him to be a link between heaven and Earth: the right hand being raised at the end of a horizontal arm, the left pointing to the Earth. ... It is at one and the same time an Alchemical, Cosmogonical, Anthropological, and Magical sign, with seven keys to its inner meaning. It is not too much to say that the compound symbolism of this universal and most suggestive of signs contains the key to the seven great mysteries of Kosmos. ... It is the *Alpha* and the *Omega* of universal creative Force, evolving from pure Spirit and ending in gross Matter. It is also the key to the cycle of Science, divine and human; and he who comprehends its full meaning is for ever liberated from the toils of *Mahamaya*, the great Illusion and Deceiver. ... So ancient is the symbol and so sacred, that there is hardly an excavation made on the sites of old cities without its being found.” – H.P. Blavatsky, “The Secret Doctrine” Vol. 2

References

Ancient Indian coins, 2011. *Arun's Collection Of Ancient Indian Coins*. [Online]
Available at: http://ancientcoinsofindiaaruns.blogspot.in/2011/01/blog-post_10.html
[Accessed 11 June 2016].

Anon., 2006. *Silver coin of Vijayamitra in the name of Azes*. [Online]
Available at: <https://en.wikipedia.org/wiki/Indo-Scythians#/media/File:AzesIITratna.jpg>

Anon., 2007. [Online]
Available at: https://en.wikipedia.org/wiki/File:Coin_Ele_Swa_Rev.jpg

Anon., 2007. *Location of Greco-Bactrian Kingdom*. [Online]
Available at: https://en.wikipedia.org/wiki/Greco-Bactrian_Kingdom#/media/File:Greco-BactrianKingdomMap.jpg

Anon., 2007. *Sarasvati hieroglyphs*. [Online]
Available at: <https://sarasvathieroglyphs.wordpress.com/>
[Accessed 13 June 2016].

Anon., 2007. *Silver coin of the Indo-Scythian king Azes II (r. c. 35–12 BC)*. [Online]
Available at: https://en.wikipedia.org/wiki/Indo-Greek_Kingdom#/media/File:AzesIIFineCoin.jpg

Anon., 2008. *Location of Indo-Greek Kingdom*. [Online]
Available at: https://en.wikipedia.org/wiki/Indo-Greek_Kingdom#/media/File:Indo-Greeks_100bc.jpg

Anon., 2012. *Alamy*. [Online]
Available at: <http://www.alamy.com/stock-photo-fatehpur-sikri-india-hindu-swastikas-and%20floral-designs-in-decoration-47954322.html>

Anon., 2013. *bumblebeetraveller's Blog*. [Online]
Available at: <https://bumblebeetraveller.wordpress.com/2013/10/29/wednesday-wonders-red-fort-agra-india/>

Anon., 2013. *Trip to the Chalukyan Era – VIII – Durga Temple complex – Aihole's celebrity*. [Online]
Available at: <https://highwayonlyway.com/2013/02/22/trip-to-the-chalukyan-era-viii-durga-temple-complex-aiholes-celebrity/>
[Accessed 23 May 2016].

Anon., 2015. *Тибет-класс: тибетский язык, культура, философия*. [Online]
Available at: https://new.vk.com/wall-58194049?offset=520&z=photo-14188603_365906856%2Fwall-58194049_2633
[Accessed May 29 June 2016].

Anon., 2016. *Swastika Symbol: Its Meaning and Significance...!*. [Online]
Available at: <http://www.penmai.com/forums/spiritual-queries/84689-swastika-symbol-its-meaning-significance.html>
[Accessed 24 June 2016].

Anon., n.d. [Online]
Available at:
http://1.bp.blogspot.com/_WSQsPuiQ9Nc/Sj_wr3gsQ3I/AAAAAAAAABJA/jziCvai8le0/s200/2+taxila+coins+BCE.jpg

Anon., n.d. [Online]
Available at: <http://dennyja-world.com/images/ency/Buddhism.jpg>

Anon., n.d. [Online]
Available at: <https://indiacoinsmarks.files.wordpress.com/2013/10/punch-mark-coin-marks-7.png>

Anon., n.d. [Online]
Available at:
https://upload.wikimedia.org/wikipedia/commons/0/02/Plan_of_Kandariya_Mahadeva_temple.jpg

Anon., n.d. *Ancient Goths*. [Online]
Available at: http://oldgoths.blogspot.in/2009_06_01_archive.html

Anon., n.d. *Badami*. [Online]
Available at: <https://thinkmatter.in/2014/11/03/badamithe-capital-of-vatapi-chalukyan-kings/#jp-carousel-1170>

Anon., n.d. *Badami Caves*. [Online]
Available at: <http://10yearitch.com/india-travel-tour/karnataka/badami-caves/>

Anon., n.d. *Coins*. [Online]
Available at: http://www.ebanglapedia.com/en/article.php?id=1357&title=Coins#.V1pd4_196hd

Anon., n.d. *Coins | BanglaPedia*. [Online]
Available at: www.ebanglapedia.com

Anon., n.d. *Pallava Dynasty Map*. [Online]
Available at: <http://www.mapsofindia.com/history/pallava-dynasty.html>

Banerjee, M., n.d. *PINTREST*. [Online]
Available at: <https://in.pinterest.com/pin/391531761328854298/>

Bellezza, J. V., n.d. *Pictographs*. [Online]
Available at: <http://www.himalayanart.org/search/set.cfm?setID=3108>
[Accessed 15 June 2016].

BengaliHindu, 2010. *Bengali Swastika.png*. [Online]
Available at: https://commons.wikimedia.org/wiki/File:Bengali_Swastika.png
[Accessed 31 May 2016].

Birodkar, S., 1997. *Hindu Symbols and Symbolisms*. [Online]
Available at: http://www.hindubooks.org/sudheer_birodkar/hindu_history/omkar.html
[Accessed 24 May 2016].

Boundless, 2016. *The Golden Age of India*. [Online]
Available at: <https://www.boundless.com/world-history/textbooks/boundless-world-history-i-ancient-civilizations-enlightenment-textbook/early-civilizations-in-the-indian-subcontinent-4/the-gupta-empire-29/the-golden-age-of-india-119-13221/>
[Accessed 20 June 2016].

Buddhism Beta, 2014. *Buddhism Stackexchange*. [Online]
Available at: <http://buddhism.stackexchange.com/questions/3824/what-is-the-symbol-sometimes-depicted-on-images-of-the-buddha-which-looks-like-a>
[Accessed 24 May 2016].

Bye, O., 2016. *The Maurya Empire*. [Online]
Available at: <http://www.scoopwhoop.com/Video-Shows-How-Much-The-Map-Of-India-Has-Changed/?ref=social&type=fb&b=0>

Cantillano, R., n.d. *Swastika carved in Tibet's Sera Monastery*. [Online]
Available at: <https://in.pinterest.com/pin/556827941409690934/>

Classical Numismatic Gallery, n.d. [Online]
Available at: classicalnumismaticgallery.com
[Accessed 29 May 2016].

Dhammika, S., 2010. *Of Aryans, Nazis And Buddhists*. [Online]
Available at: <http://sdhammika.blogspot.in/2010/03/of-aryans-nazis-and-buddhists.html>
[Accessed 25 May 2016].

Drashokn, 2015. *Punch Marks on Ancient Indian Coins*. [Online]
Available at: <https://drashokn.wordpress.com/2014/08/15/punch-marks-on-ancient-indian-coins/>
[Accessed 8 June 2016].

Dutta, R., 2010. Swastika Symbol on Bharhut Stone Railing: A Case Study. *Ancient Asia*, Volume 2, p. 147–154.

Enacademic, 2014. *Swayambhunath*. [Online]
Available at: <http://en.academic.ru/dic.nsf/enwiki/2034877>
[Accessed 13 June 2016].

Farmer, M., 2004. *Wikipedia, Rudyard Kipling*. [Online]
Available at: https://en.wikipedia.org/wiki/File:Kipling_swastika.png
[Accessed 27 May 2016].

G., S., 2011. *Sarnath: The birthplace of Buddhism*. [Online]
Available at: <https://thatandthisinmumbai.wordpress.com/2011/10/31/sarnath-the-birthplace-of-buddhism/>
[Accessed 30 May 2016].

Glauche, J. W., 1995. *Der Stupa: Kultbau des Buddhismus*. Cologne: DuMont Verlag.

Image, n.d. [Online]
Available at: <http://3.bp.blogspot.com/-uvN6Ep5AUE0/VOVZvukt-xI/AAAAAAAAE6Y/YsPaZ-4Vajw/s1600/Akbar%2B-%2BCopper%2BSwastika%2BDam-%2B5.jpg>

Joshi, S., 2010. *Om ath Sanskritam*. [Online]
Available at: <http://blog.practicalsanskrit.com/2010/09/misunderstood-swastika.html>
[Accessed 2 June 2016].

K.L.Kamat, n.d. *Chalukyan Swastika*. [Art].

Kaetana, 2014. *Colourbox*. [Online]

Available at: <https://www.colourbox.com/image/traditional-islamic-ornament-period-of-mughal-empire-with-swastika-at-sandstone-grill-on-medieval-window-humayun-s-tomb-delhi-india-image-9940772>

[Accessed 31 May 2016].

Kalyanaraman, S., 2015. *Svastika, Indus Script hieroglyph multiplex hypertext 'zinc, spelter, pewter alloy'*. [Online]

Available at:

https://www.academia.edu/15277151/Svastika_Indus_Script_hieroglyph_multiplex_hypertext_zinc_spelter_pewter_alloy

Kalyanaraman, S., 2016. *Indus Script hieroglyphs*. [Online]

Available at: <http://bharatkalyan97.blogspot.in/2016/02/indus-scrip-hieroglyphs-tamrapatti.html?view=magazine>

[Accessed 26 May 2016].

Kalyanaraman, S., 2106. *Indus Scrip hieroglyphs*. [Online]

Available at: <http://bharatkalyan97.blogspot.in/2016/02/indus-scrip-hieroglyphs-tamrapatti.html?view=magazineau>

Kartapranata, G., 2014. *Silk Road transmission of Buddhism*. [Online]

Available at:

https://en.wikipedia.org/wiki/Silk_Road_transmission_of_Buddhism#/media/File:Buddhist_Expansion.svg

[Accessed 31 May 2016].

Katlewa, L., 2014. *Wikipedia, Swastika*. [Online]

Available at:

https://commons.wikimedia.org/wiki/File:Swastikas_on_the_wedding_dress,_British_colony,_1910.jpg

[Accessed 26 May 2016].

Kelkar, S. M., 2015. *Auspicious Shanti - Vastu Shanti*. [Online]

Available at: http://www.kelkarguruji.com/index.php/en/auspicious_shanti

[Accessed 19 May 2016].

Kenoyer, J. M., 2014. *imagesofasia*. [Online]

Available at: <https://in.pinterest.com/pin/343892121519471353/>

[Accessed 14 June 2016].

Kumar, R., 2016. *Wonderful Indian Architecture*. [Online]

Available at:

<https://www.facebook.com/BharatiyaVastukala/photos/a.444535968904549.100717.444092942282185/1190120501012755/?type=3&theater>

[Accessed 31 May 2016].

Landon, P., 2014. *THE ANCIENT SECRET OF THE SWASTIKA*. [Online]

Available at: <http://www.messagetoeagle.com/cassaroswastika2.php#ixzz49pqr9C1>

Lang, J. T. & Blackswan, O., 2010. *Concise History of Modern Architecture in India*. 1st ed. s.l.:Permanent Black.

Madhukalya, A., 2016. *This Video Shows How Much The Map Of India Has Changed From 2800 BCE To 2016 & It's Mind Blowing*. [Online]

Available at: <http://www.scoopwhoop.com/Video-Shows-How-Much-The-Map-Of-India-Has-Changed/?ref=social&type=fb&b=0>

Mark.muesse, n.d. *HINDU TEMPLE*. [Online]

Available at:

https://en.wikipedia.org/wiki/Khajuraho_Group_of_Monuments#/media/File:Hindu_temple_Spire_design_principle_concentric_circles_squares_Vastu_Purusa_Mandala_without_label.svg

Michaud, R. & Michaud, S., n.d. *Pattadakal, Kada Siddheshvara Temple, Window / Photo*.

[Online]

Available at: <http://www.akg-images.co.uk/archive/-2UMDHUEH7T4N.html>

[Accessed 28 May 2016].

Mohan Pant, S. F., 2007. *Stupa and Swastika: Historical Urban Planning Principles in Nepal*.

s.l.:NUS PRESS.

Moodabidri, A. J. C. P., 2010. *All Blog Posts (302)*. [Online]

Available at: <http://coinnetwork.com/profiles/blog/list?page=8>

Muthusamy, R., 2014. *Thiruvellarai Swastik Well by Dantivarma Pallava and Pundarikakasha Perumal Temple*. [Online]

Available at: <http://know-your-heritage.blogspot.in/search/label/8th%20Century>

[Accessed 31 May 2016].

National (War) Savings Committee, 1916. *Wikipedia, Swastika*. [Online]

Available at:

https://en.wikipedia.org/wiki/File:1916_White_swastika_6d_war_savings_coupon.jpg

[Accessed 7 May 2016].

Nepal Chamber of Commerce, 2016. *Nepal Chamber Expo-2072 kicks off at Bhrikutimandap*.

[Online]

Available at: <http://worldnewsedu.xyz/nepal-chamber-expo-2072-kicks-off-at-bhrikutimandap/>

[Accessed 31 May 2016].

Pant, M. & Funo, S., 2007. *Taxila. Stupa and Swastika: Historical Urban Planning Principles in Nepal's Kathmandu Valley*: Kyoto University Press and NUS Press Singapore.

Ragul, 2011. *A Photologue*. [Online]

Available at: <http://www.team-bhp.com/forum/travelogues/94493-photologue-pune-hampi-badami-aihole-pattadakal-4.html>

Ragul, 2011. *A Photologue: Pune to Hampi, Badami, Aihole & Pattadakal*. [Online]
Available at: <http://www.team-bhp.com/forum/travelogues/94493-photologue-pune-hampi-badami-aihole-pattadakal-4.html>
[Accessed 3 June 2016].

Rajgor's Auctions, 2012. *Ancient (The Swastika Coin)*. [Online]
Available at: <http://www.rajgors.com/auctioncataloguesold.aspx?auid=13>
[Accessed 20 June 2016].

Ramachander, S. P. R., n.d. *Veda Rahasya*. [Online]
Available at: <http://www.vedarahasya.net/darsana.htm>
[Accessed 24 May 2016].

Rangwala, S. C., 2015. *Town Planning*. 28 ed. Anand: Charotar Publishing House Pvt. Limited.

Related Tibetean Scripts, 2011. *Unchanging well being*. [Online]
Available at: <http://inkessential.blogspot.in/2011/02/unchanging-well-being.html>
[Accessed 21 June 2016].

Religion Facts, 2015. *Swastika Symbol (Hinduism)*. [Online]
Available at: <http://www.religionfacts.com/swastika/hinduism>
[Accessed 26 May 2016].

S. Kalyanaraman, S. R. C., 2106. *Magazine*. [Online]
Available at: <http://bharatkalyan97.blogspot.in/2016/02/indus-scrip-hieroglyphs-tamrapatti.html?view=magazine>

Saami, 2009. *Ancient Goths*. [Online]
Available at: http://oldgoths.blogspot.in/2009_06_01_archive.html

Sahu, V., 2014. *Badami - The capital of Vatapi Chalukyan Kings*. [Online]
Available at: <https://thinkmatter.in/2014/11/03/badamithe-capital-of-vatapi-chalukyan-kings/#jp-carousel-1170>
[Accessed 15 June 2016].

SBSS Technologies, 2016. *Ellorarelic*. [Online]
Available at: <http://www.ellorarelic.com/AncientCoins.html?ckattempt=2>
[Accessed 31 May 2016].

Schumacher, M., 2007. *STONE FOOTPRINTS OF THE BUDDHA*. [Online]
Available at: <http://www.onmarkproductions.com/html/footprints-bussokuseki.html>

Sen, J., 2015. *Muse India Archives - Joy Sen: 'The Garden and its Four Quarters'*. [Online]
Available at: <http://www.museindia.com/viewarticle.asp?myr=2015&issid=59&id=5430>
[Accessed 31 May 2016].

Sen, P. J., 2015. *museindia archives*. [Online]
Available at: <http://www.museindia.com/viewarticle.asp?myr=2015&issid=59&id=5430>

Singh, M., 2015. *Swastika on Indian Coins*. [Online]
Available at: <http://www.coinnetwork.com/profiles/blogs/swastika-on-indian-coins>
[Accessed 2 June 2016].

Sirimunasiha, 2010. *Swastika on Sri Lankan Coins*. [Online]
Available at: <https://sirimunasiha.wordpress.com/2010/08/13/393/>
[Accessed 5 June 2016].

Sitchin, Z., n.d. *The Black Sun and the Vril Society*. [Online]
Available at: <http://humansarefree.com/2015/02/the-black-sun-and-vril-society.html>
[Accessed 21 May 2016].

Swastika, 2016. *Wikipedia Swastika*. [Online]
Available at: <https://en.wikipedia.org/wiki/Swastika>
[Accessed 14 May 2016].

Tandon, P., 2005. *New Light on the Pāratārājas*. [Online]
Available at: <http://people.bu.edu/ptandon/Paratarajas.pdf>

Tandon, P., 2015. *The Coin Galleries: Pāratārājas or Pārata Rājas*. [Online]
Available at: <http://coinindia.com/galleries-parata-rajars.html>
[Accessed 14 June 2016].

Tangopaso, n.d. *Khajuraho temples*. [Online]
Available at:
https://en.wikipedia.org/wiki/Khajuraho_Group_of_Monuments#/media/File:Architecture_of_the_Khajuraho_temples.jpg
[Accessed 20 June 2016].

Tibetan Buddhist Rime Institute, 2013. *What is Kalachakra?*. [Online]
Available at: <http://rimebuddhism.com/jonang-kalachakra/what-is-kalachakra/>
[Accessed 31 May 2016].

UAN, S., n.d. [Online]
Available at: <http://www.aroundtheworldl.com/2014/06/29/agra-fort-india/>

Uma, 2011. *Misanthrope*. [Online]
Available at: <http://mise-en-trope.blogspot.in/2011/03/sikandra-and-agra-akbars-tomb-and-taj.html>

Uma, 2011. *Misanthrope - Sikandra and Agra: Akbar's tomb and the Taj Mahal*. [Online]
Available at: <http://mise-en-trope.blogspot.in/2011/03/sikandra-and-agra-akbars-tomb-and-taj.html>
[Accessed 26 May 2016].

UNESCO WHC, 2016. *Sun Temple, Konârak*. [Online]
Available at: <http://whc.unesco.org/en/list/246/>
[Accessed 14 May 2016].

Vahia, M. N. & Yadav, N., 2010. Harappan Geometry and Symmetry - A study of geometrical patterns on Indus objects. *Indian Journal of History of Science*, 45(3).

Violatti, C., 2015. *ANCIENT HISTORY*. [Online]
Available at: http://www.ancient.eu/Indus_Script/
[Accessed 21 May 2016].

Wikimedia, 2009. *Inscription in Brahmi on the pillar of Sarnath*. [Online]
Available at:
https://en.wikipedia.org/wiki/Sarnath#/media/File:Aramaic_Inscriptions_in_Sarnath.jpg
[Accessed 7 June 2016].

Wilson, T., 1896. *The Swastika: the earliest known symbol, and its migrations : with observations on the migration of certain industries in prehistoric times*. Washington DC: Washington :Government Printing Office.

Wojtkowiak, M., 2010. *Tibetan Buddhist Monastery in Nyingmapa tradition, Bodhgaya, Bihar, India – photo gallery*. [Online]
Available at: <http://www.magic-photographer.com/tag/nyingmapa/>
[Accessed 15 June 2016].

4

Evolution of Swastika in Central and West Asia

However complex its symbolism may be, the bare outline of the Swastika displays a rotary movement around a fixed CENTRE, which may either be the ego or the POLE. It is therefore a cyclical symbol of activity, manifestation and perpetual regeneration and it is in this last sense that it is often an accompaniment to images of such saviours of the human race as Christ, from the medieval catacombs in the West to the Nestorians of the steppes of central Asia

The Penguin Dictionary
of Symbols

Evolution of Swastika in Central and West Asia

Protyusha Saha¹, Roshni Roy², Sampurna Sikdar³, Siddhartha Panigrahi⁴
Shivangi Singh Parmar⁵

Introduction

The Swastika symbol illustratively is depicted as a cross with its four legs / arms bent at ninety degrees. It also known as 'hook cross', 'angled cross', 'cramponny', 'gammadion', 'tetraskelion', etc. However the message contained within the symbol is vast and goes deep into the roots of human civilization. The symbol had made its appearance since the dawn of civilization and the utility of it was vast and widely variable over time and space. The widest use had been debated to be of a very sacred and auspicious symbol, according to Hinduism, Buddhism and Jainism. The word Swastika is borrowed from the Sanskrit 'Svastik'. Phonetically however it is pronounced as the English word itself. The word comprises of 'su' which in Vedic Sanskrit means 'good' and 'asti' which means "it is". Hence combined together it forms 'Svastik' which translates to "good something", possibly health, luck, etc. But the findings highlighted in the section conclude to the fact that the earliest form of the Swastika had emerged as a manifestation of a cycle, which over time had carried forward its essence to fields of cosmology, seasonal changes, regeneration, power, etc. Hence it becomes necessary to study those manifestations, as it may pique an inquisitive soul / mind to reveal itself and also about the beginning of everything. The countries involved in this study are shown on the following map (figure 1) which are Russia, Georgia, Armenia, Turkey, Cyprus, Syria, Jordan, Lebanon, Iraq, Saudi Arabia, Yemen, Oman, Iran, Turkmenistan, Uzbekistan and Kazakhstan.

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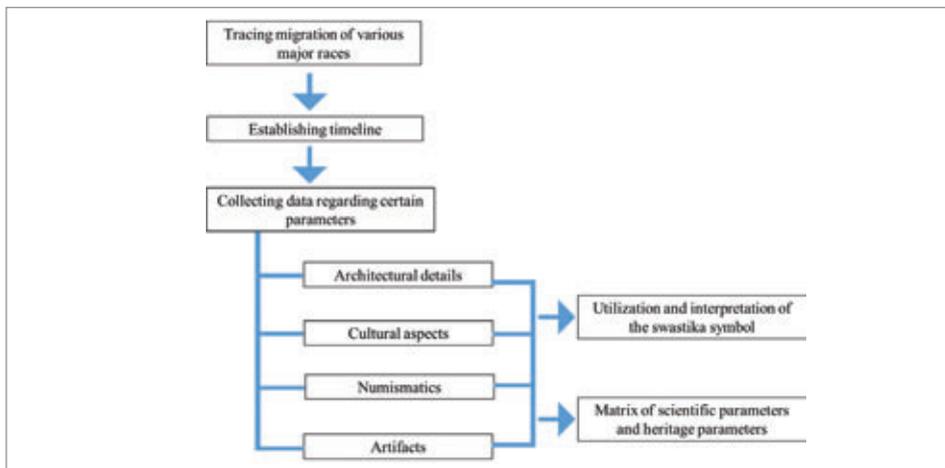
We can thus sum up the reasons for the study as:

- Understanding the utilities and the inter relation of the usage of the symbol
- The relation of the various aspects of Swastika with that of human life
- The reason behind the changed interpretation over time and space
- The causes and method for the migration of the symbol
- Establishing relation between age old cosmology and modern day derivations, in the light of the Swastika.

Research Questions

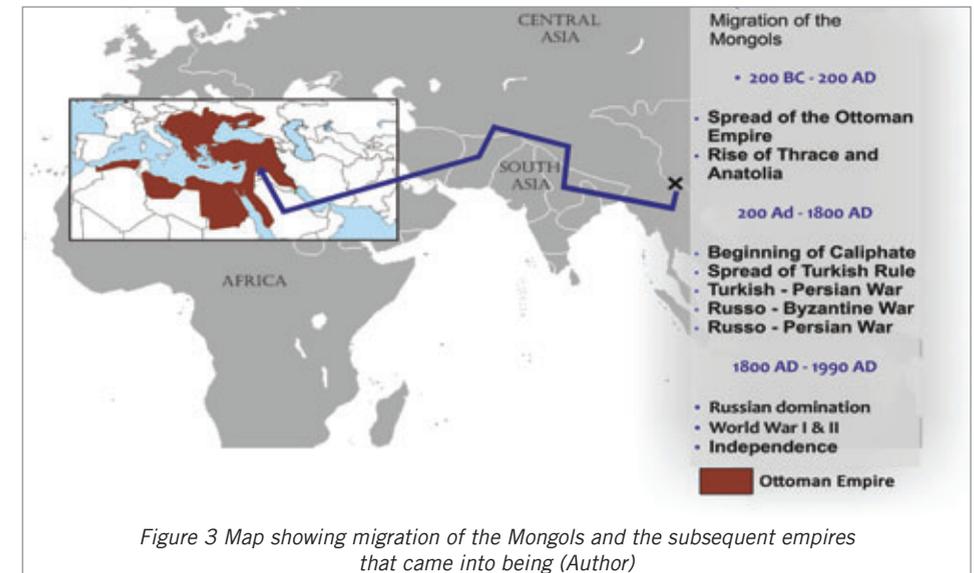
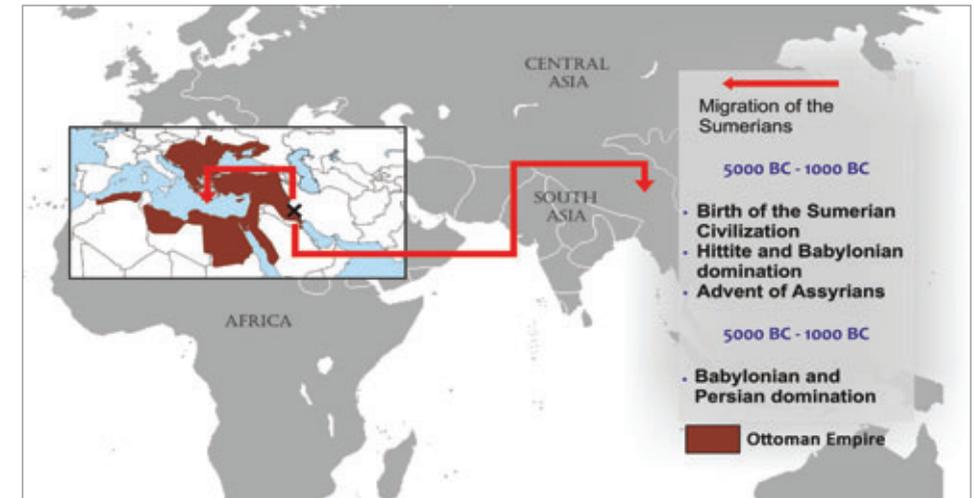
- Reasons for waning of such studies and utilization of the symbol
- Ways of revival of the age old study and manifestations of the Swastika.

Methodology



Timeline and Approach to the study

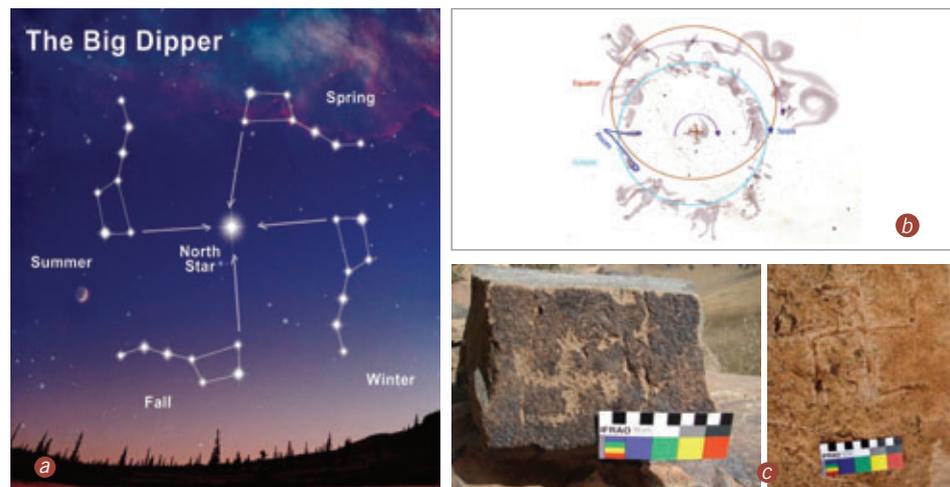
The study begins with the establishment of a legible timeline which is traced, based on the migration of human race that had taken place since time immemorial. The study for evidences go as far back as 10500 BCE (Source:), near the Hills of the Hisarlik, in Troy, which is in present day Çanakkale Province, of Modern Turkey, where the concept of cosmology had emerged from the Swastika, till the time of the World War I and World War II, when the Swastika had been adopted by the Nazi Army and was used as a symbol emphasising Russian dominance over nations.



Evidences of Swastika across races and countries

As mentioned earlier, the evidence of the Swastika was traced down to 10500 BCE, near the Hills of the Hissarlik in Turkey and then migrated to Asia Minor via engravings and imprints on coins and potteries and architecture as an element of ornamentation, and then gradually with time it came to Persia (modern day Iran), from where it moved into the Byzantine Empire (specifically to Turkey and Israel) later in around 650 BCE (Saidazimova, 2005) (Ancient Man and his First Civilizations, n.d.)

Dating back to 10500 BCE, Swastika was found in use in 'Mithraism', the early religion of the Persian Empire. Mithraism worked on astronomical sciences and cosmology along with the application of Swastika at that time. A few examples include the Celestial Swastika, the proposed astrolabe demonstrating the processional movement of the celestial bodies around the centre of the elliptical circle from 10500 BCE to 1st CE (the age of Pisces-Virgo). (Assasi, 2000)



- a Figure 4: The alignment of the Big Dipper Constellation forming a Swastika with the seasonal cycle (Assasi, 2000)
- b Figure 5: Celestial Swastika, the proposed astrolabe demonstrating the processional movement of the celestial bodies around the centre of the elliptical circle from 10500 BCE to 1st CE (the age of Pisces-Virgo). (Assasi, 2000)
- c Figure 6: Kurdistan Petroglyphs with Swastika inscripted on them (Pro-Swastika, n.d.)

Apart from these the Kurdistan Petroglyphs from the Saral area, Kurdistan or ancient Iran also bear examples of Swastika rock art belonging to the pre-historic time period. Similar examples are found on the rock from a mountain top called Karafuto Cave.

In places like Jordan, Syria, Arizona, etc., mysterious geoglyphs have been found, which are around 8500-9000 years old i.e. they had occurred around 6500 BCE (Jarus, 2015). Of them the geoglyphs in Jordan looks exactly like a four legged Swastika. The other geoglyphs in Jordan are

the Nazca Lines, speculated to be created by the Nazca people in around 500 BCE and are shaped like wheels. The reason behind occurrences of these geoglyphs are still unexplained, also the meaning behind those forms remains a mystery still. (Jarus, 2015)



- a Figure 7: Jordan Geoglyph (Jarus, 2015)
- b Figure 8: Nazca Lines Geoglyph in Jordan (Jarus, 2015)
- c Figure 9: The three legged Swastika Geoglyph in Kazakhstan (Jarus, 2015)
- d Figure 10: A three legged Swastika symbol (Grifasi, 2010)

Evidence of Swastika in the Sumerian civilisation

The Sumerians are debated to have existed at a time between 6000 BCE till 1800 BCE, along the banks of the Tigris and the Euphrates River which in present day covers modern day Iran and Iraq (Carr K., 2016).

During the Sumerian civilization (5500 BCE – 2500 BCE), the next phase of Mithraism started in which Swastika represented the sun and also as 'the chariot of Mithras' in Iran. It is depicted as Mithras (Ancient Sun God of law and order in Iranian mythology) riding a chariot pulled by four horses moving through the sky together. The movement of Mithra on his chariot throughout the sky was the mythological representation of the scientific phenomenon of the earth revolving around the Sun and thus explained the natural event of the cycle of seasons. The four stacks of the Swastika represented the four horses or the four arms of destiny, rotating around the central vertex representing the Mithra i.e. the Sun. The figures 12 and 13 show how the chariot of Mithra was represented with the Swastika symbol. (Assasi, 2000) (David, 2006-2011)

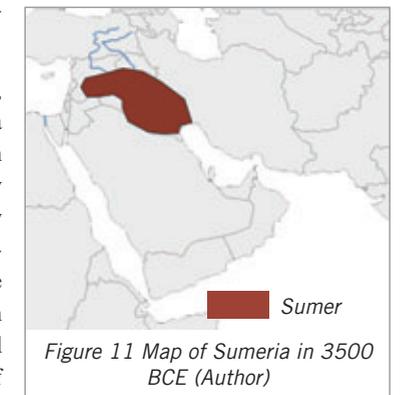


Figure 11 Map of Sumeria in 3500 BCE (Author)

Swastika has been found in significant use in Mithraic artifacts. One such artefact according to M. J. Vermaseren, is a counter-clockwise Swastika that has been well preserved on a tauroctony scene found at Ghighen, in modern Bulgaria. A ceramic outstanding dish has also been found in Samarra, Iraq on which Swastika was imprinted. Swastika on the Sumerian bowl is a representation of their religious belief of the circle of life i.e. the journey of soul from cradle to grave in the form of body and then from grave to cradle representing the concepts of life after death and rebirth. (David, 2006-2011)



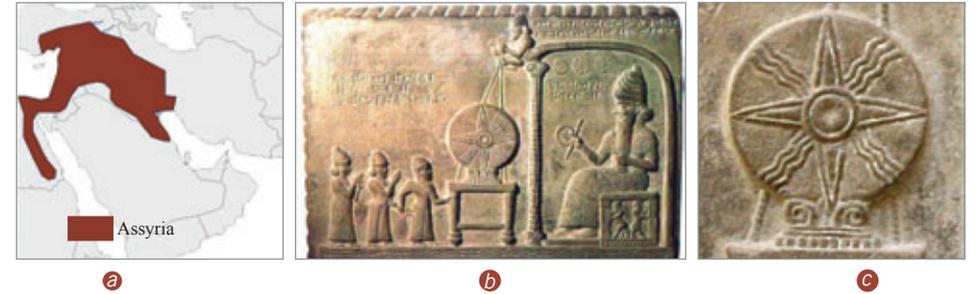
a Figure 12: The Chariot of the Mithra represented by Swastika (David, 2006-2011)
b Figure 13: The Swastika as Mithra and the four horses (David, 2006-2011)
c Figure 14: The Sumerian Bowl with the Swastika (Cumont, 1903)
d Figure 15: The tauroctony scene consisting of the Swastika (Cumont, 1903)

The Sumerians mostly built stepped pyramids of mud-brick which are called ziggurats. On top of each ziggurat, there was a small temple dedicated to the Goddess of fertility Ishtar or Anu. (Carr K. , 2016) The reversed Swastika was linked with female generative powers and so it had appeared on the body of the Sumerian God Ishtar. (Holloway, 2014) The Sumerian Goddess Ereshkigal is the sister and counterpart of Inanna/Ishtar, the symbol of nature during the non-productive season of the year. (Green, 2013) There had been many seals found of that of Ishtar and Ereshkigal with the symbol of a rotating sun engraved between the carvings of the two deities. Perhaps it would have depicted the Swastika in a crude sense, with the notion of regeneration or life cycle. (Stucky, 2005) Other meaning may refer to life force, solar power or cyclical process



a Figure 16: The symbol of the Swastika in the seal. (Holloway, 2014)
b Figure 17: The seal of Ishtar and Ereshkigal (Carr K. E., n.d.)
c Figure 18: The widely used symbol of the Swastika (Stucky, 2005)

The Assyrians had arrived at a time around 1800 BCE till 1000 BCE. (Assyrian Timeline, n.d.) Archeological findings had helped to resurface stone bas reliefs of the Asura, who is presumed to be the creator of Assyrians. A Swastika had been found displayed on the limestone slab of the temple of God Assur, who is believed to be the supreme god. The slab depicting the God has a similar spinning sun which may redirect to the process of life cycle. (Mckenzie, 1915)



a Figure 19: Map of the Assyrian kingdom (Author)
b Figure 20: Assyrian seal with the carving of God Assur / Shamash (Mckenzie, 1915)
c Figure 21: The Spinning Sun as engraved in the seal depicting the Swastika (Mckenzie, 1915)

Table 1 presents a summary of the usage of the Swastika in the Sumerian Era

Origin	Time	Use	Representation
Sumerian	10500 BCE	Mithraism	Symbol of power and life -cycle
	6500 BCE	Geoglyphs	NA
	5000 BCE	Sumerian Pottery	Diurnal motion of the earth
	3500 BCE	Sumerian Seal	Seasonal cycle
	1800 BCE	Assyrian Seal	Life cycle

Evidence of Swastika in the Persian Empire:

The Persian Empire dates back to 550 BCE with the conquest of the ancient cities of Media, Lydia and Babylonia. Some important artefacts found of this period include the Marlik necklace (excavated from Kaluraz/Guilan province, dating back to the first millennium BCE.), the different gold cups like the Kelardast gold cup and the Hasanlu gold cup. These artefacts are found to have Swastika engraved on them. (Pro-Swastika, n.d.) (Kiani, 2012)



a Figure 22: Map of the Persian Empire in 475 BCE (Kiani, 2012)
b Figure 23: The Kelardast gold cup (Kiani, 2012)
c Figure 24: The Hasanlu gold cup (Kiani, 2012)
d Figure 25: The Marlik necklace (Kiani, 2012)

During the time phase from 550 BCE to 330 BCE, Swastika was used as the symbol of good luck and prosperity and therefore found in many architectural motifs of the royal palaces and important buildings. A common representation of power was of a double lion-headed human figure, blessed with the Swastika as a cycle of life controlled by the four arms of destiny. (Wilson, The Swastika, 1894)

The intermediate phase spanning from 323 BCE to 651 BCE, traces the migration and subsequently the changing interpretation of the Swastika through the coins of various dynasties. For example the coins of Seleucid dynasty showed the influence of Mithraism in their culture through the representation of animal figures on them while the Yungdrung coins show embedded Swastika on them that represent the “Warrior Mithra”. (Wilson, The Swastika, 1894)



a Figure 26: Coin of Yungdrung with the Swastika on one of the faces (Wilson, The Swastika, 1894)
b Figure 27: Coin of Seleucid Dynasty (Wilson, The Swastika, 1894)
c Figure 28: A Yungdrung coin with the Swastika on one face and warrior Mithra on the other (Wilson, The Swastika, 1894)

The next phase of history i.e. 750 CE – 1492 CE saw the use of Swastika on the walls and ceilings of mosques and important buildings in the form of paintings and works of mosaic tiles. Examples of such patterns are given below. (Pro-Swastika, n.d.)



a Figure 29: Swastika utilized in the pattern to adorn the walls of the Jameh Mosque in Isfahan (Pro-Swastika, n.d.)
b Figure 30: the outer wall of the Jameh Mosque is adorned with tiles which consist of moulded Swastika patterns (Pro-Swastika, n.d.)
c Figure 31: Painted tiles consisting of patterns of the Swastika on the corners of the Jameh Mosque (Pro-Swastika, n.d.)
d Figure 32: Swastika utilized as a unit of pattern on the ceiling of Ali Qapu Pavilion in Isfahan, Iran (Pro-Swastika, n.d.)

In the period from 1794 CE to 1979 CE, a new motif was found in use on the walls of Persepolis. This was the motif of lotus flower which was the national symbol of Iran and it is believed to have an intimate relation with the Swastika. The symbol was considered as pure because lotus grows in mud but still it manages to grow as one of the most beautiful flowers, known. Thus two types of motifs were found in use namely the twelve-petal lotus and the bud lotus. Both these symbols are believed to be derived from the ancient Swastika symbol. The twelve-petal lotus is believed to be the representation of the symbolic Mithra from the ancient Swastika symbol of Mithraism (fig.13 and fig.33). Similarly the bud lotus, often shown being held by the emperor on motifs represented the purity and good-will of the monarch towards his subjects. (Cumont, 1903) (Wilson, The Swastika, 1894) (M^a Pilar Burillo-Cuadrado, 2014)

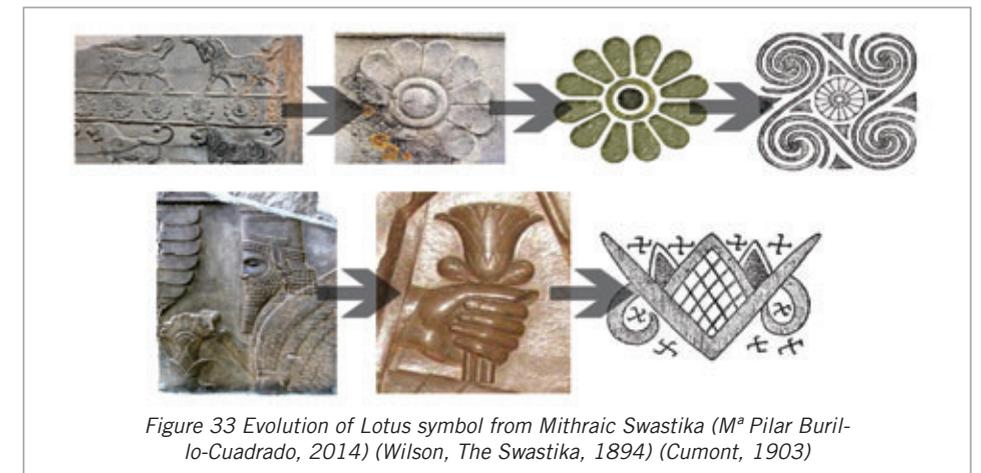


Figure 33 Evolution of Lotus symbol from Mithraic Swastika (M^a Pilar Burillo-Cuadrado, 2014) (Wilson, The Swastika, 1894) (Cumont, 1903)

Table 2 showing summary of the usage of the Swastika in the Persian Empire

Origin	Time	Use	Representation
Persian Empire	2500 BCE	Next stage of Mithraism	Power and Justice
	1000 BCE	Kelardast Gold Cup, Hasanlu Gold Cup	Symbol of purity
	550 - 330 BCE	Architectural Details	Auspiciousness
	651 - 323 BCE	Coins	Power and Justice
	750 BCE - 1492 CE	Architectural Patterns	NA
	1794 - 1979 CE	Wall motifs on Persepolis	Purity

Evidences of Swastika in the Turkish Empire

The advent of the Turks took place sometime around 200 BCE. (History of the Turks, n.d.) The first Turkic people lived in a region extending from Central Asia to Siberia, with the majority of them living in China. The Mongols, who were an East Asian Central group settled in the Xingjian district of China, migrated towards the west in around 1206 CE was what culminated to the origin

of the Turkish nation. (History of the Turks, n.d.) There had been numerous findings of the Swastika symbol in its pure and also generative forms across the empire. The timeline for the Turkish Empire is segregated into Byzantine Era, Seljuk Era, Ottoman Era and Modern Republic of Turkey and have classified the findings and arrived on the utility of the Swastika based on the era.

The Byzantine Era (667 BCE - 1461 CE)

The Byzantine Era was continuation of east Roman Empire and a predecessor to the Turkish Empire with its Capital city located in Constantinople, which is modern day Istanbul. (L.Teall, 2015) The earliest available data for the evidence of Swastika in the Byzantine period is that of the symbol of a cross on the coins which were issued under the rule of King Justinian I in 615 BCE. (Classical Numismatic Groups Inc., n.d.) The coins had the markings of the face of the emperor along with the cross. Such an aspect accounts for the value and power of the monarchy. The trend of the cross and the Emperors face on coins had been followed by the Kings Justinian II, Romanus III and Constantine VIII, who were successors of King Justinian I. The ongoing debate of relating the cross with that of Swastika is in exhaustive. (Henry, 1985)

The Byzantine Empire comprised of modern day Syria, Jordan, Israel, Lebanon, Turkey and Armenia. Of the above mentioned regions, Turkey, Syria, Israel and Armenia are the two places where the utilization of the Swastika symbol to adorn walls and flooring is found to be widespread.

The Byzantine era had seen the advent of mosaic design in floor and wall patterns of churches and mosques of Turkey. (Byzantine Architecture, 2013) The Swastika was one such symbol that was transferred to a pattern and was used to adorn the walls via mosaic patterns and carvings. Evidences of such designs can be seen in the following figures:



- a Figure 34: Swastika used as unit of pattern for mosaic wall (Henry, 1985)
- b Figure 35: Another variant of the Byzantine era coin (Classical Numismatic Groups Inc., n.d.)
- c Figure 36: Swastika utilized to design mosaic floor tiles for a church in Turkey (Byzantine Architecture, 2013)
- d Figure 37: A coin of Byzantine Empire with the Christian cross (Classical Numismatic Groups Inc., n.d.)

In Syria, patterns with Swastika are present on the boundary walls of the Palmyra ruins which is as old as 2nd Millennium BCE. Next are the engravings of the Swastika on the walls of the Roman Temple of Helios, Qanawat, dating back to 2nd – 3rd CE. (Pro-Swastika, n.d.) Archaeologists have unearthed a type of solar Swastika pattern in the Deir Samaan temple, dating back to 475 CE. (Pro-Swastika, n.d.) In Israel similar works of tiling with the Swastika pattern has been observed in the Roman Baths of Beit She'an in 63 BCE and also as patterned carvings on the walls of the Second Temple, in 350 BCE. (Pro-Swastika, n.d.)



- a Figure 38: The Palmyra ruins, Syria in 2nd Millennium BCE (Pro-Swastika, n.d.)
- b Figure 39: Roman Temple of Helios, Qanawat, Syria in 2nd - 3rd CE (Pro-Swastika, n.d.)
- c Figure 40: Solar Swastika pattern in the Deir Samaan temple, in Syria, 475 CE (Pro-Swastika, n.d.)
- d Figure 41: Roman Baths of Beit She'an in 63 BCE (Pro-Swastika, n.d.)

Further examples of the evidences are given below as per their appearance in the timeline.



- a Figure 427 3rd century BCE: Stone carvings as displayed in Golan museum of Katzrin (Pro-Swastika, n.d.)
- b Figure 43 2nd CE: Carvings on the stone gates of Capernaum synagogue (Pro-Swastika, n.d.)
- c Figure 44 3rd CE: Swastika as a pattern for mosaic on the floors of Maoz Haim Synagogue (Pro-Swastika, n.d.)
- d Figure 45 4th CE: Swastika as a pattern for mosaic on the floors of Shavei Zion church (Pro-Swastika, n.d.)



- a Figure 46 12th CE: Patterns carved on stones of Belvoir Fortress (Pro-Swastika, n.d.)
- b Figure 47 333 CE: Swastika design on floors and walls of Church of the Nativity, Bethlehem (Pro-Swastika, n.d.)
- c Figure 48 380 CE: Floor pattern in the Church of Multiplication (Pro-Swastika, n.d.)
- d Figure 49 Date unknown: Floor pattern in Ein Gedi synagogue (Pro-Swastika, n.d.)

Another prominent symbol that was utilised rigorously for decorative purposes as patterns on walls and floor mosaics is the Solomon's cross. The reason why it is worth mentioning about this symbol is due to its close association with the symbol of Swastika. When there is a Solomon's knot in the centre of a decorative configuration of four arcs going about a curve, it is known as a "pelta-Swastika" (where pelta is Latin for "shield"). (Gerdes, 2012)

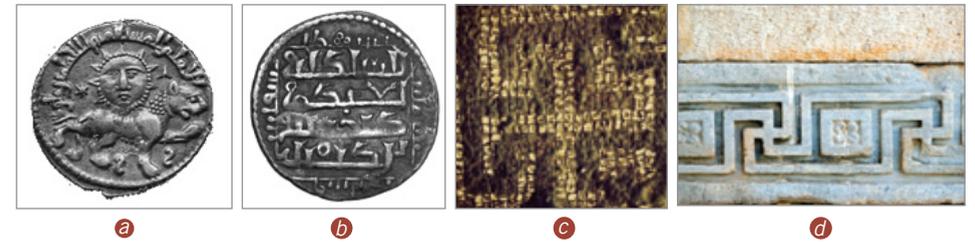


a Figure 50 Common representation of Solomon's Knot (Gerdes, 2012)
b Figure 51 The eight fold pattern of the Solomon's knot as utilized in floor tiles of the Church of Nativity in Israel (Gerdes, 2012)
c Figure 52 A unit of the four fold Solomon's Knot, utilized in tiling of floors for a museum (Gerdes, 2012)

The Seljuk Era (1034 CE - 1194 CE)

The onset of the 10th CE has seen the migration of a group of nomadic tribe from Central Asia and from a region which in present times is located in the south east of Russia, led by a chief named Seljuq. They had settled into the lower reaches of river Syr Darya which flows through present day Uzbekistan, Kazakhstan and Tajikistan. (Sinha, 2014) The empire rose into to prominence under the rule of King Tughril, grandson of Seljuq and had comprised of modern day Turkey, Iran, Iraq, Armenia, Turkmenistan, Saudi, Uzbekistan, Syria, Jordan and Georgia by 1190 CE. (Sinha, 2014) The Seljuk Monarchs revived Islamic unity under Sunnite Caliphate, in the year 1055 CE with Tughril Beg's victory over the Buyid Dynasty in Baghdad. (Sinha, 2014) The effect of such amalgamation was visible in the form of scriptures on the coins issued under the reign of Seljuk Monarchs. The coins bore the emblem of a sun and lion depicting power and also transliterating to "the House of Lion" in an astrological configuration which is synchronous to the Swastika being represented as 'the life giving sun' and 'power'. (Kindermann, 1986)

The architecture of the Seljuk Era was predominantly influenced by the Armenian, Byzantine and Persian styles. (Blair, 2004) The concept of the Swastika as a unit of the pattern was also carried over along with the details and was used in a similar manner to adorn the walls and flooring of the churches and mosques.



a Figure 53 Coin of the Seljuk Era with Sun and Lion symbol of the empire (Kindermann, 1986)
b Figure 54 The Seljuk Era coin with the Islamic Inscriptions marking the advent of the Islamic faith (Classical Numismatic Groups Inc., n.d.)
c Figure 55 Mosaic tiles with the pattern of Swastika in the church of St. Peter (Blair, 2004)
d Figure 56 Pattern of the Swastika as carved on the walls of the Temple of Hadrian (Pro-Swastika, n.d.)

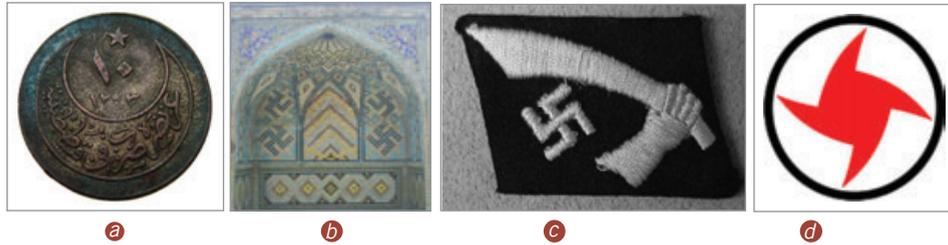
The Ottoman Era (1299 AD - 1923 AD)

One of the rulers of the Seljuk Dynasty named Malik Shah had found the Sultanate of Konya in Anatolia (present day Asia Minor). (Yapp, 2015) The Turkish Tribes of Anatolia, led by Osman I gradually proceeded to establish the Turkish state of Ottoman in 1300 CE. (Yapp, 2015) The Ottoman Turkish Empire expanded and comprised of present day Jordan, Saudi Arabia, Yemen, United Arab Emirates, Kuwait, Bahrain, Qatar, Oman, Palestine, Lebanon, Syria, Iraq, Armenia, Georgia, Israel and Turkey. The revival of Islamic faith since the time of the Seljuk era brought in numerous changes in the beliefs and culture in the Ottoman Era alike. Such an effect was visible on the engravings of the coins issued under the Ottoman Monarchy which bore the symbol of a crescent moon and star. The symbols in Islamic faith were depicting the day and the night referring to the diurnal motion of the earth, the concept of which is again on similar grounds with Swastika's manifestation of Earth's rotation. (Star and Crescent of Islam, 2013)

The symbol of Swastika had yet again made an appearance as an architectural detail for the flooring, walls and facade of churches and mosques. Examples of such detail are the Blue Mosque of Istanbul (present day Turkey).

By the 19th CE the Ottoman Empire was on the path of decline and dissolution, due to war between the empire and Russian principalities of Bulgaria, Romania, Serbia, and Montenegro. The war had resulted in the Russian army to claim part of the Ottoman territory. (William, 1953) The effect of the war was visible in the coat of arms which shows a Swastika with the Turkish dagger, symbolically known as a 'handzar'. (Savich, 2013)

In recent times the Swastika symbol was used in the logo for the Syrian Social Nationalist Party logo which started around 1932 CE. Here the Swastika symbol represents a red hurricane with a white circle around it. It was formulated keeping reformation in mind. (Meaning of SSNP Logo, 1977)



a Figure 57 Coin of the Ottoman Era with the crescent moon and star print (Star and Crescent of Islam, 2013)
 b Figure 58 Swastika as used on the walls of the Blue Mosque in Istanbul (Pro-Swastika, n.d.)
 c Figure 59 The Nazi symbol of the Swastika and the Turkish 'handzar' (Savich, 2013)
 d Figure 60 Syrian Social Nationalist Party Logo (Meaning of SSNP Logo, 1977)

Table 3 showing summary of usage of the Swastika in the Turkish Empire

Origin	Time	Use	Representation
Turkish Empire	2nd Millennium BCE	The Palmyra Ruins	Aesthetics
	650 BCE	The Coins of Byzantine	Power
	300 BCE	Stone carvings and Golan museum of Katrin	NA
	63 BCE	Roman Baths of Bett sheán	Aesthetics
	2 CE	Stone Gates of Capernaum Synagogue	NA
	3 CE	Floor of Maoz Haim Synagogue	NA
	4 CE	Floor of Shavei Zion Church	NA
	12 CE	Stones at Belvoir Fortress	NA
	333 CE	Church of Nativity, Bethlehem	Purity
	380 CE	Floor patterns in Church of Multiplication	Auspiciousness
	475 CE	Deir Samaan Temple	Auspiciousness
	1034 - 1194	Coins of Seljuk Empire	Power
	1299 - 1923	Coins of Ottoman	Power
		Walls of the Blue Mosque	Auspiciousness
	1932 CE	Syrian Social Nationalist Party symbol	Reformation

Evidences of Swastika in Russia

The evidence of Swastika in Russia can be traced back to 3000 BCE with the excavation of different artefacts. And also can be found on some currencies, dated 650 BCE to 1991 CE. Russian Banknotes, from the time of USSR is a symbol of power. The Banknote has two headed eagle symbolizing "charge associated with empire". (Wilson, The Swastika, 1894)



a Figure 61 Prehistoric Russian coin dated 650 BCE (Wilson, 1894)
 b Figure 62 A Russian Rouble issued under the Nazi rule (Wilson, 1894)
 c Figure 63 A Russian Rouble of 1939 CE (Wilson, 1894)
 d Figure 64 The symbol of the two headed eagle as used in Russian notes (Wilson, 1894)

Evidences of Swastika in Uzbekistan

Uzbekistan experienced the use of Swastika from 3000 BCE with the evolution of the concept of "The Tier Wirbel", showing rotational symmetric arrangement of an animal motif, often four birds' heads (the German for "animal whorl" or "whirl of animals"), which is a characteristics motif in Bronze Age Central Asia, the Eurasian Steppe. This motif could be seen on the potteries dating the Bronze Age. During 10th to 13th CE Swastika could be seen on the entrance of monuments.



a Figure 65 The 'animal whorl' formed of the four swans, used in pottery
 b Figure 66 Another representation of the 'animal whorl' with three rats
 c Figure 67 The Swastika was used as an element of design along with other murals to adorn the facades of mosques

Evidences of Swastika in Georgia:

Borjgali, is a Georgian symbol of the Sun with seven rotating wings over the Christian Tree of Life and is related to the Mesopotamian symbols of eternity. Which resemblance the Swastika. It is usually depicted within the circle that symbolizes the Universe. (symboldictionary, n.d.)

The Swastika symbol in Georgia, was first seen in the year 450-400 BC engraved on gold pipe necklaces and other ornaments. The Borjgali was prominent on the coins of Georgia during 15th to 19th century AD.



a Figure 68 Golden necklaces pipe with Swastika sign from Vani, Gerogia, 650 - 600 BCE (d'Alviella, 2000)
b Figure 69 Kuponi, with the symbol of Borjgali (symboldictionary, n.d.)

Evidences of Swastika in Armenia:

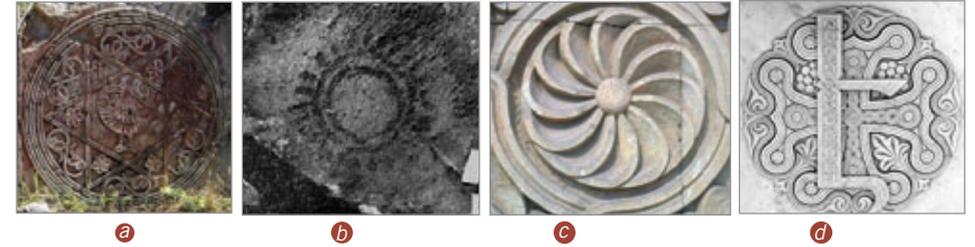
Armenia saw the evidence of Swastika in around 10000 BCE in the form of solar discs. Worship of the solar deity continued well into the pre-Christian iconography of the region. During the Iron Age kingdom of Ararat (860 BCE), Armenian frequently used various solar disks and the sacred tree of life in their depictions of deities and sacred rituals.

Armenian symbol of wheel of eternity, had resurfaced in the 11 century AD in the form of petroglyphs, and also the symbol of eternity shares a common origin with the symbol of Swastika. World's earliest attestations of Swastikas, Solar Disks, Sacred Bull, Tree of life and countless other typical Indo-European Iconographic symbols are found on Neolithic Petroglyphs all over Armenian Highlands. The Armenian Wheel of Eternity represents time, recurrence, universe and the eternal motion of life. While there are variations with 4, 6, 9 and 12 petals or rays, those with 8 are the most prevalent and represent the eternity.

The Armenian wheel of eternity, with nine rays stand nine 9 months of human life creation. Likewise those with twelve rays stand for:

- Twelve months or the solar year,
- Twelve hours of the day and twelve hours of night,
- Twelve signs of the Zodiac and
- The sun light traveling through these twelve divisions' days, months and constellations.

The Armenian Wheel of Eternity was also widely used in the ancient national craft of carvin cosmic crosses in stone. These sacred relics are known as 'Khachkars' or "Armenian cross-stones" and are inscribed in the UNESCO Intangible Cultural Heritage of Humanity. According to UNESCO, 'They act as a focal point for worship, as memorial stones and relics facilitating communication between the secular and divine.' 'They have an ornamentally carved cross in the middle, resting on the symbol of a sun or wheel of eternity'. 'The Khachkar is believed to possess holy powers and can provide help, protection, victory, long life, remembrance and mediation towards salvation of the soul'. (Meaning of Swastika & Armenian Wheel of Eternity, 2013)



a Figure 70 A Khachkar carved on stone in Teghenyats Monastery, Armenia, 12th CE (Meaning of Swastika & Armenian Wheel of Eternity, 2013)
b Figure 71 A solar disk engraved on stone dating back to 190 BCE (Meaning of Swastika & Armenian Wheel of Eternity, 2013)
c Figure 72 Symbol of Armenian Wheel of Eternity with 12 petals (Meaning of Swastika & Armenian Wheel of Eternity, 2013)
d Figure 73 Symbol of Armenian letter 'E' resembling Swastika. (Meaning of Swastika & Armenian Wheel of Eternity, 2013)

Table 4 showing summary of the usage of Swastika in Russia, Uzbekistan, Georgia and Armenia

Origin	Time	Use	Representation
Russia	650 BCE	Coins	Power
	1939 CE	Russian Ruble	Power
Uzbekistan	3000 BCE	The Tier Wirbel Philosophy	Life cycle for animals
Georgia	450 - 400 BCE	Engraved on gold pipe necklace	NA
	1500 - 1900 BCE	Coins	Power
Armenia	10000 BCE	Solar Discs	Human life creation
	5000 BCE	Armenian Wheel of Eternity	Eternal motion of life, Celestial associations
	190 BCE	Flag of Artaxid Dynasty	Power and monarchy
	95 - 56 BCE	Crown of King Tigrannes II	Power and monarchy
	11 CE	Petroglyphs	Symbol of eternity
	12 CE	Teghenyats Monastery	Auspiciousness

Research findings

- Predominant usage based on cosmology and diurnal motions of the earth: reflecting on the four seasons, cyclical process, rebirth, etc.
- Derivation of age old concepts of astrological sciences.
- Symbol of Power, symbol of auspiciousness, unit for pattern based on the perception of it as a symbol of luck

Conclusions

The symbol of Swastika has faced a number of controversies regarding not only its origin and distribution but also in respect of its interpretation in different periods of time and in different areas of the world. While in the Mithraic religion of the Persians, it came across as a representation of the principal god Mithra, it was also depicting the seasonal cycle as is evident from the prints on the Sumerian pot. While in some regions the Swastika was utilized in architectural details due to the association of the symbol with auspiciousness, it was also representing power as was evident from the coins which bore the symbol. But again referring to the study of the Byzantine Empire, similarity in the usage of the Swastika in the form of patterns on walls and flooring of mosques and churches of different regions across a widely variable timeline, has also been traced. While dealing with the studies regarding the evolution of the Swastika in Central and West Asia, the scenario is no different and the scope for further research still exists. However, from the above discussions and evidences found, it can be concluded that Swastika was an eminent part of this region throughout the timeline due to its presence, not only in terms of religion, power or culture but also it managed to establish its importance in arts, artefacts and architecture. It not only contributed as an aesthetic religious symbol but also showed its influence in the astronomical and mythological sciences of the ancient period. It is because of this that it has still managed to hold its place and hence it is still in practice in the modern aspects of life.

Scope for further research

Based on the findings, it will be of greater help

- To establish newer connection between the spaces where the Swastika was found and also
- In bridging the gap between our age old cultures and traditions of the present age.
- A more detailed study on the evidences can be conducted based on the widespread utilization of the symbol as a unit of pattern to adorn the walls and floors of numerous monuments.
- Apart from studying about the different utility of the Swastika symbol, one can actually look into the similarities in the usage of the symbol across space and time and then try to arrive at a connection.
- While the findings in this section focus on the association of the religion of Mithraism with that of the Swastika, an attempt can be made to study other ancient religion and their connection with the symbol.
- A more detailed study can be done to strengthen the evidences that connect the Swastika to the Christian cross and to the Islamic crescent moon and star.
- The association of the Swastika in terms of wheel of animals as seen in the concept of Tier Wirbel in Uzbekistan can be researched upon in a more detailed manner.

The most important aspect to dig deep into will be regarding the cyclical order of life, seasons, planetary motions and the way the Swastika was utilised to represent those cyclical phenomenon. The inter relation between the cyclical phenomenon can also be studied.

Notes for further reference

Mithraism

'Mithras' is the name of the Indo-Iranian god revolving whom the entire religion was developed. It is believed to have been evolved around 10500 BCE. However because of the secret nature of this religion, written narratives or theology are rarely available from the religion, but fortunately about four hundred materials related to Mithraism have been preserved over the time. Interestingly, the Swastika was known as 'the chariot of Mithra' in Iran. It is depicted as Mithras (Ancient Sun God of law and order in Iranian mythology) riding a chariot pulled by four horses moving through the sky together. This also represented the figure of "Mithras turning the Zodiac and the cosmic sphere". The movement of Mithra on his chariot throughout the sky was the mythological representation of the scientific phenomenon of the earth revolving around the Sun and thus explained the natural event of the cycle of seasons.

The Sumerians

The Sumerians are debated to have existed at a time between 5000 BC till 1800 BC, along the banks of the Tigris and the Euphrates River. The Sumerians mostly stepped pyramids of mud-brick which are called ziggurats. On top of each ziggurat, there was a small temple to Ishtar or Anu, the goddess of fertility. The Sumerians in each city-state, built palaces for their kings. The Sumerians were considered to be the first of the races who were settled in an urban way of life with their planned roadways and mud brick built dwellings.

Ishtar

Ishtar, also known as Inanna was the Sumerian deity of fertility and had resembled life cycle and regeneration in Sumerian culture. The temple of the Goddess Ishtar, across Sumeria, contains the figurine of the deity which has the symbol of the Swastika and at times the omega carved on it.

Ereshkigal

The Sumerian deity Ereshkigal was fabled to be the alter ego or at times sister of goddess Ishtar and had represented the non-fertile part of the year to them. Both the goddesses were depicted in the seals with the Swastika between them to recreate the idea of a cycle of regeneration.

Ashur

The god Ashur is an east semiotic god who was worshipped mainly by the Mesopotamians, and some parts of Syria and Asia Minor, which then constituted the kingdom of Assyria. The religion of the Mesopotamian people was adopted by the Sumerians and then transferred to the Assyrian empire. He was comparable to a solar iconography. The Assyrians had worshipped the Mesopotamian god till the 3rd – 4th CE and had erected numerous temples in his honour.

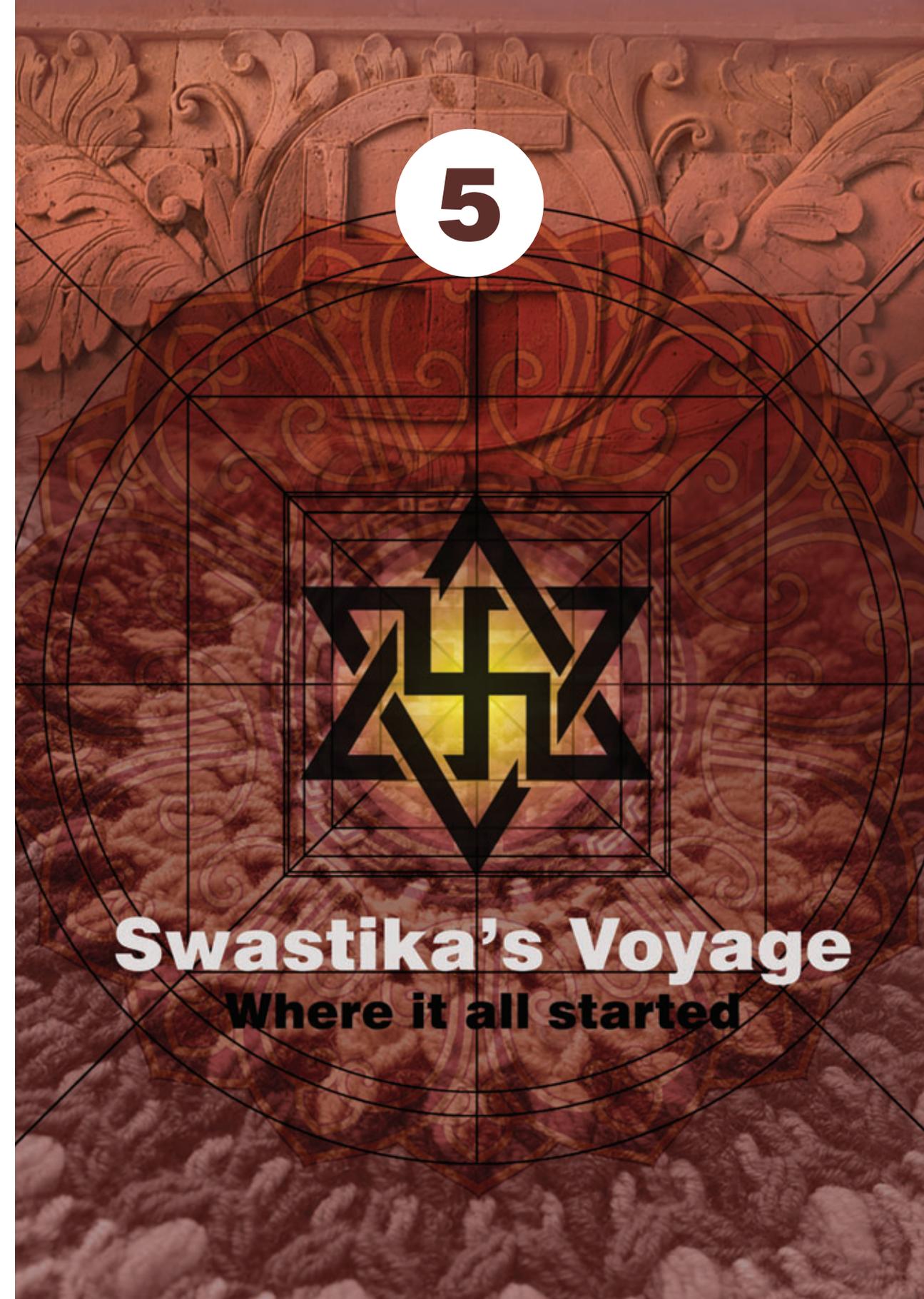
Solomon's Knot

It is a traditional decorative knot that made its appearance since ancient times. It is basically a link and not a true knot as defined mathematically in knot theory. The knot is composed of two closed loops which are interlaced. On a two dimensional plane, the knot appears to have four crossings with the two loops interweaving under and over each other.

References

1. *Ancient Man and his First Civilizations*. (n.d.). Retrieved JUNE 2016, from http://realhistory-ww.com/world_history/ancient/Misc/Sumer_additional/Sumer_add5a.htm
2. Assasi, R. (2000). *Swastika: The Forgotten Constellation Representing the Chariot of Mithras**.
3. *Assyrian Timeline*. (n.d.). Retrieved from Ancient History Encyclopedia: <http://www.ancient.eu/timeline/assyria/>
4. Beer, R. (2003). *The Handbook of Tibetan Buddhist Symbols*. Serindia Publications Inc.
5. Blair, S. (2004). *Atlas of World Art*. Oxford: Oxford University Press.
6. *Byzantine Architecture*. (2013, 2 10). Retrieved from www.britannica.com/art/Byzantine-architecture
7. Carr, K. (2016, June). *Sumerian Architecture*. Retrieved from [quatr.us](http://quatr.us/westasia/architecture/sumerian.htm): <http://quatr.us/westasia/architecture/sumerian.htm>
8. Carr, K. E. (n.d.). *Sumerian Architecture*. Retrieved JUNE 2016, from <http://quatr.us/westasia/architecture/sumerian.htm>
9. Classical Numismatic Groups Inc. (n.d.). *Greek and Roman Coins*. Retrieved from [www.cngcoins.com](http://www.cngcoins.com/Greek+and+Roman+Coins.aspx): <http://www.cngcoins.com/Greek+and+Roman+Coins.aspx>
10. Cumont, F. (1903). *The Mysteries of Mithra*. London: The Open Court Publishing Company.
11. d'Alviella, C. E. (2000). Symbols: Their Migration and Universality (Dover Occult). In *Chapter II. On the Gammadion or Swastika*. Dover Publications.
12. David, G. A. (2006-2011). The Four Arms of Destiny: Swastikas in the Hopi World & Beyond. pp. 1-11.
13. Gerdes, P. (2012). *Examples of Design Transformation (1): Delicately decorated seventeenth century Kongo baskets*. Maputo: Mozambican Ethnomathematics Research Centre.
14. Green, A. (2013, Oct 2). *Ereshkigal*. Retrieved from [www.newworldencyclopedia.org](http://www.newworldencyclopedia.org/entry/Ereshkigal): <http://www.newworldencyclopedia.org/entry/Ereshkigal>
15. Grifasi, A. (2010, June 20). *Sicilia: Il Perchè del nome Trinacria*. Retrieved from Grifasi-sicilia.com.
16. Harper, D. (2010). *Swastika*. Retrieved from [Dictionary.com](http://www.dictionary.com/browse/Swastika?s=t): <http://www.dictionary.com/browse/Swastika?s=t>
17. Henry, M. F. (1985). *Studies in the Byzantine Monetary Economy*. Cambridge: Cambridge University Press.
18. *History of the Turks*. (n.d.). Retrieved from [www.historyworld.net](http://www.historyworld.net/wrldhis/PlainTextHistories.asp?historyid=aa98): <http://www.historyworld.net/wrldhis/PlainTextHistories.asp?historyid=aa98>
19. Holloway, A. (2014). *The Ishtar Gate and the Deities of Babylon*. Retrieved from <http://www.ancient-origins.net/ancient-places-asia/ishtar-gate-and-deities-babylon-001868>
20. Jarus, O. (2015). *Mysterious Symbols in Kazakhstan: How Old Are They, Really?* Retrieved from [www.livescience.com](http://www.livescience.com/52700-mysterious-geoglyphs-in-kazakhstan-revealed.html): <http://www.livescience.com/52700-mysterious-geoglyphs-in-kazakhstan-revealed.html>
21. Kiani, M. G. (2012). The Aspects of Iranian Art in the Parthian Period. *World Applied Sciences Journal*, 18(8), 1110-1118.
22. Kindermann, H. (1986). Al-Asad. In H. Kindermann, *Encyclopedia of Islam 1* (p. 681). Leiden: E.J. Brill.
23. L. Teall, J. (2015, 11 23). *Byzantine Empire*. Retrieved from [www.britannica.com](http://www.britannica.com/place/Byzantine-Empire): <http://www.britannica.com/place/Byzantine-Empire>
24. Lochtefeld, J. G. (2002). *The Illustrated Encyclopedia of Hinduism: N-Z*. The Rosen Publishing Group. Retrieved from https://books.google.co.in/books?id=g6FsB3psOTIC&redir_esc=y
25. M^a Pilar Burillo-Cuadrado, F. B.-M. (2014). THE SWASTIKA AS REPRESENTATION OF THE SUN OF HELIOS AND MITHRAS. *Mediterranean Archaeology and Archaeometry*, 14, 29-36.
26. Mckenzie, D. A. (1915). Chapter 15: Ashur the National God of Assyria. In D. A. Mckenzie, *Myths of Bablyonia and Assyria* (p. 326).
27. *Meaning of SSNP Logo*. (1977). Retrieved from [ssnp.com](http://www.ssnp.com/new/about.htm): <http://www.ssnp.com/new/about.htm>
28. *Meaning of Swastika & Armenian Wheel of Eternity*. (2013, october 14). Retrieved from [liveleak](http://www.liveleak.com/view?i=204_1381725038): http://www.liveleak.com/view?i=204_1381725038
29. *Pro-Swastika*. (n.d.). Retrieved June 2016, from <http://proSwastika.org/>
30. Saadi-nejad, M. (2009). Mythological Themes in Iranian Culture and Art: Traditional and Contemporary Perspectives. In *Iranian Studies* (pp. 1-23).
31. Saidazimova. (2005, December 16). *Tajikistan: Officials Say Swastika Part Of Their Aryan Heritage*. Retrieved from [Radio Free Europe/Radio Liberty](http://www.rferl.org/content/article/1064129.html): <http://www.rferl.org/content/article/1064129.html>
32. *Sanskrit dictionary*. (n.d.). Retrieved JUNE 2016, from <http://www.sanskritdictionary.com/svasti/278416/1>

33. Savich, A. (2013, June 12). *Dagger and Swastika*. Retrieved from serbianna.com: <http://serbianna.com/analysis/archives/2151>
34. Sinha, S. (2014, May 16). *Seljuq*. Retrieved from www.britannica.com: <http://www.britannica.com/topic/Seljuq>
35. *Star and Crescent of Islam*. (2013, Nov 7). Retrieved from symboldictionary.net: <http://symboldictionary.net/?p=2395>
36. Stucky, J. (2005). *Inanna's Descent to the Underworld*. Retrieved from MatriFocus: <http://www.matrifocus.com/BEL05/spotlight.htm>
37. *Symbolictionary*. (n.d.). Retrieved june 2016, from <http://symbolictionary.net/?p=984>
38. Syrigos, D. J. (n.d.). *ANCIENT ORIGINS*. Retrieved JUNE 2016, from <http://www.ancient-origins.net/myths-legends/symbol-Swastika-and-its-12000-year-old-history-001312>
39. *The Aryan Invasion Issues*. (2015). Retrieved JUNE 2016, from <https://aryaninvasionmyth.wordpress.com/2015/02/05/vedic-indian-migration-to-sumer-dna-evidence/>
40. The Swastika: the symbol. (1974). In *Considine Swastika* 030117 original (pp. 1-15).
41. walker, s. (2012). *THE TRUE HISTORY OF ANCIENT CIVILIZATIONS/ SUMERIANS/ AKKADIANS/ EGYPTIANS*. Retrieved JUNE 2016, from <http://trueancienthistory.blogspot.in/2012/12/ancient-symbols.html>
42. William, E. (1953). *Caucasiun Battlefields*. Cambridge: Cambridge University Press.
43. Wilson, T. (1894). The Swastika. In T. Wilson, *The Swastika*.
44. Wilson, T. (1894). *The Swastika*. USA: Northvegrn.
45. Yapp, M. E. (2015, Oct 23). *Ottoman Empire*. Retrieved from www.britannica.com: <http://www.britannica.com/place/Ottoman-Empire>



Swastika's Voyage

Where it all started

‘ Romanesque depictions of Christ were conceived in terms of the spiral or Swastika which harmonized the stance and dictated lines of limbs and drapery. This provided the means for the reintroduction of the ancient symbol, the whirlpool of creation around which are arranged the hierarchies of created things emanating from it... ’

Swastika's Voyage: Where it all started

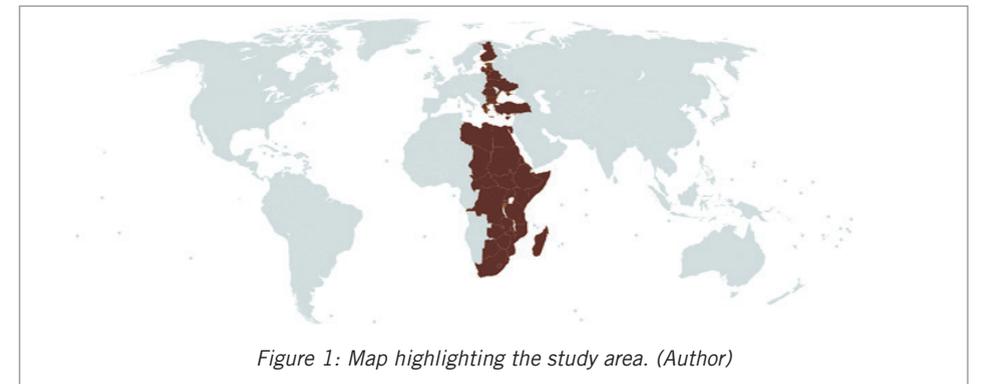
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Vikas Nimesh⁵, Deepanjan Saha⁶

Introduction

Swastika is one of the oldest symbols with traces all through history - abundant in both heritage and science. The four arms bent at right angles have been a symbol with positive connotations till it was adopted by the Nazis. Even now, the Swastika is used as a source of positive influence in most parts of the world.

While extensive studies reveal the occurrence of this symbol in different parts of the world, the origin, and its migration patterns are yet to be conclusively determined. At present, most information is mainly speculative, and estimations are based on archaeological evidences, invasion and migration timelines.

Though the Swastika has mainly been used to denote good luck and prosperity, it has different meanings in different regions. The associated meanings of this symbol include the sun, progress, revolution, cardinal directions, wealth, and power. The geographic expanse under inspection in this chapter is highlighted in Fig. 1.



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Timeline and Approach to the study

Components of research

Countries in the study area include Finland, Estonia, Latvia, Lithuania, Belarus, Ukraine, Moldova, Bulgaria, Romania, Macedonia, Greece, Turkey, Cyprus, Egypt, Sudan, South Sudan, Kenya, Uganda, Tanzania, Zambia, Madagascar, Zimbabwe, Swaziland, Ethiopia, and South Africa.

These countries are broadly classified into four regions depending on their culture, linguistics, geographic location. These are namely Baltic region, East Slavic region, and Balkan region and East Africa region.

Baltic region is known as the north-eastern region of Europe comprising of Estonia, Latvia, and Lithuania, on the eastern coast of the Baltic Sea. The Baltic region terrain is home to more than 7,000 lakes and a myriad of mossy bogs, swamps, and marshes. Glacial deposits in the form of eskers, moraines, and drumlins are prevalent. These tend to interrupt the drainage pattern, which results in recurrent flooding. The Latvian and Lithuanian people speak languages belonging to the Baltic branch of the Indo-European linguistic family and are commonly known as Balts. The Estonian (and Livonian) people, who are considered Finnic peoples, speak languages of the Finno-Ugric family and form the southern branch of the Baltic Finns (Encyclopaedia Britannica, 2016).

East Slavic region is defined by the countries that speak the languages of the East Slavic language group. Ukraine, Belarus fall under this region. Although Bulgaria geographically falls partly under the Balkan region, it is considered as a part of this group on the basis of linguistics. Each branch of Slavic originally developed from Proto-Slavic, the ancestral parent language of the group, which sequentially developed from an earlier language that was also the antecedent of the Proto-Baltic language. The exact geographic borders of the Balto-Slavic domain appear impossible to determine, but they may well have been located in Eastern Europe around present-day Lithuania and to the east and south of it (Encyclopaedia Britannica, 2016).

Balkans, also called Balkan Peninsula, easternmost of Europe's three great southern peninsulas. The countries that fall under this region are Romania, Macedonia, Greece, Cyprus and western part of Turkey. Cultural diversity is one of the region's most characteristic social and political features. The mountainous terrain of this region was the reason of the name Balkan (Turkish: Mountain). The peculiar nature identified with 'Balkanization', i.e. fragmentation of ethnic groups—derives in part from the disintegration brought about by the hilly relief. Balkan Sprachbund has been taken as the basis of linguistic territory for this section rather than the geographic territory.(Encyclopaedia Britannica, 2016).

Eastern Africa geographic region includes Egypt, Sudan, South Sudan, Kenya, Uganda, Tanzania, Zambia, Madagascar, Zimbabwe, Swaziland, Ethiopia, and South Africa. The languages in these countries belong to the Afro-Asian language family which can be further classified into Cushitic, Nilo-Saharan, Semitic and Coptic-Egyptian language groups (Encyclopaedia Britannica, 2016).

Research Questions

In this section, the answers to the questions we are trying to find are:

- What was the origin of Swastika in the study region, was it endogenous or exogenous?
- If exogenous of origin, how did it travel to the study region?
- How are the different cultures observed in the study region linked, through the lens of Swastika?

Conceptual framework

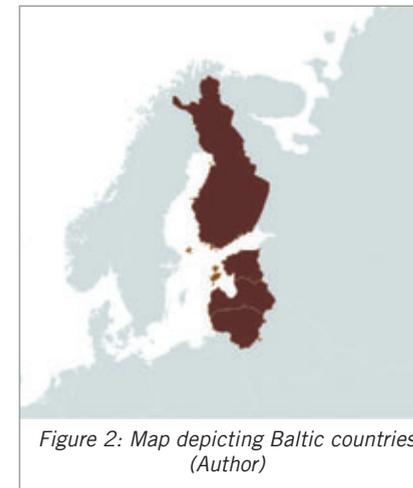
To decide the conceptual framework, the first thing that is to be considered is the characteristics of Swastika, the different forms of Swastika. Essentially, it is a cross with equal arms bent at right angles. It is also called 'Fylfot' which is originally derived from Anglo-Saxon 'Fower-fot' which means many limbed. In Greece, it is also called a 'Gammadion' or a 'tetraskelion'.

The aim of this paper is to study the occurrence of the Swastika in different cultures and its significance and to find a common thread that weaves all these cultures together. Investigation of the study regions along the lines of timeline, socio-cultural factors will help to accomplish this. From these factors, scientific parameters and heritage/ cultural parameters are determined for each region which forms a matrix. The matrices formed for each region classify the occurrence of Swastika. These matrices are further used to establish the connection between the migrations of Swastika from one culture to another. The study is based on secondary data sources available in articles, and journals.

In the subsequent section, evidences found in each of the above mentioned sub-regions have been discussed in detail.

Evidences

Baltic region



The Baltic region has a rich history of migration and invasions. The countries have fallen under incursion at different points of time, which have left impact on the socio-cultural aspects of the people. The major historic events from the region are stated in Table 1.

Table 1: Historic events of the Baltic region

Year	Event
7000 BCE	Sami (Finno – Ugric Family) tribes migrated to Finland
3000 BCE	Balts (Baltic language family) migrated to Baltic region
3000-1500 BCE	Baltic Finns (Finno – Ugric family) migrated to Baltic region (modern day Estonia, Latvia, Lithuania)
2500-1800 BCE	Livonian tribe (Uralic Livonian language family) emerged in south western Estonia and northern Latvia (Livonia), and started mixing up with the Finno- Ugric tribes
9th Century CE	Scandinavian Viking Incursion began in the coastal areas
11th Century CE	German Incursion began
12th Century CE	East Slavic incursions overrun Estonia and most of the Baltic region. Introduction of Roman Catholic Christianity in Estonia
13th Century CE	Northern Crusades started, Formation of the “Livonian brothers of the Sword”, conversion of Estonia, Latvia, Lithuania, and Finland into Christianity
18th Century CE	Russian conquest

various forms of the Baltic Swastika include the following.

- i. ‘*Hannunvaakuna*’: (looped cross): symbol of protection against evil.
- ii. ‘*Tursaansydän*’: bringer of good luck and protection against evil, also known as Ukko’s hammer. In Finland, Ukko is the equivalent of Scandinavian Thor.
- iii. ‘*Pērkonkrusts*’: Commonly known as the thunder-cross, symbol of the god of thunder Pērkon, and sky deity of Baltic religion, renowned as the guardian of law and order and as a fertility god. Equivalent to Scandinavian Thor.

Finland

Hannunvaakuna (looped cross) found on a wooden ski in Finland is the oldest surviving example, although it was created in between 400-600 CE. In 12th century CE first occurrence of Sami Drums with Swastika pattern was recorded. Refer Fig. 3 for a typical Sami Drum.



In early 20th century CE, revival of the Finnish Neo-paganism brought forward the use of Swastika again. Since 1931 CE, Swastika is being used as the emblem of the Finnish air-force. In 1977 CE, *Hannunvaakuna* was used on a penny.

Estonia

Post 10th Century BCE, the oldest surviving example of Swastika in the Baltic region was found on Iron Age artefacts discovered in a hoard near Kumna in Estonia (Refer Fig. 5). Estonian mythology and culture is closely associated with those of Finland, as they belong to the Finno-Ugric family. With the revival of Estonian Neopaganism in 1928 CE, Swastika was revived. In 1941 CE, Swastika was used on a postage stamp, it was also the emblem of the Estonian Defence Force from 1931-1941 CE.



Figure 4: a) Iron Age artefacts bearing Swastika from a hoard near Kumna, b) A postage stamp bearing Swastika released in 1941 CE, Estonia, c) The insignia of Estonian neo-paganism (neopaganism, 2015/5/2)

Latvia & Lithuania

These two countries are closely linked as they were inhabited by the Balts who are the Baltic language speaking branch of the Indo-European language family. Their culture and mythology was similar to each other. The first occurrence of Swastika in these countries was found in 12th century CE on textiles. The Swastika was known as ‘*Pērkonkrusts*’ (Thunder cross). After the conversion of the pagans residing in this region in 13th century CE, the use of the Pagan symbols were discontinued. Although the visually similar Teutonic cross was being used predominantly. In early 20th century CE, the revitalization of Neopaganism (‘*Dievturība*’ in Latvia, ‘*Romuva*’ in Lithuania) brought forth the use of Swastika again. Use of Swastika on rocks, weapons, potteries, textiles, coins and dance form is prevalent in Latvia and Lithuania.



Figure 5: **a** Latvian Ceremonial dance
b A 12th century CE woollen wrap from Latvia,
c The insignia of Lithuanian Neo-pagan belief Romuva (neopaganism, 2015/5/2)

Explanation of evidences

As seen in the Table 1, the first settlement in Baltic region began when the Sami tribe (Finno-Ugric family) migrated to Finland in 7000 BCE. The people in modern day Finland and Estonia belong share this lineage. The modern day Balts, they were an Indo-European language speaking ethnic group and they settled in modern day Latvia and Lithuania. The Balts were divided into different tribes e.g. Semigallians, Latgallians, Selonians, Lithuanians, and Yotvingians. The Livonian tribes emerged in between 2500-1800 BCE. These tribes followed pagan beliefs. In Finland and Estonia, their belief system and mythology was influenced by the Norse mythology. The tribes residing in Latvia and Lithuania they shared a common mythological belief root. The common factor between these two ethnic groups was they both considered the God of Thunder (Ukko-Finland, Ta'ara- Estonia, Pērkon- Latvia and Lithuania) as the supreme deity whose symbol was different forms of Swastika. He was the equivalent of Thor in Scandinavian mythology. He symbolizes the creative forces (including vegetative), courage and success, the top of the world, the sky, rain, thunder, heavenly lightning and celestial elements.

East Slavic region

Early Slavic society was a typical social group society of the European Iron Age, with a decentralised organisation in native chiefdoms. A slow method of centralization occurred between the seventh and ninth centuries. Throughout this era, the prior uniform Slav cultural space fashioned into a lot of distinct zones (Barford, 2001). The major events that impacted upon the East Slavic region socio-cultural aspects are listed below

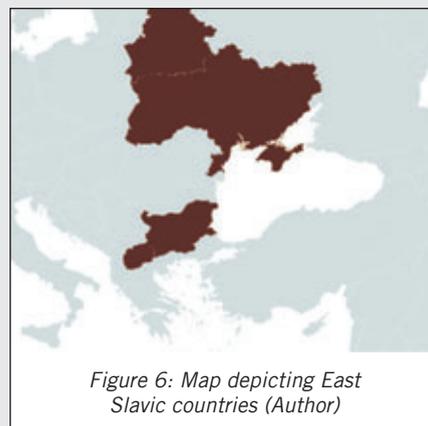


Figure 6: Map depicting East Slavic countries (Author)

Table 2: Historic events of the East Slavic region

Year	Event
600 CE	Split of Slavs linguistically into southern, western, and eastern branches.
8th -9th Century CE	The south branches of East Slavic tribes had to pay tribute to the Khazars
	The Ilmen Slavs and Krivichs were dominated by the Varangians of the Rus' Khaganate
10th Century CE	Earliest tribal centres of the East Slavs were formed that included Novgorod, Izborsk, Polotsk, Gnezdovo, and Kiev
11th Century CE	The disintegration of Kievan Rus resulted in considerable population shifts and a political, social, and economic regrouping.

Belarus

Embroidery is one of the oldest crafts in the history of the Slavs and Kolovrat was one of the most common symbol used. Nowadays, Kolvorat is being popularized by Slavic groups as the symbol of their identity.



Figure 7: Swastika used in Embroidery (ProSwastika, 2012)

Ukraine

The earliest Swastika known has been found in Mezine, Ukraine. It has been found carved on a Palaeolithic mammoth ivory figurine and is believed to date back to 10000 BCE. Though it has also been suggested that this Swastika may be a stylized picture of a stork in flight and not a true Swastika.

- Swastika has been found in Ukraine in the St. Michaels Church in the form of wall paintings as well as a hand held cross.
- Also various pottery fragments with the Swastika symbol have been uncovered on the right side of the Dnipro River in Ukraine (Aratta). (ProSwastika, 2012)
- The present use of the Swastika symbol in Ukraine is as a symbol of the Azov Regiment, the National Guard of the country. (Klein, 2015) (refer Figure 8)

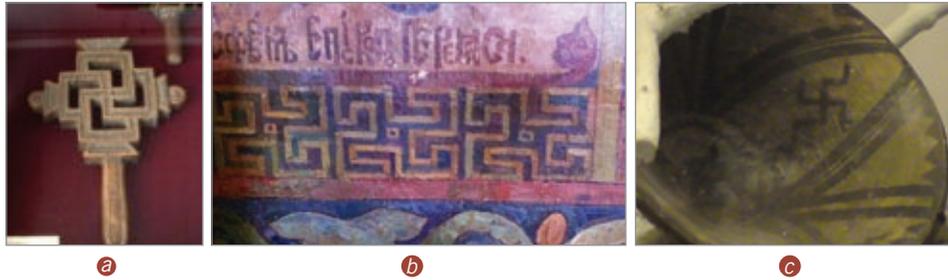


Figure 8: **a** Hand-held cross with Swastika patterns found in Ukraine, **b** Wall frescos at St. Michaels Church from 12th century CE, **c** Pottery fragments uncovered on the right side of the Dnipro river in Ukraine (Aratta). (ProSwastika, 2012)

Bulgaria

A pottery fragment with the image of a Swastika, geologically dating back 7,000 years, was found by archaeologists throughout excavations of a ritual pit round the village of Altimir close to the city of Vratsa. (ProSwastika, 2012).

The Church of Christ Pantocrator may be a medieval Eastern Orthodox Church within the Bulgarian city of Nesebar (medieval Mesembria), on the Black Sea coast of Burgas Province. It had been created within the 13th–14th century and is best illustrious for its lavish exterior decoration. The outer walls have Swastika-like frescos on them (ProSwastika, 2012). (refer Figure 9)

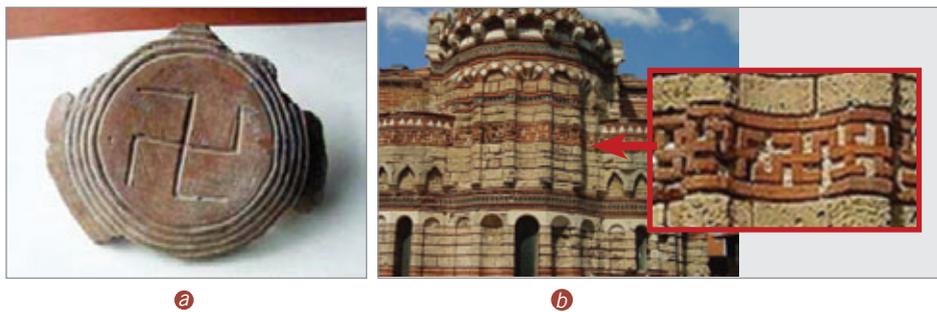


Figure 9: **a** 7000-year old pottery fragment, **b** Wall frescos on The Church of Christ Pantocrator, late 13th or early 14th century CE (ProSwastika, 2012)



Figure 10(a): Mosaic floor of the Plaosnik basilica in Ohrid/Macedonia 4th -6th century CE (ProSwastika, 2012)

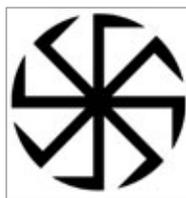


Figure 10(b): Kolovrat

Plaošnik or simply Plaoš is an archaeological site and holy place in Ohrid. On Plaošnik has been discovered the baptistery of the five aisle basilica with hooked crosses (Swastikas) on the mosaic floors which date from the period between 4th and 6th century CE. (R., 2008)

Explanation of evidences

Very little data on the pre-Christian, Slavic paganism is accessible, due to lack of written records. However archaeological evidences of the Tetraskete, utilized in the shape of Kolovrat are plenty. It absolutely was and continues to stay a symbol with vast significance in Early Slavic culture. The Kolovrat, besides denoting the never ending cycle of life, additionally depicts the Sun, a source of heat and luxury. Embroidery among Slavs used Kolovrat as one of the leading common symbols. Wood Slavic monuments referred to as ‘Idols’ were sometimes depictions of Slavic gods and were graven with Tetraskete. Slavic Kolovrat is often thought about extension or variation of the ‘original’ Swastika and it shares the latter’s solar symbolism. The image depicts Svarog-The Slavic spiritual being of the Sun, fittingly diagrammatic by the cyclic form that the motif takes. The sun’s movement is indicated by the rotation of the symbol’s rays that look as if they’re spinning. Etymology of the word, which might translate as the ‘rotating circle’, confirms this visual impression. The quantity of rays in a Kolovrat might take issue, however they’re all arched at the highest. A number of those arches are directed either clockwise or counter-clockwise. The major common forms are those of eight or six rays, although 3 and 4 rayed symbols are also found. (Twiggietruth, 2015).

There are varied interpretations of Kolovrat excluding it being the image for the sun. For example, it’s believed to denote the eternal cycle of life and death. Contemporary neo-pagan movements attach lots of significance to the Kolovrat, and administer the image to numerous things throughout ‘Maslenitsa’ festival and to tiny statues and figurines that are called ‘Polovetskie baby’.

Balkan Region

Balkan region was settled by few of the oldest civilization. The history of urbanization in ancient Europe starts from the Balkan region with the advent of Hissarlik, Cyprian, Greek civilizations. Many times this region fell under foreign invasion and that influenced the history and culture of this this region. Table 3 compiles the brief history of the Balkan Region. It gives a brief overview of the different colonies established over time and the different wars that were waged on these lands.

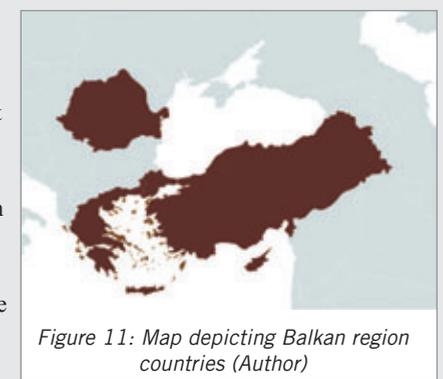


Figure 11: Map depicting Balkan region countries (Author)

Table 3: Historic events of the Balkan region

Year	Event
7000 BCE	Evidence of food producing economy, simple hut construction, and seafaring in mainland Greece and the Aegean.
5700-4500 BCE	Central and South-eastern Europe-Vinca Culture
	South-eastern Europe-Starcevo Culture
1400 BCE	Hellenization of Cyprus after the colonization of Mycenaeans
8th Century CE	The lands of Cyprus were conquered and unified by the Neo-Assyrian Empire under Sargon II.

Year	Event
3000- 1100 BCE	Evolution of Troy from a city of mud brick houses with rubble wall to an enormous grand citadel with grand wealth.
4th Century BCE	Spread of Hellenistic culture throughout Europe.
380 BCE	Persia conquered Cyprus
58 BCE	Cyprus became a Roman province
1st Century CE	Introduction of Christianity
4th century CE-10th century CE	Byzantine empire rule in the region.
	Slavic migration in waves
1570CE	Ottoman Invasion
20th century CE	Balkan wars
2008 CE	Joined the European Union

Romania

Swastika is found in Romania on the artefacts of Cucuteni culture, which are 7000 years old. The Cucuteni spiral pattern signifies the sun's course around the earth as the Swastika. Some vases seem to be composed of the shape of coiled snakes. Artefacts were also found from Roman Era (4th – 5th century CE) in the pattern of Swastika with each arm as a stylized horse head. It is also found in the symbol of Zalmoxian Bible, or the “Bible” of Romanian paganism introduced by the Thracians (2500-375 BCE) (ArtemideAste, 2013). [Refer Figure 12 (b)]

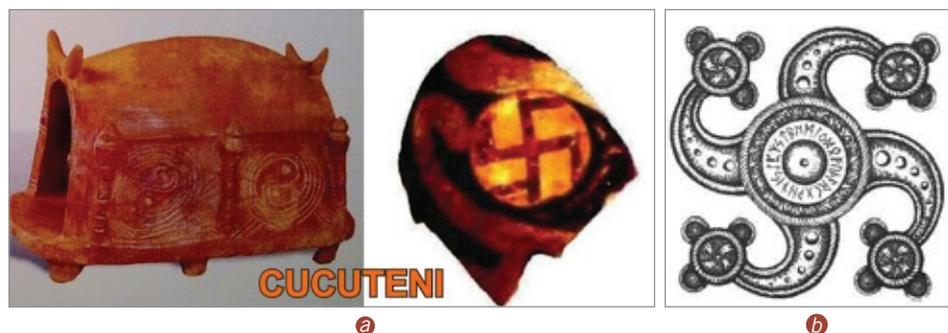


Figure 12: (a) 7000 year old Cucuteni culture artefacts (Roxin, 2015);
 (b) Symbol of Bible in Romanian Paganism (Beanstalk, 2014)

Greece

There has been abundant discoveries of Swastika in Greece and surrounding areas on various objects of bronze and gold, but the most extensive evidences were present on the pottery, majorly painted vases. The Swastika made its appearance in Greece around 1000 BCE on potteries. Figurines of Goddess Athena were found with the symbol of Swastika tattooed on them. After the tra-

dition of tattooing disappeared, they started placing Swastika on religious garments of the deities as noticed on idol of Aphrodite- Ariadne. (Figure 14). This symbol was often complimented with figures of peacock, which is peculiar as this bird is a native of India. It is believed that the presence of peacocks was registered in the Greek Civilisation only after the conquest of Alexander the great. They considered it a symbol of immortality and included it in their pantheon of deities as the chariot carrier of Goddess Hera. (Gamm, 2012).

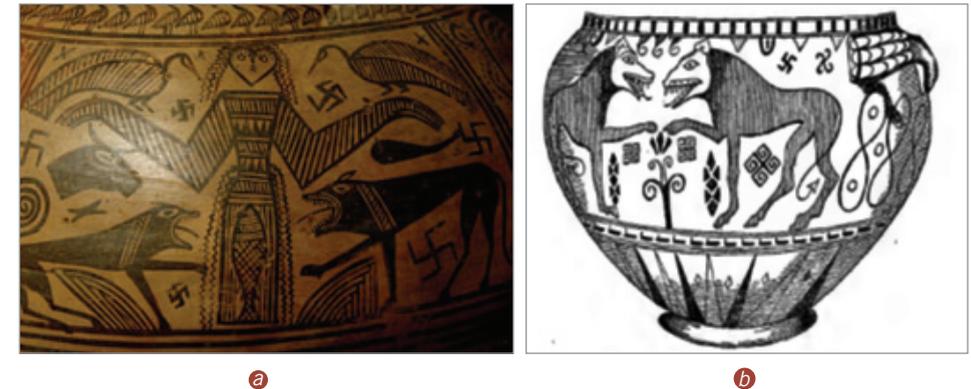


Figure 13 (a) Swastika surrounding the great nature goddess (800-1000 BCE (The Telegraph, n.d.);
 (b) Example of Swastika found on archaic pottery in Greece circa. 750 BCE (Wilson, 1984)

The Greeks associated Swastika with Apollo - their Sun God. The statue of Apollo in his chariot found at historical museum in Vienna features a large Swastika illustrated on his chest. (refer Figure 14) (Wilson, 1984).



Figure 14: Example of Swastika on Greek idols (from left: Athena; Aphrodite-Ariadne; Apollo on his chariot) (Wilson, 1984)

Swastika also marked its presence on various coins, helmets, brooches or fibulae of this region in the later periods. [refer Figure 15(b)]



Figure 15: **a** Pegasus and Swastika, Silver Stater of Corinth c. 550-500 BCE; (Coinproject.com, n.d.)
b Coin from Gnosus, a city on the north coast of the Island of Crete. 440 BCE. (Nicholas, n.d.)

The Grid-iron pattern of ancient cities of Greece can be linked to the symbolism of Swastika. For instance, the city of Miletus, planned by Hippodamus was in synchronization with the cycle of nature and flow of wind. Just like the geometry of Swastika consists of a central pivoting point around which the arms are laid, these cities had the public buildings at the centre of the city around which the settlements existed and thrived. [refer Figure 16 (b)]

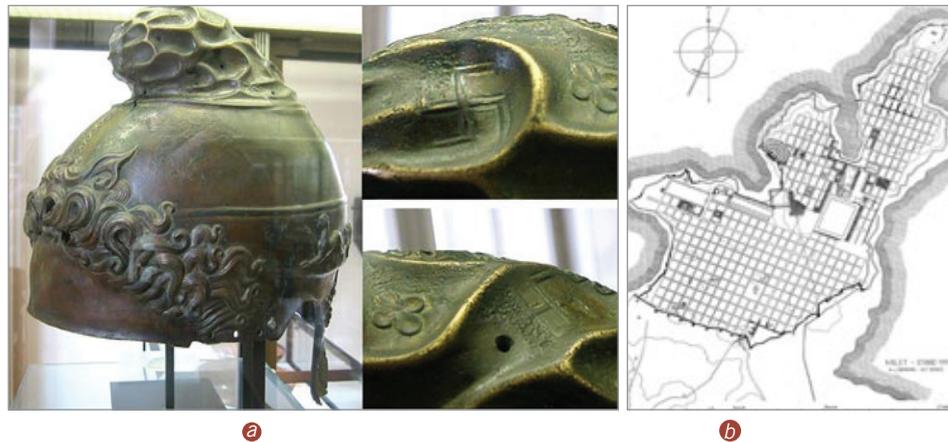


Figure 16: **a** Greek Helmet 350 BCE. (the ProSwastika, 2012);
b Plan of Miletus around 470 BC. (Lahanas, n.d.)

Hissarlik (Troy)

It is one of the major ancient cities of Western Turkey well known for the Trojan War- the war waged by Greece on the city of Troy. Archaeological evidences insinuate towards nine layers of settlement history over the same site, all destroyed either because of war or natural calamities. The initial evidences of Swastikas on spindle wheels were found in the City of Troy from around 2500 BCE. This Swastika sported crooked rays, turned towards the right, alternate with straight and un-

dulating rays, all of which proceed from the same disk. It can be safely inferred that it symbolises the Sun. It is also found on an idol of the Artemis Nana of Chaldea, who became the chief deity of Carchemish - the Hittite capital. This leaden idol was unearthed with the symbol engraved on the vulva of the goddess which symbolized the generative power of man among the Trojans. Swastika in the form of Tetraskelion and triskelion was also discovered in coins from 480 BCE (Wilson, 1984).



Figure 17: **a** Swastika on Spindle wheels retrieved from Burnt city of Troy,
b Triskelion and Tetraskelion of 5th century BCE coin; (Wilson, 1984)
c Leaden idol of Artemis Nana. (Haynes, 209)

Cyprus

The fascinating history of changing empires in Cyprus can be considered as the leading reason for significant usage of Swastika in the region. A major example of Swastika's occurrence is a terracotta figurine of a sun-priestess, who had Swastikas engraved on her attire. It had visual similarity with the image of Egyptian goddess of war and healing - Sekhmet who carries the sun on her head. Swastika was also associated to Apollo and found on pottery along with Palm tree which is sacred to Apollo. It can be safely assumed that Swastika was associated with the Sun in Cyprus similar to the case of its neighbour- Greece.



Figure 18: Swastika associated with Cyprus deities (from left: A sun priestess, Palm tree signifying Apollo, (Wilson, 1984) the peacocks of Hera) (The British Museum, n.d.)

Explanation of the evidences for the Balkan Region

The Greek Fret is basically a decorative border that constitutes of a continuous shaped into a repeated motif. (refer Figure 19). The symbol of Swastika has often been speculated to have originated from this particular motif in the Balkan Region; as a broken down form of it. "There is no proposition in archaeology which can be so easily demonstrated as the assertion that the Swastika is originally a fragment of the Egyptian meander, provided Greek geometric vases are called in evidence" (Goodyear, 1891). So, it can be concluded that the Greek fret might exhibit resemblance to Swastika in an ornamental sense but has no connection to the symbolism of Swastika.

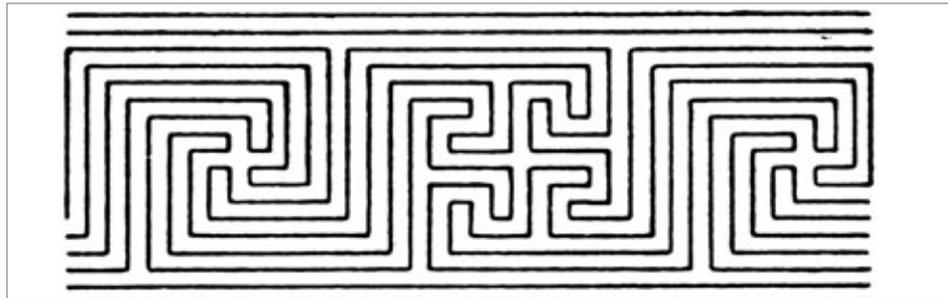


Figure 19: Typical Greek Fret (Florida Center for Instructional Technology., 2011)

The evidences found on the idols of goddesses Aphrodite-Astarte, Aphrodite-Ariadne, and Artemis Nana of Chaldea insinuate towards its relation to fertility and the generative power of man. In Greece, Cyprus, and West Turkey (Lycia), Swastika primarily symbolised the Sun, the four seasons resulting from the cyclic motion of Sun, the four directions, fertility and the biological cycle of life.

Eastern Africa region

The African history is filled with powerful dynasties and rulers and each civilization that came up had their own unique set of beliefs to go by. The emergence of Swastika in the east African region is scarce, but not completely non-existent. Africa's history has been challenging for researchers in the field of African studies because of the scarcity of written sources in large parts of the continent particularly with the destruction of many of the most important manuscripts from Timbuktu.

Scholarly techniques such as the recording of oral history, historical linguistics, archaeology and genetics have been crucial. The recorded history of early civilization arose in Sudan (Kurma civilization - originally as a part of the Kingdom of Kush pre-dating well recorded history), and later in Ancient Egypt, the Sahel, the Maghreb and the Horn of Africa



Figure 20: Map depicting African countries (Author)

Egypt

The Swastika predates the ancient Egyptian symbol of the Ankh, which denotes eternal life. Though there has been no mention of the Swastika in ancient texts, several evidences of its use have been found in the region. In Egypt, the symbol has been found on various pottery fragments, mosaics and naukritis dated 400-700 BCE (taj-akoben, 2014).

As per Professor Goodyear, the Swastika might be a derivative of the sacred lotus pattern in Egypt. A lotus in form of Swastika was found in a tomb in Thebes which dates back to 13th century BCE. (Goodyear, 1891) (refer Figure 21)



Figure 21: Lotus pattern in form of Swastika from Thebes, Egypt (Wilson, 1984)

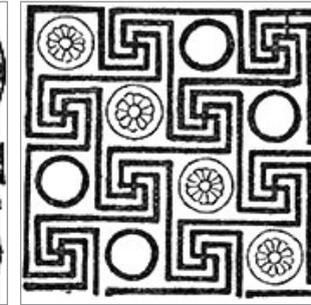


Figure 22: Egyptian meander pattern (Wilson, 1984)



Figure 23: Swastika meander pattern found on pottery in Naukratis, Egypt (Jones, 2013)

Libya

Swastika was found on Mosaic floor pattern at the Roman port of Sabratha in Libya. Sabratha's port was established, perhaps about 500 BCE, as a Phoenician trading post that served as a coastal outlet for the products of the African hinterland (ProSwastika, 2012). (refer Figure 24)

Ethiopia

The Rock church in Ethiopia, constructed in the 12th century CE, features Swastika designs on its windows. The 'New Jerusalem' was created after Muslim conquests made travel to the Holy Land dangerous (Wordpress.com, 2014) (refer Figure 25)

Kenya

Another instance of the Swastika in East Africa is that of the layout of the Kenyatta National Hospital in Nairobi (refer Fig. 31). Kenyatta National Hospital in Nairobi is the oldest hospitals in Kenya. Founded in 1901 CE, it was renamed Kenyatta National Hospital — after Jomo Kenyatta — following independence from the British. It is currently the largest referral and teaching hospital in the country (Steve, 2013).



Figure 24: Swastika on Mosaic floor pattern at roman port of Sabratha, Libya (ProSwastika, 2012)

Figure 25: Swastika at Lalibela church, Ethiopia (Wordpress.com, 2014)

Figure 26: Kenyatta National Hospital in Nairobi (Steve, 2013)

Explanation of the evidences

The evidences available in sub-Saharan Africa shows that except for Egypt, the Swastika symbol was exogenous to the countries under different colonization periods majorly under Roman influence. In Egypt, the origination of Swastika could have been derived from the lotus symbol according to some researchers. In later periods, the meandering form of Swastika could have been originated as a result of trading activities with Greece, from Greek keys and fret. Nonetheless, Swastika here was a solar symbol

Interpretation / Discussion

To facilitate analysis of the findings, a matrix (refer Table 4) has been tabulated on the basis of selected parameters. These are derived on the occurrence of Swastika across the region in different forms; for instance, in artefacts, built-form, as a part of belief systems and what they signify in respective cultures – which probably are reflections of many natural phenomena namely, planetary motion, elements of nature, economy etc. These parameters are grouped into scientific and cultural types, as noted below.

- Scientific: 1. **Planetary motion**, 2. **Elements of nature**, 3. **Life cycle**, 4. **Economy**
- Cultural: 1. **Arts and crafts**, 2. **Built form**, 3. **Sacred rituals**

These heads are put under a (4 x 3) matrix and different regions are color-coded and cross-referenced. This matrix will explain the pattern of occurrence of Swastika and explain its significance in different regions in a nutshell.

Table 4: Science- Culture matrix

		Cultural / Heritage parameters		
		Art / Craft	Built Form	Sacred Ritual
Scientific parameters	Planetary motion	Baltic Region		
		Balkan Region		
		East Slavic		
	Elements of nature	East Africa		
		Baltic Region		
		Balkan Region		
	Life Cycle	East Slavic		
		East Africa		
		Baltic Region		
	Economy	Balkan Region		
		East Slavic		
		East Africa		

The matrix shows that the use of Swastika in the Baltic region was more diverse compared to other cultures. East Slavic culture also shows a diversity in the use of Swastika. The Balkan region and east African region was more unidirectional.

Networks

The civilizations in this section are some of the oldest ones on the face of Earth. It is widely accepted amongst scientists that Africa was the home to the 'Modern man' i.e. Homo sapiens after genetic mapping was conducted and established. The journey of people from its origin can be traced in the map (refer Figure 27) which was generated by tracing the genetic migration and origination. It entails the Migration from the African continent to Anatolia and Europe. The second map (refer Figure 28) highlights the relocation from Asia Minor to Cyprus and subsequently the Balkans after the last Ice Age.

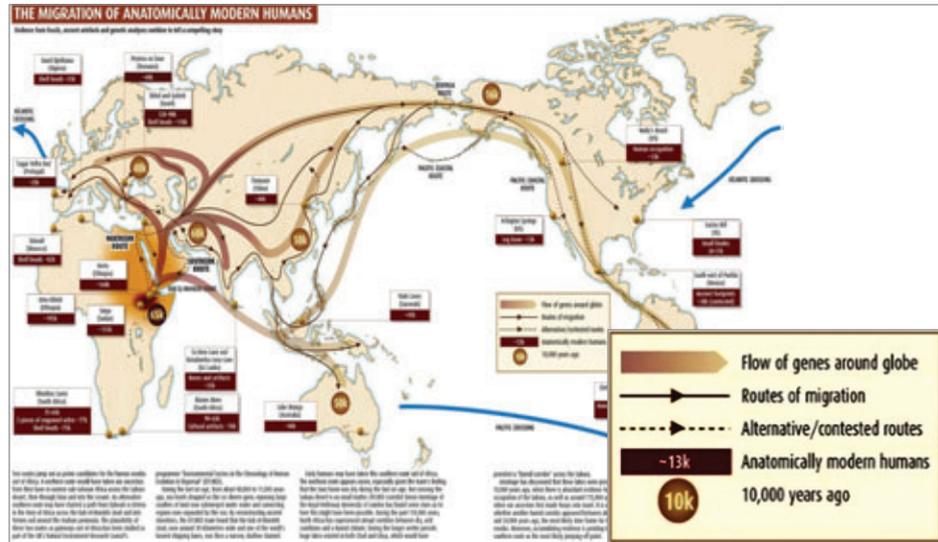


Figure 27: Migration Route of Modern man from Africa -Transpacific Project. (Harris, 2006)

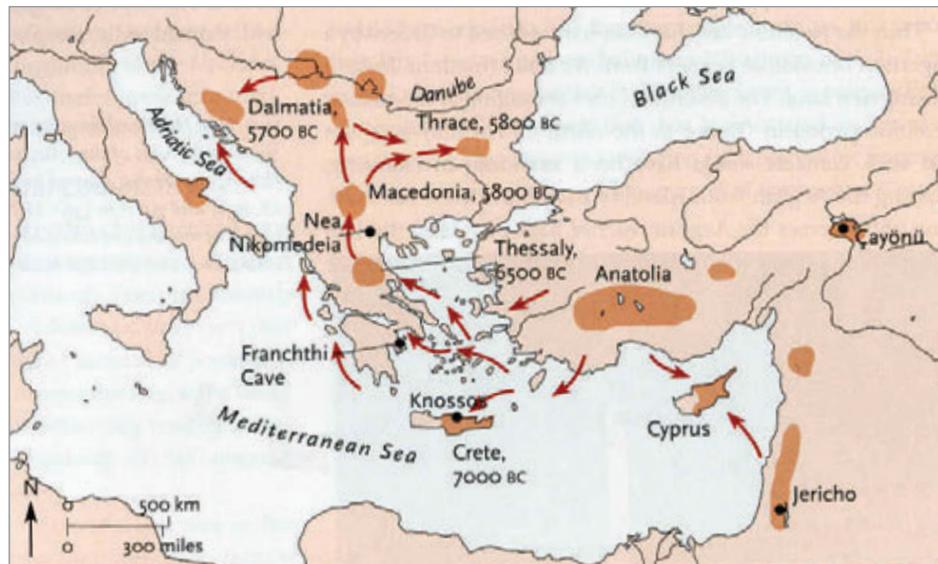


Figure 28: Migratory pattern from Asia Minor into the Balkans- East Europe. (Imreh, 2011)

This fascinating journey of Modern man that from Africa initially towards the east 65 thousand years ago and later on turning back towards the west after Ice Age in the wake of civilisations marks an extraordinary phenomena.

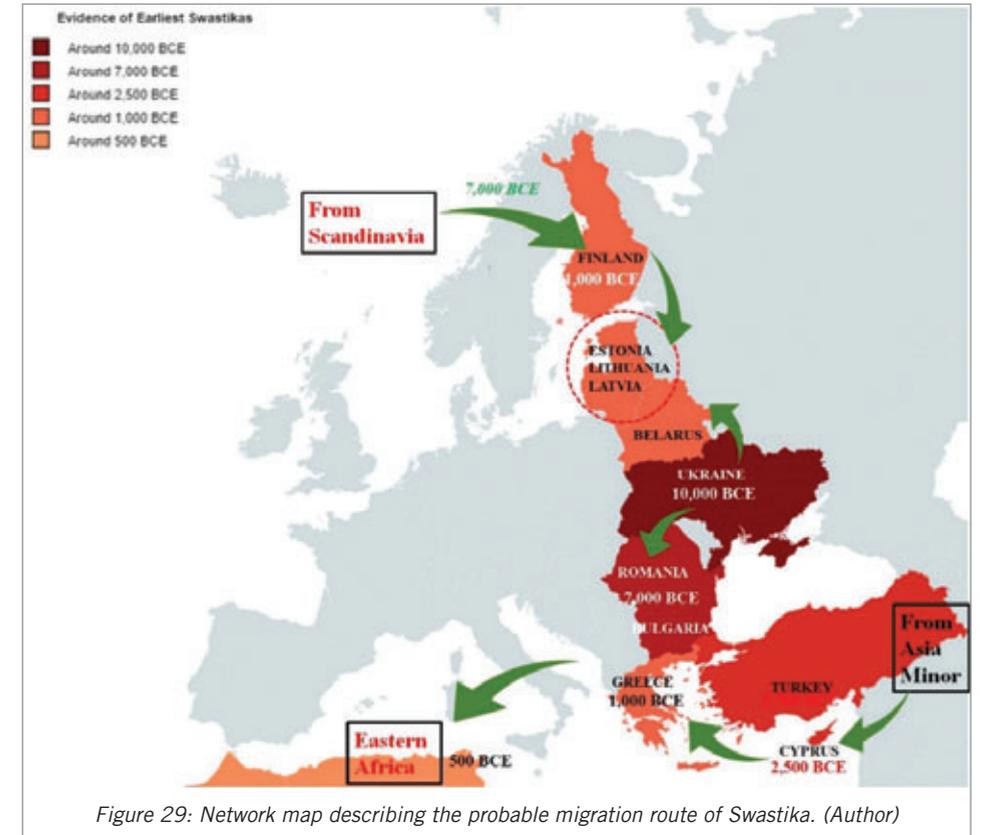


Figure 29: Network map describing the probable migration route of Swastika. (Author)

The Greeks were the first to establish a trade route to the Balkan region and the Baltic Region (Finland) simultaneously witnessed the inflow of Sami tribes from Scandinavia. The origin of Swastika in Ukraine about 10,000 BCE marks a singular incidence of occurrence in this region in Palaeolithic age. In 7000 BCE, traces of Swastika were discovered in Bulgaria and Romania which can possibly be attributed to the migration route from Ukraine. The evidences in the Baltic States indicate a later recognition of the geometry of Swastika as the evidences found are post 10th century BCE. Similarly, even though Africa was the epicentre of Modern man's origination, it lacked evidences of Swastika in its preconceived geometry. The symbolic connection to the symbol of Ankh can be taken into consideration but there are no particular academic evidences to this claim. The migration of Swastika from Asia Minor towards Cyprus and consequently Greece can be established as witnessed by the evidences. (refer Figure 29)

Research findings

The first question that needs answering is if the Swastika originated within the region or was it exogenous in its emergence. One of the earliest evidences found was in Mezine, Ukraine. It is carved on a Palaeolithic figurine of mammoth ivory, dated as early as about 10,000 BCE. This

is a solitary occurrence and therefore many scholars argue about its usage for conclusive deductions regarding it being the origin of Swastika in its symbolic association. They consider it as an accidental inscription of this geometry as there are no further evidences to reinforce the belief that Swastika symbolised any spiritual or astronomical event.

Methodological research for each of the regions yielded interesting links and evidences that alluded towards a probable migration pattern of Swastika and its changing symbolism. All through history, the most common connotations associated with Swastika are its depiction of the higher powers, be it nature or some deity.

In Celtic mythology, it depicts the various nature cycles, progress, the four directions or elements and action. Similarly, in East Slavic paganism, the Swastika is a symbol of the infinite values—from the mythological aspect of a spinning wheel symbolizing the fight between Slavic Gods Perun and Veles or the fight between Good and Evil. Other than the never ending cycle, it also symbolizes the sun, which grants us life and warmth. In the Balkans, it has substantial religious associations as it reoccurred inscribed on the deities of Greek mythology, particularly Apollo—the Sun God. It also depicted the continuous cycle of life being associated with Goddesses Aphrodite-Ariadne.

The Baltic States also have similar references, the Swastika is a symbol of their Thunder-God Perkons. The use of Swastika as plans for hospitals in Kenya and in architecture for different churches in Africa denotes its religious references. When viewed through the lens of the Swastika, we find all the regions of this section woven into a single thread depicting mythology, power, well-being and integrity.

Conclusions

The Swastika - it has essentially been a symbol to depict all that there is good. Throughout our study region, though the symbolism differs slightly from the traditional form, it still is a symbol of power, of human belief, of a higher power that is believed to guide us, protect and nurture us.

There are evidences by many scholars that hints towards the possibility of this sacred symbol having astronomical connections i.e. the geometry formed by the action of solar radiance. (Coimbra, 2011) This would point towards its endogenous origins simultaneously in various civilization in the same time period. On the other hand, the travel routes hint towards the migration of this symbol from Asia Minor to Cyprus and the Balkans and Slavic region later on via the trade route as discussed by Dr. Max Ohnefalsch-Eichter (1888).

Swastika has always been assigned to the strongest force in the climate experienced by people, be it thunder or sun. It is a symbol of justice, it is a symbol of creation. The Swastika is the symbol of man's relationship with nature. Above all, it is a symbol of change, a symbol of life cycle, the dynamic force of life that has been guiding and transcending human life.

Scope for further research

The research has been conducted on the basis of secondary sources available. This restricted the findings and inferences drawn from them. Contradictory statements by renowned scholars on the

origin and symbolism of Swastika leads to an ambiguity that leaves scope for further investigations to unravel the answers.

In many regions, there has been a revival of Swastika as a symbol of good luck in part to stave off the shadow of Nazi influence over its representation. Romanian and Slavic Neopaganism features Swastika on apparels and accessories making it trendy. Further revival techniques can be researched upon to change the image of Swastika just as classical symbol in this region and spread awareness of its actual origins.

Notes for further Reference

1. **Finno-Ugric people:** They are any of several folks of Eurasia who speak languages of the Finno-Ugric group of the Uralic language family, such as the Khanty, Mansi, Hungarians, Maris, Sámi, Estonians, Finns etc. Finno-Ugric speaking populations retain an amalgamation of West and East Eurasian gene pools, genetic drift, and recurrent founder effects due to migration. It is an important part of Baltic tribes and civilisations.
2. **Coptic or Coptic Egyptian language:** It is the latest stage of the Egyptian language, a northern Afro-asiatic language spoken in Egypt until at least the 17th century. Egyptian began to be written in the Coptic alphabet, an adaptation of the Greek alphabet with the addition of six or seven signs from demotic to represent Egyptian sounds the Greek language did not have.
3. **Balkan Sprachbund/Balkan language area:** It is the group of areal features—similarities in grammar, syntax, vocabulary and phonology—among the languages of the Balkans. Several features are found across these languages though not all need apply to every single language. The languages in question may be wholly unrelated, belonging to various branches of Indo-European (such as Slavic, Greek, Romance, Albanian and Indo-Aryan) or even outside of Indo-European (such as Turkish)
4. **Ankh:** also known as a breath of life, the key of the Nile or crux ansata (Latin meaning “cross with a handle”), was the ancient Egyptian hieroglyphic character that read “life”. The Egyptian gods are often portrayed carrying it by its loop, or bearing one in each hand, arms crossed over their chest. The ankh appears in hand or in proximity of almost every deity in the Egyptian pantheon. It is a symbol of the feminine and regenerative power of man.

References

- ArtemideAste, 2013. <http://www.artemideaste.com>. [Online]
Available at: <http://www.artemideaste.com/auction/search/180/Silver+and+Bronze?q=&p=1&lpp=40>
[Accessed 01 June 2016].
- Barford, P. M., 2001. The Early Slavs: Culture and Society in Early Medieval Eastern Europe. In: s.l.:Cornell University Press, pp. 89-90.
- Beanstalk, T. P., 2014. *Zalmoxianism (Romanian Paganism)*. [Online]
Available at: <https://paganmeltingpot.wordpress.com/2014/06/20/zalmoxianism-romanian-paganism/>
[Accessed 10 06 2016].

Coimbra, F., 2011. The astronomical origins of the sSwastika motif. *Proceedings of the International Colloquium -The intellectual and spiritual expressions of non-literate peoples*, pp. 78-90.

Coinproject.com, n.d. *Alfredo De La Fe*. [Online]
Available at: http://www.coinproject.com/search_city_result.php?city=Corinth®ion=CORINTHIA&type=1
[Accessed 13 06 2016].

Cross, L., 2013. *Looped square*. [Online]
Available at: https://en.wikipedia.org/wiki/Looped_square#/media/File:Saint_Johns_Arms_cheese_mould_Finnish_National_Museum.jpg
[Accessed 19 06 2016].

Encyclopaedia Britannica, 2016. *http://www.britannica.com/place*. [Online]
Available at: <http://www.britannica.com/place/Baltic-states#toc253373>

Florida Center for Instructional Technology., 2011. *Ordinary Intersecting Fret Band*. [Online]
Available at: http://etc.usf.edu/clipart/59600/59691/59691_greek_fret.htm
[Accessed 12 06 2016].

Gamm, N., 2012. *The peacock: A symbol of royalty*. [Online]
Available at: <http://www.hurriyetdailynews.com/the-peacock-a-symbol-of-royalty.aspx?pageID=238&nID=65241&NewsCatID=438>
[Accessed 2 june 2016].

Goodyear, W., 1891. *The grammar of the lotus, a new history of classic ornament as a development of Sun worship, with observations on the "Bronze culture" of prehistoric Europe, as derived from Egypt: based on the study of patterns*. Toronto: University of Toronto Libraries.

Harris, D. R. L., 2006. *Transpacific Project-Genetic Research*. [Online]
Available at: <http://www.transpacificproject.com/index.php/genetic-research/>
[Accessed 12 june 2016].

Haynes, G., 209. *Tree of Life, Mythical Archetype (Revelations from the Symbols of Ancient Troy)*. 1st ed. s.l.:Symbolon Press.

Imreh, A., 2011. *Old Europe*. [Online]
Available at: <https://vieilleurope.wordpress.com/2011/05/27/restart-of-europe-after-last-ice-age/>
[Accessed 10 june 2016].

Jones, C., 2013. *British Museum Online Research Catalogues: Naukratis: Greeks in Egypt*. [Online]
Available at: <http://ancientworldonline.blogspot.in/2013/04/british-museum-online-research.html>
[Accessed 8 06 2016].

Klein, M., 2015. *Ukraine's volunteer battalions – advantages and challenges*, s.l.: Swedish Defence Research Agency.

Lahanas, M., n.d. *Town (or Urban) Planning in ancient Greece*. [Online]
Available at: <http://www.hellenicaworld.com/Greece/Technology/en/CityPlan.html>
[Accessed 13 june 2016].

Lahanas, M., n.d. *Town (or Urban) Planning in ancient Greece*. [Online]
Available at: <http://www.hellenicaworld.com/Greece/Technology/en/CityPlan.html>
[Accessed 12 06 2016].

neopaganism, E., 2015/5/2. *Wikimedia Foundation*. [Online]
Available at: https://en.wikipedia.org/wiki/Estonian_neopaganism#/media/File:Jumiois_symbol_of_Taaraism-Maausk.svg
[Accessed 19 6 2016].

neopaganism, E., 2015/5/2. *Wikipedia*. [Online]
Available at: https://en.wikipedia.org/wiki/Estonian_neopaganism#/media/File:Jumiois_symbol_of_Taaraism-Maausk.svg
[Accessed 19 June 2016].

Nicholas, n.d. [Online]
Available at: <http://www.ufo-contact.com/ancient-Swastika>
[Accessed 9 06 2016].

ProSwastika, 2012. *www.proSwastika.org*. [Online]
Available at: <http://www.proSwastika.org/comment.php?comment.news.165>
[Accessed 01 June 2016].

ProSwastika, 2012. *www.proSwastika.org*. [Online]
Available at: <http://www.proSwastika.org/news.php?extend.79.6>
[Accessed 01 June 2016].

ProSwastika, 2012. *www.proSwastika.org*. [Online]
Available at: <http://www.proSwastika.org/news.php?extend.24.3>
[Accessed 9 June 2016].

R., N.-C. G. A., 2008. Consolidation, Rebuilding and Strengthening of St. Clement's Church, St. Panteleymon, Plaoshnik, Ohrid. *Engineering Structures*, 8(30), pp. 2185-2193.

Roxin, D., 2015. *the amazing similarities between the culture and the Chinese culture Yangshao CUCUTENI*. [Online]
[Accessed 11 06 2016].

Steve, 2013. *www.weburbanist.com*. [Online]

Available at: <http://weburbanist.com/2013/01/13/crossed-up-9-twisted-Swastika-shaped-buildings/>

[Accessed 9 June 2016].

The British Museum, n.d. *Collection online*. [Online]

Available at: http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=458953&partId=1&matcult=15785&page=1

[Accessed 9 06 2016].

The Pagan Beanstalk, 2014. *Zalmoxianism (Romanian Paganism)*. [Online]

Available at: <https://paganmeltingpot.wordpress.com/2014/06/20/zalmoxianism-romanian-paganism/>

[Accessed 10 06 2016].

the ProSwastika, 2012. *Greece: Helmet*. [Online]

Available at: <http://www.proswastika.org/news.php?extend.123.6>

[Accessed 11 06 2016].

The Telegraph, n.d. *Swastika symbols seen in unusual places around the world*. [Online]

Available at: <http://www.telegraph.co.uk/news/picturegalleries/howaboutthat/11118977/Swastika-symbols-seen-in-unusual-places-around-the-world-in-pictures.html?frame=3049943>

[Accessed 11 06 2016].

Twiggietruth, 2015. *www.twiggietruth.wordpress.com*. [Online]

Available at: <https://twiggietruth.wordpress.com/2015/10/12/history-and-meaning-of-slavic-Swastikakolovrat/>

[Accessed 06 June 2016].

Wilson, T., 1984. *The Swastika, The Earliest Known Symbol, and Its Migrations; with Observations on the Migration of Certain Industries in Prehistoric times*. Report of National Museum, pp. 763-997.

WordPress.com, 2014. *Knowledge of Self*. [Online]

Available at: <https://selfuni.wordpress.com/2014/12/11/afrikan-Swastika/>

[Accessed 9 June 2016].

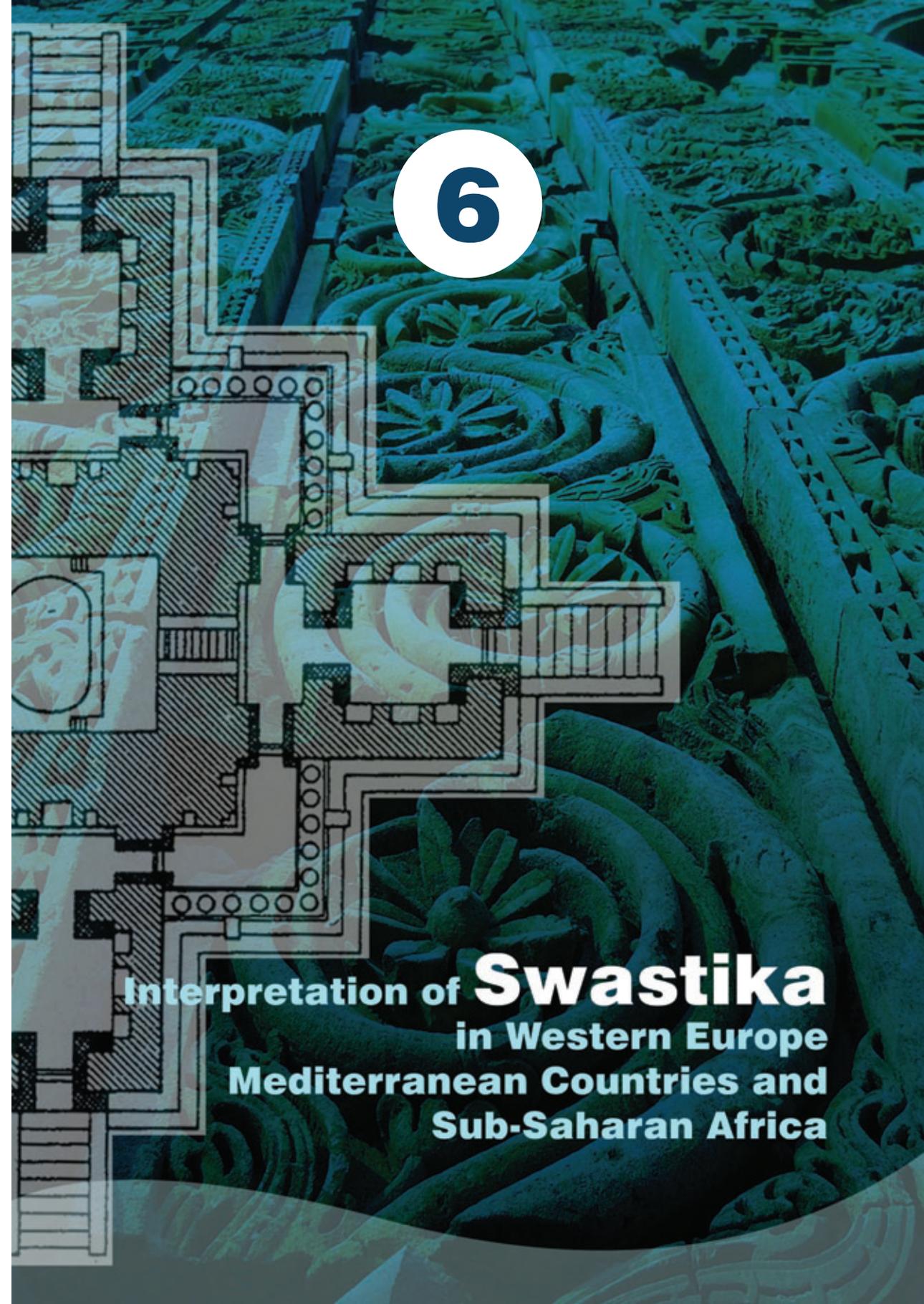
Anon., n.d. [Online]

Available at: https://en.wikipedia.org/wiki/Looped_square#/media/File:Saint_Johns_Arms_cheese_mould_Finnish_National_Museum.jpg

Anon., n.d. *www.b2b-strategy.ro*. [Online]

Available at: <http://b2b-strategy.ro/2015/04/wu-kingdom/>

[Accessed 1 June 2016].



Interpretation of Swastika in Western Europe Mediterranean Countries and Sub-Saharan Africa



As a development of the created universe, it is associated with those major creating or redeeming personages mentioned above; as a development of a human reality, it may well express the furthest development of secular power, which would explain why the swastika was an attribute of Charlemagne and of Hitler. Here again we must pause to take into account the direction in which the swastika rotates. If this is in the path of the Sun, cosmic and linked to the transcendent, then it is Charlemagne's; if it is in the opposite direction, widdershins, attempting to set what is infinite and holy within the finite and the profane, then it is Hitler's swastika.



The Penguin Dictionary
of Symbols

Interpretation of Swastika in Western Europe, Mediterranean Countries and Sub-Saharan Africa

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Introduction

The locational extent of the study area is spread over the northern to the southern hemispheres including Western Europe and Western Africa. Hence, the study has been done on the basis of the regional demarcations and not on the basis of present day political boundaries.

The geographical extent of the study area has been illustrated in Table 1 along with its regional background and ethnographic & language group demarcations as well as the most primitive settlements in those regions. The study area includes various distinctive physiographic divisions as well as ethnic group clusters which have worked as the criteria of the study.

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Figure 1: Location Map demarcating the present day political boundaries of the study area

Table 1: Regional Location & Ethnographic Characteristics of Study Area

Regional Division	Political boundaries	Language groups	Inhabitation Timeline
Scandinavian countries	Norway	North Germanic	Gothic Tribe, 4th Century BCE
	Sweden		
	Denmark		
Celtic Nations	Ireland	Irish (Ireland), Scottish Gaelic (Scotland), North-Germanic languages	Urnfield culture, 12th Century BCE
	UK		
Prussian Empire	Germany	West Germanic Low Franconian Anglo-Frisian	Corded Ware culture, 3,500–2,500 BCE
	Poland		
	Austria		
	Czech Republic		
Yugoslavia (Balkan Peninsula)	Czech Republic	Albanian	Serb Tribes, 6th – 7th Century CE
	Slovakia		
	Slovakia		
	Slovenia		
	Bosnia & Herzegovina		
	Serbia		
	Montenegro		
Croatia			

Regional Division	Political boundaries	Language groups	Inhabitation Timeline
Low/ Benelux countries	Luxemburg	West Germanic, Low German/ Low Saxon, Low Franconian, Anglo-Frisian	Starčevo culture 6000-4500 BCE
	Netherlands		
	Belgium		
Alpine Countries	France	Basque, Albanian West Germanic, Low Franconian, Greek languages	Terramare culture, 12th Century BCE
	Switzerland		
	Italy		
Iberian peninsula	Spain	Basque Roman Languages	Cardium culture, 5000 BCE
	Portugal		
West African/ Maghreb Region	Morocco	Afro-asiatic language	Berbers Tribes, 10000 BCE
	Tunisia		
	Algeria		
African coast	Mali	Niger–Congo (Bantu and non-Bantu)	No Clear Proof Exists
	Ivory Coast		
Sub- Saharan Countries	Ghana	Niger-Congo (Bantu and non-Bantu), Nilo-Saharan languages, Niger–Congo language	Sao, Kanem, Bornu, Shilluk, Baguirmi, and Wadai, 1000 BCE
	Niger		
	Nigeria		
	Togo		

Timeline and Approach to the study

The framework of the study is broadly based on two basic analytical aspects. The first being systematically listing the evidences in the form of matrices with respect to the regions in which they were found in. The second aspect is further correlating these evidences to scientific and heritage parameters. The components of the research based on these analytical aspects have been discussed in the following sections.

Components of research

Broadly there are four components of the research. These components are as follows -

- Region-wise analysis through evidences of Swastika found vs. historic timeline.
- Further collation of these evidences into matrices with scientific and heritage parameters for understanding the relation of these evidences with science and heritage.
- Parameters supporting the migration and evolution of the Swastika pattern over time.
- Interpretation and change of perception regarding Swastika over spatio-temporal settings.

Conceptual framework

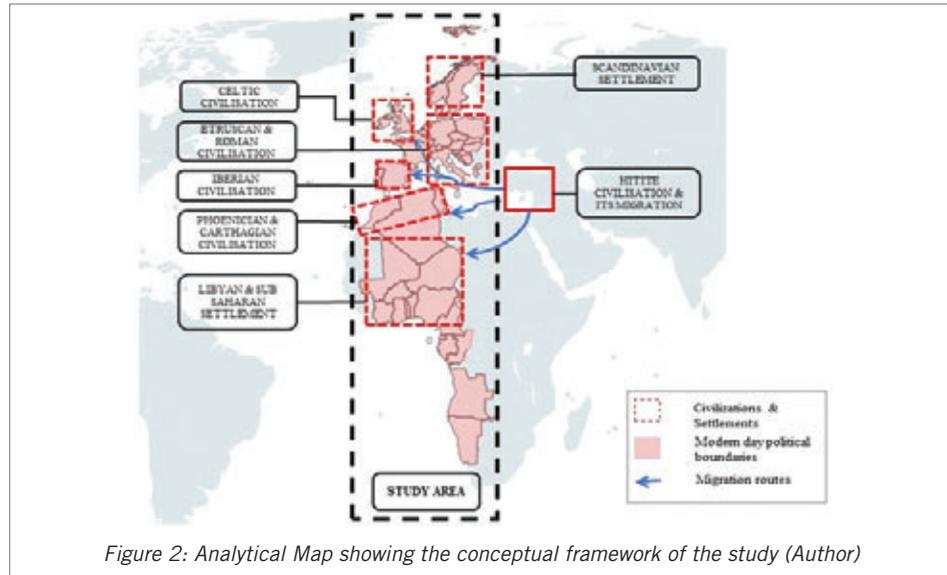


Figure 2: Analytical Map showing the conceptual framework of the study (Author)

Figure 2 shows the conceptual map of the study area showing the different settlements and civilizations in the study area and the migration routes of the most primitive civilisation of the Hittites. It is considered that most of the civilizations around the Mediterranean region before the Roman Empire were a resultant of the Hittite migration. The conceptual framework of the study is enumerated below:

- Migration patterns of Hittites from Asia Minor and their further settlements in the Mediterranean coasts of Africa and Europe siting genealogical evidences.
- The linkages between the Phoenicians, Carthagians, Iberian and Celtic Nations through trade and commerce.
- Jewish, Pagan and Christian beliefs regarding Swastika (fylfot) and their regional distribution over the historic timelines.
- Subsequent region wise interpretation of Swastika symbol
- Change of trend: Abuse of the Swastika by Nazis since 1930s
- People's perception in the modern era due to the atrocities of the World War II.
- Revival initiatives of the Swastika and present research trends.

Analysis & Evaluation

Evidences & their Explanation

Migration and Evolution of the Civilizations of Western Europe and Africa

Since ethnicity does not depend solely on the language group or spoken language, hence the genetic evidences are necessary to prove ancestry. Modern study of genealogy supports the

evidences of migration and active trade relations to demonstrate the concepts of evolution of the Western European and Mediterranean civilizations of the past. These civilizations were the cradle of modern Europe and Africa (Wilson, 1896).

It is believed that the Hittites were the most primitive. The Hittites were a group of sea faring people, setting up colonies in the Mediterranean coast very early and trading in salt towards the beginning of the use of the commodity (Rollig, 1992). The highly developed Hittite civilizations, at the height of its glory, setup several colonies in the Mediterranean region while mingling with the existing settlements with trade and commerce and other alliances.

One such settlement was that of the Phoenicians. The history of the Phoenicians comes to us from their rivals, the Romans, as they left very little behind with which to point to their origins. But in recent times the analysis of the DNA of the Phoenicians are of much help to trace their past (Moretti & Cela, 2014).

Carthage was one of the many self-sustaining of the Phoenician settlements in the western Mediterranean coast of North Africa. It was founded in the 9th century BCE in what is now Tunisia. It developed into a significant trading empire throughout the Mediterranean, a wealthy civilization. After a series Punic Wars, with the-then emerging power of the Romans, finally destroyed Carthage in 146 BCE. A Roman Carthage was established on the ruins of the first. Ancient sources concur that Carthage had become perhaps the wealthiest city in the world via its trade and commerce. The discovery of Carthage is dated between 1215 and 1234 BCE according to various ancient sources. Modern sources have a belief that the city was founded somewhere between 846 and 813 BCE (Anon., 2016).

According to tradition, the city was founded by Queen Dido. The initial city covered the area around a hill called Byrsa, paid an annual tribute to the nearby Libyan tribes, and may have been ruled by a governor from Tyre, whom the Greeks identified as "King". Utica, the then leading Phoenician city in Africa, aided the early settlements in her dealings. The date from which Carthage can be counted as an independent power cannot exactly be determined, and probably

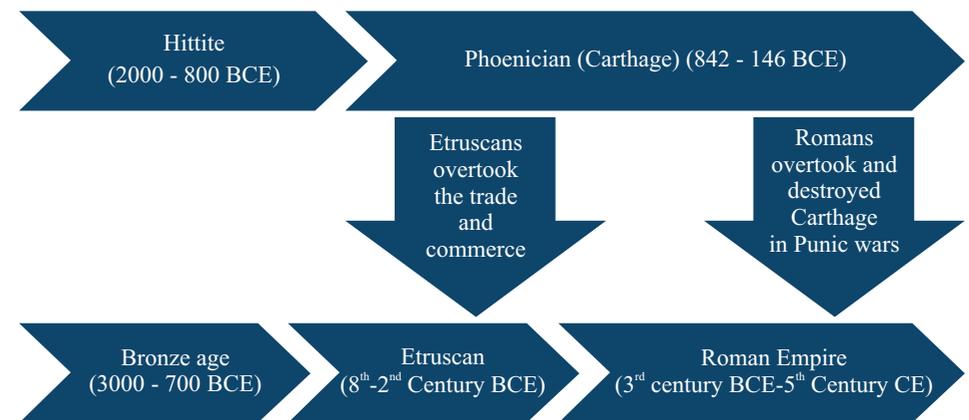
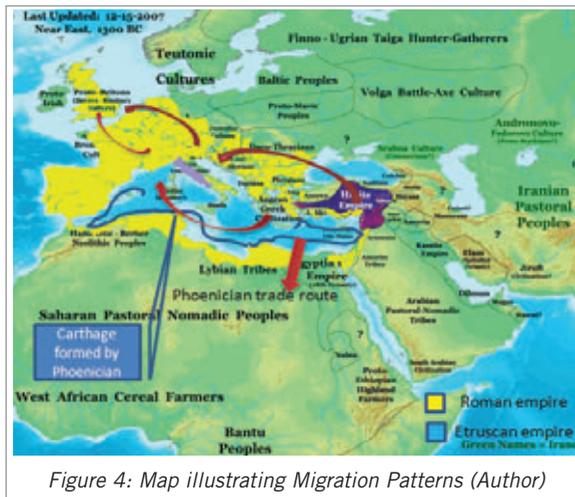


Figure 3: Flowchart Showing Migration And Succession of Settlements (Author)

nothing distinguished Carthage from the other Phoenician colonies in Africa during 800 - 700 BCE. When the Phoenician's trade monopoly, along with the political and economic independence was challenged by Etruscans and Greeks in the West and by their successive Empires in the East, Phoenician influence from the mainland decreased in the West and Punic Carthage ultimately emerged as the head of the commercial Empire.

Figure 3 represents the succession of the settlements beginning from the Hittite Civilisation till the rise of the Roman Empire.



and into the Roman and Christian periods. Tombs with number of about 300, containing swastika, were found, and were superseded by the Etruscan tombs. They contained the weapons, tools, and ornaments peculiar to the Bronze Age—swords, hatchets, pins, fibula, bronze and pottery vases, etc.

Figure 4 shows a map corresponding to the migration patterns of the early European civilisations upto the Roman Empire. This map illustrates the movement of the swastika pattern along with the migration of the settlements.

The detailed discussions on migration and evolution of Swastika in these have been done on a spatio-temporal scale on a regional basis. These are discussed in the following section.

Spatio-Temporal Study of the evolution and use of Swastika

Region-wise explanation of evidences and subsequent articulation into Scientific and Heritage parameters are discussed in the following sections.

Scandinavian Region

The Scandinavian regions had been under the prominence of swastika from the Neolithic Ages. The evidences of swastika had been ensued in the early rock paintings and carvings along with the Sun symbol delineating the four seasons and the tropical year, and had magnificent impact on the

Etruscans came from the area which is now called Turkey and their nearest genetic relatives are Tuscans and Umbrians. It was this Etruscan civilization that gave rise to the later-dated Roman Empire. The Etruscans were descendants of the Bronze Age people and different stages of culture among the Etruscans can be determined from their tombs, modes of burial, pottery, etc. The Swastika appears to have been employed in all the epochs or stages. It was undoubtedly used during the Bronze Age, and in Italy it continued throughout the Etruscan

and into the Roman and Christian periods. Tombs with number of about 300, containing swastika, were found, and were superseded by the Etruscan tombs. They contained the weapons, tools, and ornaments peculiar to the Bronze Age—swords, hatchets, pins, fibula, bronze and pottery vases, etc.

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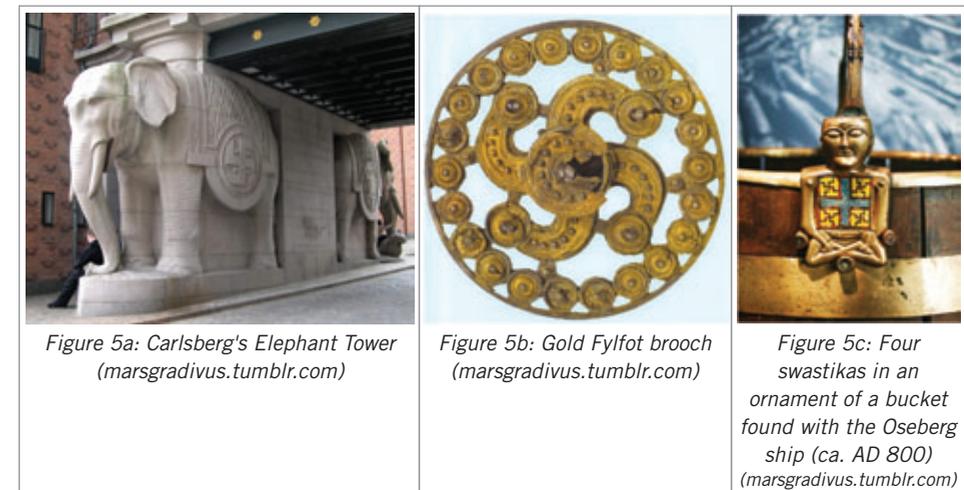
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Scandinavian Region

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acumen of the people around that time. Artefacts such as potteries, swords, combs, metal buckets, axes, metal brooches and braccatte and much of the regular commodities were seen to encompass the symbol of fylfot. These can be dated back to Bronze Age of the early Eurasian Regions and spring up by the early Christian Civilisation (0 – 476 CE) and their continuous persistence till the Dark/Middle Ages (till 1399 CE). The symbol reincarnated in the Modern reign on the pillars of Carlsberg's Elephant Tower, Denmark depicting the positive values such as good luck, prosperity, goodness, strength, vigour and faithfulness. Coins and currency did not have much influence in these regions proving the existence of barter system.

Figure 5a and 5b are examples of the archaeological evidences found from the Scandinavian Nations. Figure 5a depicts the Modern Age artefact build in Denmark around 1901AD whereas Figure 5b represents a Gold Fylfot Brooch discovered in the 5th Century CE in the ancient regions of Denmark.



Prussian Empire

The association of Prussian countries with Swastika is timed from the reign of Pre-Christian Period (starting from 600 BCE). Several evidences have been established with the ancient Prussian region. Some of them can be traced as the fylfot found on the Germanic Spear dating back to 1st Century CE. Various other artefacts can be related to the Early Christian Period (0 – 476 CE) such as ritual bowl with fylfot marks as carving; funeral urn, and gold brackette with a similar fylfot being carved perfectly in the same fashion. Also, it can be traced in the dark (middle) ages of Europe and in the Renaissance Period, such as swastika being carved on swords, earthen pots, and on some metal brooches with serpents resembling the original symbol of swastika. It was interpreted as fire and sun symbol by the native Germanic people. With a voluminous influence in the Prussian region, swastika did gain much popularity in the Renaissance period according to the symbol being embedded on the walls of many buildings in

the Germanic areas. In the modern era of civilization enhancement swastika had gain much popularity which motivated the Leader of Nazis, Adolf Hitler to adopt it as a sign of purity of the Nazi race and also as their National Symbol.

Figure 6a and 6b illustrate the architectural elements from the reign of Prussian Empire. Figure 6a depicts the monumental artefact named “Ara Pacis Augustae” also called "Tellus" panel which is dated back to 1st Century BCE from the reign of Greco – Roman art and architecture whereas Figure 6b depicts **Fylfot Bracatte depicting Frigga & fylfot** dated back to 6th Century CE, Germany.

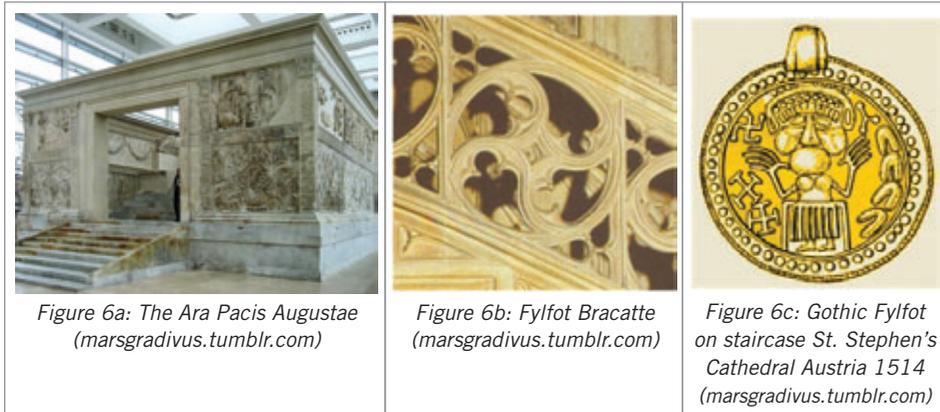


Figure 6a: The Ara Pacis Augustae (marsgradivus.tumblr.com)

Figure 6b: Fylfot Bracatte (marsgradivus.tumblr.com)

Figure 6c: Gothic Fylfot on staircase St. Stephen's Cathedral Austria 1514 (marsgradivus.tumblr.com)

Alpine Countries

Alpine countries have been fumbled with many invasions and wars making it one of the most influential regions of the European Nation. The history of swastika can be traced back to the earliest of the timelines of Ancient Europe. Swastika pattern had not been discovered in these early periods but the symbols such as Triskelion of Sicily of the Minoan period, ornamental pins with sun wheels had been found resembling swastika and its dominion. These patterns were meant to represent the sun wheel and can be related to the four equal lines pointing from the centre to the spirits of the north, east, south, and west. Alternately some had believe that it



Figure 7a: Triskelion (marsgradivus.tumblr.com)

Figure 7b: Etruscan pendant (marsgradivus.tumblr.com)

Figure 7c: Interlocking swastikas (marsgradivus.tumblr.com)

illustrates the basic elements of life such as earth, water, air (or wind), and fire. Swastika can be believed to be derived from these resembling figures after a great unification progress. Bronze Age came up with swastika on gold pendants which are remarks to its earliest discoveries. Many patterns can be traced in the Pre–Christian Periods and in the Dark/Middle Ages transpiring on potteries, brooches, and even as architectural elements on the walls of Church symbolising its holiness and positivity in that era. Swastika had remarkably been traced till the Modern Age (1700 – 1939 CE) in Alpine region after which its existence has perished due to its inconspicuous image drawn out by the Nazis.

Figure 7a, 7b and 7c illustrate the architectural elements from the timeline of Alpine Countries. Figure 7a depicts the monumental Triskelion of Sicily of the Minoan period (archaeological museum of Agrigento). Figure 7b depicts Etruscan pendant with swastika symbols from Bolsena, Italy (700-650 BCE). Figure 7c depicts the early Interlocking swastikas patterns on the floor of cathedral of Amiens, France.

Celtic Nations

According to the researches done at the Oxford University, Celtic Nations have come up after 5000 BCE with majority of the Celtic Tribes migrating to these regions from Iberian Peninsula. Their bonding with swastika exploded during the Bronze Age when the regional people found out a resembling pattern been carved on the stones of Ilkley Moor. After this period several evidences protruded in the Pre–Christian and early Christian Periods with swastika being carved on metal shields, cinerary and funeral urns, gravestones, and emanate as an emblem of close association with the solar and celestial powers. During the Dark/Middle Ages, the symbol can be imitated on the helmets of warriors, metal mounts, swords, brooches and even on the coins depicting its power to control the flow of commodities. Several motifs have been found on the architectural bodies which represent its hovering influence on the Celtic inhabitants and thus altering their introspective views and perception for swastika according to time–span.



Figure 8a: Bronze Age stone carvings (marsgradivus.tumblr.com)

Figure 8b: Anglo-Saxon cinerary urn (marsgradivus.tumblr.com)

Figure 8c: Ogham stone found in English, Co Kerry, Ireland (marsgradivus.tumblr.com)

Figures 8a and 8b are examples of the archaeological evidences found from the Celtic Nations. Figure 8a is a stone carving of the symbol from the Neolithic or Bronze Age found in Ilkey Moor, England. Figure 8b shows an urn from the 5th or 6th century CE, found at North Elmham, Norfolk.

Iberian Peninsula

Iberian Peninsula is known to cast a human civilization from the 5th millennium BCE. It was discovered by the Greeks when voyaging in the West. Due to this, acquaintance between the Roman and the Iberian culture evolved thus each influencing the other's socio-ideological background. Relationship of Iberian culture with swastika under the influence of Romans can be traced back to the Pre-Christian Era when carvings of swastika were first discovered on the stones from the period of Castro culture. Evidences of Triskele also ascertained its significant influence as an architectural element during the Iron Age reign. Most of the testaments were found on the architectonic basis, and carvings can be spotted on the mosaic floors of the early Roman Civilisation. A riveting thing to apprehend was that coins and currency did had importance in the kingdoms from the Dark/Middle Ages till the Renaissance Period and swastika can be spotted on these artefacts along with the depiction of King's appearance.



Figure 9a: Roman mosaic (maajournal.com)

Figure 9b: carvings from Castro Santan Trega Galicia (maajournal.com)

Figure 9c: Iron Age Castro culture triskele, Airavella, Allariz, Galicia (maajournal.com)

Figures 9a and 9b are examples of the archaeological evidences found from the Iberian Peninsula. Figure 9a is an Ancient Roman mosaic of La Olmeda, Spain and Figure 9b illustrates carvings from Castro Santan Trega Galicia.

Low/Benelux Countries

These countries had different culture from the early Romans and Celts, and Swastika had influenced these countries only after the Renaissance Period when the patterns can be traced back on the pillars of court, as a design motif on quilts and mostly as an architectural element found on various buildings of the Dark/Middle Ages and Modern Era. Probably, swastika did not mean to represent some deity or sun or seasonal cycle in these regions, rather was merely an exertion as a design parameter.

Figures 10a, 10b and 10c are examples of the archaeological evidences found in Low/Benelux Countries. Figure 10a represents a Modern Age building embedded with swastika at Kapucijnenvoer 26 in Leuven, dated 1898 AD. Figure 10b shows carvings of swastika on the pillars of Law Courts of Brussels built between 1866 and 1883 AD. Figure 10c shows the Church of Christ, Nesebar dated back to 13th or early 14th Century CE with swastika pattern embossed over the stripes of building.



Figure 10a: Kapucijnenvoer (www.proswastika.org)

Figure 10b: Law Courts (www.proswastika.org)

Figure 10c: The Church of Christ (www.proswastika.org)

Yugoslavian Region

Back from the ancient chronology, this region was one of the territories of the Romans and Greeks and has been under the spotlight from the very early occasions. Its relation with swastika can be lined to the early Neolithic Ages, and artefacts such as potteries belonging to the Sopot Culture can be spotted to have carvings of swastika symbol representing the early existence of swastika as a representative symbol in the ideology of those early civilisations. Swastika had undergone many transformations in this region and finally was impersonated as an architectural element during the early Christian Period and the same feature followed in Dark/Middle Ages as the same similitude.



Figure 11a: Neolithic pottery from Bapska (Croatia) belonging to the Sopot Culture, 5th millennium BCE (maajournal.com)

Figure 11b: Swastika on a Roman mosaic in Veli Brijun, Croatia (wikipedia.org/wiki/Swastika)

Figure 11c: Spiral from Voynich (left) and Cross with Kolovrat, Visoki Dečani monastery, XIV century (1327-1330) (maajournal.com)

Figures 11a and 11b are examples of the archaeological evidences found from the Yugoslavian Regions. Figure 11a represents a Neolithic pottery from Bapska (Croatia) dated back to 5th millennium BCE. Figure 11b shows carvings of swastika on a Roman mosaic in Veli Brijun, Croatia.

Some of these were found to be established on the metal brooches and others on gravestones depicting similarity with Sun Spiral. Modern Ages had been influenced by representing the holy symbol purely as an emblem and a design figure but the uttermost significance had lost along with devaluing the true meaning of this auspicious symbol.

African Region

From the Volta to Congo to the river Nile, from scarification of gold weights to hieroglyphics, the swastika has been throughout Africa for long time. Swastika was found in Sub - African region being embedded on gold dust weight which belonged to Ashanti people, also called Akans. The Akan people migrated from North through Egypt and with the discovery of gold mines in their native places and established their civilisation and became rich and manufactured coins on which was spotted the swastika symbol. The Akan occupied a large part of West Africa including parts of Ghana and the Ivory Coast and included many sub- ethnic groups such as the Baule and the Asante. The swastika was a symbol of currency, expressing power, money, wealth and integrity. The swastika is also one of the Akan people's famous Adinkra symbols and used eloquently on many artefacts they manufactured. The Asante people did weave the swastika symbol onto their clothes as a representation of power and auspiciousness.

Kinte cloth symbol, also called Apremo-Canon is a symbol of resistance against foreign domination, and superior military strategy which represents the superior military strategy of Akan nations. During 15th to 19th century, Akan people residing in Ghana coated ivories and used swastika on the coins and clothes. They migrated from North; went through Egypt and settled in

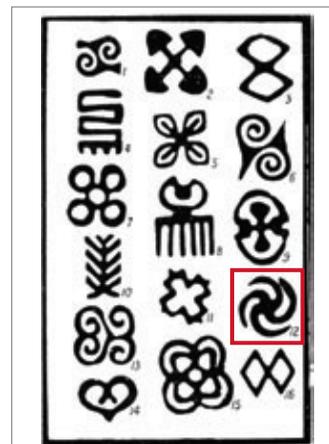


Figure 12a: Adinkras (selfuni.wordpress.com)



Figure 12b: Adinkras Clothes (selfuni.wordpress.com)

Nubia (Sudan). Around 500CE, due to the pressure exerted on Nubia by Axumite kingdom of Ethiopia, Nubia was shattered, and the Akans moved to the West and established small trading kingdoms which later grew and became an Empire called Ghana around 750 CE. The Empire lasted from 750CE to 1200CE and collapsed as a result of the introduction of Islam in the Western Sudan. The kingdom of Bonoman (or Brong-Ahafo) was established as early as the 12th century, and between the 12th and 13th centuries, a gold boom in the Akan area brought wealth to numerous Akans.

Figures 12a and 12b are examples of the archaeological evidences found from the African Regions. Figure 12a represents ancient Adinkras symbols and Figure 12b shows carvings of swastika on the Adinkras tribe Clothes.

Table 2 explains the scientific and heritage parameters used after the spatio-temporal analysis and expressed in terms of matrices for each region.

Table 2: The Scientific and Heritage Parameters used for Analysis of Evidences

Scientific Parameters	S1	Cosmic Cycles
	S2	Seasonal Cycles
	S3	Life Cycle
	S4	Psychological/Perceptive
	S5	Natural Force
Heritage Parameters	H1	Rituals
	H2	Symbols
	H3	Art& Cultural
	H4	Trade/ Social relations

These matrices give out a very deep sense of stating and concluding the study to the sharp edge of understanding the patterns of swastika and its influence in the European and African regions.

According to the major findings, the matrices come to a closure of revealing the fact that swastika had always been related to the psychological intimacy and the thought processes of the early people, and their believe systems varied accordingly eventually pouring up a variety of meanings of swastika and its relation with the natives and their territories. Swastika had transformed itself into a broader perception and the true meaning is hidden in these miniatures on which is carved the mystical symbol of swastika. Cycles of life and seasons and cosmic evaluations have always played a significant role in describing swastika. Relations with deities and natural forces are profoundly discovered while going through the deep study of this enigmatic symbol. This symbol had influenced the art and tradition through centuries and is transforming it continuously whether history says it or not.

Table 3: Region- wise matrices showing the relationship of the Scientific & Heritage Parameters

Regions		H1	H2	H3	H4
Alpine countries	S1				
	S2				
	S3				
	S4				
	S5				
Celtic Nations	S1				
	S2				
	S3				
	S4				
	S5				
Iberian Peninsula	S1				
	S2				
	S3				
	S4				
	S5				
Prussian Empire	S1				
	S2				
	S3				
	S4				
	S5				
Low Countries	S1				
	S2				
	S3				
	S4				
	S5				
Scandinavian Countries	S1				
	S2				
	S3				
	S4				
	S5				
Yugoslavian Countries	S1				
	S2				
	S3				
	S4				
	S5				
African Countries	S1				
	S2				
	S3				
	S4				
	S5				

Research findings

Table 3 is the combination of the matrices developed according to the relationship between the scientific and the heritage parameters of the evidences found relating to the Swastika in the respective regions. These matrices have been developed to find out the implication of Swastika in the socio-cultural or ethno-cultural spheres of the countries or regions as a whole. The key findings from these matrices differ from region to region, but one common thread that joins all the regions is that, Swastika has a very strong relationship with the lives or the life cycle of human beings. Hence, these life cycle events and the representation of the Swastika are very strongly related and integrated to the culture of the communities living in these areas. One more remarkable finding is that the Western European countries have had a strong psychological perception of the Swastika beyond the 1930s till date. This is evident in the matrices of all the European regions.

Conclusions

It is an extensively accepted fact that Swastika from its early ancestry had astonished the world by its omnipotent endurance, overtaking the four directions and mingled up the humongous research minds of the macrocosm to dive in the fathomage of ocean of thoughts and riddle out the perplexity of the original sense and emblemization of this auspicious symbol. Negotiating with the Eurasian continent and some African regions, swastika proves out to be majorly bonded in representing its independence of use throughout these regions without any obstruction and pronouncing itself a magnificent figure of representing something which is more than just regional interpretations. These interpretations do vary from a region to other but the simple perspective that could be dug out of this study concludes that swastika had remained eternal throughout the past thousands of years and will continue to sustain its identity for the other thousands of years of human civilization. The sign has a deep spiritual meaning of “permanent victory” supporting the complete abundance of exigency and freedom which persist in the core of a human according to the word's origin from the Sanskrit texts, but many other texts express its meaning as a linkage between the Heavens and the Earth.

The primordial civilisations, migration patterns and discovery of swastika and similar symbols helps to conclude that swastika had some profound impression on the minds and hearts of these early people which led to its further protruding and emergence in the upcoming societies which persisted through all these years ever after many life-draining wars and discriminations. The perception for the expression of swastika changed from one time period to other, from one civilisation to other thus pouring out the fact that the rituals and holy ceremonies were all involved in the transformation cycle of changing the believe systems of the people as the time proceeds. Association of swastika with life and death had been one of the most influential discoveries found in the regions of Europe and Africa and its association with Sun God have a profound impact on the research works. Much more discoveries and researches are required to bring this study to a final mainstream conclusion which comprehensively relinquish out the true meaning of swastika.

Scope for further research

This research can be taken a few steps further by studying in details, the migration routes and more supporting evidences for establishing an elaborate experimental set-up and analytical parameters. The probable approaches may be; with respect to carbon dating or GIS mapping for tracing of more archaeological evidences historical facts. Although after the end of the World War II, people started to avoid the swastika and several countries banned its use, but there have been recent endeavours for the revival of this symbol's auspices. Hence, it is the moral duty of the researchers to devise new methods to spread the awareness among the world citizens regarding the glorious historical past and the heritage values that passed through generations and provide for a sustainable future for the Swastika.

Appendix

Notes for further reference

Urnfield culture – The Urnfield culture (c. 1300 BCE – 750 BCE) was a late Bronze Age culture of central Europe. The name comes from the custom of cremating the dead and placing their ashes in urns which were then buried in fields. The Urnfield culture followed the Tumulus culture and was succeeded by the Hallstatt culture. Linguistic evidence and continuity with the following Hallstatt culture suggests that the people of this area spoke an early form of Celtic, perhaps originally proto-Celtic.

Corded Ware culture – The Corded Ware culture across Neolithic Europe comprises a broad European archaeological horizon between c. 3100–1900 BC, thus from the late Neolithic (Stone Age), through the Copper Age, and ending in the early Bronze Age. It started from Eastern Europe, as upper Volga River (—Fatyanovo Balanovo culture) and middle Dnieper (Middle Dnieper culture), and gradually extended to west Central Europe, to southern Scandinavia in the north and the Netherlands and Switzerland in the west.

Serb Tribes – Slavs settled in the Balkans in the 6th and 7th centuries, where they subsequently absorbed the local population (Illyrians, Thracians, Dacians, Romans, and Celts). First, they came under Bulgarian and then, after 900, under Byzantine rule. Later, Serbs created numerous small states, located in modern Bosnia and Herzegovina, Montenegro, and Serbia.

Starčevo culture – The Starčevo culture, sometimes included within a larger grouping known as the —StarčevoKőrösCris culture, is an archaeological culture of South eastern Europe, dating to the Neolithic period between c. 5500 and 4500 BCE (according to other source, between 6200 and 5200 BCE). The village of Starčevo, the type site, is located on the north bank of the Danube in Serbia (Vojvodina province), opposite Belgrade. It represents the earliest settled farming society in the area, although hunting and gathering still provided a significant portion of the inhabitants' diet.

Terramare culture – Terramare, Terramara, or Terremare is a technology complex mainly of the central Po valley, in Emilia-Romagna, Northern Italy, dating to the Middle and Late Bronze Age ca. 1700–1150 BC. It takes its name from the "black earth" residue of settlement mounds. Terramare is from terra marna, "marl-earth", where marl is a lacustrine deposit. It may be any

color but in agricultural lands it is most typically black, giving rise to the "black earth" identification of it. The population of the terramare sites is called the terramaricoli. The sites were excavated exhaustively in 1860–1910. These sites prior to the second half of the 19th century were commonly believed to have been used for Gallic and Roman sepulchral rites. They were called terramare and marnier by the farmers of the region, who mined the soil for fertilizer.

Cardium culture – Cardium Pottery Culture or Cardial Culture, or Impressed Ware Culture, which eventually extended from the Adriatic Sea to the Atlantic coasts of Portugal and south to Morocco. The earliest Impressed Ware sites, dating to 6400–6200 BC, are in Epirus and Corfu. Settlements then appear in Albania and Dalmatia on the eastern Adriatic coast dating to between 6100 and 5900 BC.

Berbers Tribes – The Berbers or Amazighs are an ethnic group indigenous to North Africa. They are distributed in an area stretching from the Atlantic Ocean to the Siwa Oasis in Egypt, and from the Mediterranean Sea to the Niger River. Historically, they spoke Berber languages, which together form the Berber branch of the Afro-Asiatic family. Since the Muslim conquest of North Africa in the seventh century, a large number of Berbers inhabiting the Maghreb have acquired different degrees of knowledge of varieties of the languages of North Africa.

Sao, Kanem, Bornu, Shilluk, Baguirmi, and Wadai - The Sao civilization flourished in Middle Africa from ca. the sixth century BC to as late as the sixteenth century AD. The Sao lived by the Chari River south of Lake Chad in territory that later became part of Cameroon and Chad. They are the earliest people to have left clear traces of their presence in the territory of modern Cameroon.

The Kanem Empire (c. 700–1376) was located in the present countries of Chad, Nigeria and Libya.[2] At its height it encompassed an area covering not only much of Chad, but also parts of southern Libya (Fezzan) and eastern Niger, north-eastern Nigeria and northern Cameroon. The history of the Empire is mainly known from the Royal Chronicle or Girgam discovered in 1851 by the German traveller Heinrich Barth.

The Bornu Empire (1380–1893) was a state of what is now north-eastern Nigeria from 1380 to 1893. It was a continuation of the great Kanem Empire founded centuries earlier by the Sayfawa Dynasty. In time it would become even larger than Kanem, incorporating areas that are today parts of Chad, Niger and Cameroon.

The Shilluk Kingdom was located along the banks of the White Nile River in modern South Sudan. Its capital and royal residence was in the town of Fashoda. According to their folk history and neighboring accounts, the kingdom was founded during the mid-fifteenth century CE by its first ruler, the demigod Nyikang.

The Sultanate or Kingdom of Bagirmi or Baghermi was a kingdom and Islamic sultanate southeast of Lake Chad in central Africa between 1522 and 1897.

The Wadai Empire or Sultanate (1635–1912) was a kingdom located to the east of Lake Chad in present-day Chad and in the Central African Republic. It emerged in the sixteenth century as an offshoot of the Sultanate of Darfur (in present-day Sudan) to the northeast of the Kingdom of Baguirmi.

References

- Anon., 2016. wikipedia.org. <https://en.wikipedia.org/wiki/Carthage> [Accessed 13 June 2016].
- Moretti, E. & Cela, E., 2014. A brief history of Mediterranean migrations. *Rivista Italiana di Economia Demografia e Statistica*, LXVIII(2).
- Rollig, W., 1992. Asia Minor as a Bridge Between East and West. The Role of the Phoenicians and Aramaeans in the Transfer of Culture.
- Wilson, T., 1896. The Swastika, the earliest known symbol, and its migrations. Washington: Government Printing Office.
- d'Alviella, Goblet. The Migration of Symbols, Chapter II. Internet Sacred Text Archive
- Rosenberg, Jennifer. 26 April 2013. History of Swastika
- 5 August 2015. "Tetraskelion Definition and Origin", Merriam-Webster Inc.
- Cody, Melissa. August 7, 2013. Don't You Dare Call Them Swastikas. ICTMN.com
- Freed, S. A. and R. S. January 1980, 68-75. "Origin of the Swastika". *Natural History*
- Assasi, Reza. 2013. Swastika: The Forgotten Constellation Representing the Chariot of Mithras, Ljubljana: Slovene Anthropological Society. ISSN 1408-032X. p418.
- Sagan, Carl. Ann Druyan. 1985. Comet, Ballantine Books. ISBN 0-345-41222-2. p. 496.
- <http://abob.libs.uga.edu/bobk/bronze.html>
- Hewitt, J.F.K. 1907. Primitive Traditional History: The Primitive History and Chronology of India, South-eastern and South-western Asia, Egypt, and Europe, and the Colonies. J. Parker and Company.
- Jain Campion, Mukti. 23 October 2014. How the world loved the swastika - until Hitler stole it. BBC
- A. Freed, Stanley. December 1981. Research Pitfalls as a Result of the Restoration of Museum Specimens, *Annals of the New York Academy of Sciences*, Volume 376, The Research Potential of Anthropological Museum Collections. p229–245.
- Dimitrova, Stefania. 8000 Year Ago Proto-Thracians Depicted the Evolution of the Divine
- M. Nadeau, Kathleen. 2010. *Encyclopaedia of Asian American Folklore and Folk life*. ABL-CLIO. ISBN 978-0-313-35066-5. p87.
- Dunham, Dows. 1965. A Collection of 'Pot-Marks' from Kush and Nubia. *Kush*. p13, 131-147
- Gimbutas, Marija. The Balts before the Dawn of History
- Lévi-Strauss, Claude. 1959. *Structural Anthropology*. p. 267
- Heller, Steven. The Swastika: Symbol beyond Redemption. Sky horse Publishing Inc. p31
- G. Ghazarian, Jacob. 2006. The Mediterranean legacy in early Celtic Christianity: A journey from Armenia to Ireland. Bennett & Bloom. p263, 171
- Mehr, K. B. 2002. M. Markow, Mormon Missionaries enter Eastern Europe. Brigham Young University Press. p399, 252
- Biers, W.R. 1996. *The Archaeology of Greece*. Ithaca/London: Cornell University Press, p. 130.
- Nagy, Lara; Vadnal, Jane. 1997-98. *Glossary Medieval Art and Architecture*, "Greek key or meander", University of Pittsburgh.
- J Powell, Martin. *Megalithic Sites in England - Photo Archive*.
- Margrethe, Queen; Poul Kjrum; Rikke Agnete Olsen. 1990. *Oldtidens Ansigt: Faces of the Past*, ISBN 978-87-7468-274-5. p148
- Davidson, H.R. Ellis. 1965. *Gods and Myths of Northern Europe*. ISBN 978-0-14-013627-2. p. 83
- Stipčević, Aleksandar. 1977. *The Illyrians: history and culture*. Noyes Press, ISBN 9780815550525. p182, 186.
- Clube, V.; Napier, B. 1982. *The Cosmic Serpent*. Universe Books
- Enthoven, R.E. 1924. *The Folklore of Bombay*. London: Oxford University Press. p40–45
- Gardner, N. 2006. *Multiple Meanings: The Swastika Symbol in Hidden Europe*, Berlin, ISSN 1860-6318. p35–37
- Cranbrook, B.C. 2001. *Swastika: Reclaiming the Innocence*, Canada: Flyfoot Press, ISBN 0-9688716-0-7.
- Whipple, Fred L. 1985. *The Mystery of Comets*, Washington, DC: Smithsonian Inst. Press, p163–167
- Polakoff, Claire. 1980. *Indigo: African Textiles and Dyeing Techniques*.
- Schliemann, H. 1875. *Troy and its remains*. London: Murray. p102, 119-20
- Boxer, Sarah. 29-06-2000. One of the World's Great Symbols Strives for a Comeback. *Think Tank - The New York Times*.
- Indyke, Dottie. April 4, 2005. The History of an Ancient Human Symbol. *The Wingspread Collector's Guide to Santa Fe, Taos and Albuquerque*, volume 15.
- B. Adams, Mark. 1990. *The Wellborn Science: Eugenics in Germany, France, Brazil*. Oxford University Press. p43.
- Sensen, Mark; Martins, António; Martin, Norman; Stelter, Ralf. December 29, 2004. Centred vs. Offset Disc and Swastika 1933-1945 (Germany), *Flags of the World*.
- "Centred vs. Offset Disc and Swastika 1933-1945 (Germany)". *Flagspot.net*. Retrieved 2 March 2010.
- McNern, Ethan. January 30, 2007. Swastika ban left out of EU's racism law. *The Scotsman*.

7

The Chronicles of

Swastika

One of the oldest symbols in existence is the Swastika, and it is one of the most widely spread, from furthest East Asia to Central America, via Mongolia, India and northern Europe. It was well-known to Celts; and Etruscans and to Ancient Greece, so that the so-called Greek-key pattern derives from it. Some writers have tried to take it back to Atlantis, which shows its great antiquity.

The Penguin Dictionary
of Symbols

The Chronicles of Swastika

Gaurab Das Mahapatra¹, Rahul Ranjan², Md. Saddam Hussain³, Shivani Singh⁴, Arpan Paul⁵

Introduction

*“Coincidence is God’s way of remaining anonymous”! . .
-Albert Einstein*

This research involves the balance between the scientific and heritage parameters. For ease of understanding and systematic evaluation of the secondary data thus gathered, the whole section is categorized into four major segments as mentioned below (d’Alviella, July 18, 2000):

- Introduction to Swastika- Reinterpreted : to understand the intent of study,
- Baseline Scenario : for preparing a base for further analysis,
- Comprehensive Discussions : regarding the geographic extents, and
- Deductions: hinting towards a probabilistic path.

The geographic extent that is being explored for seeking the traits of Swastika in this section is as shown below in Figure 1. The countries that are under the research scope can be further typecast into the following as shown in the map below shall be further studied and a comparative study shall be made with respect to various parameters as mentioned below:

- Domain of Categorization,
- Existence in specific time-line,
- Final parametric input basis,
- Scientific indicators for refinement, and
- Heritage indicators for refinement.

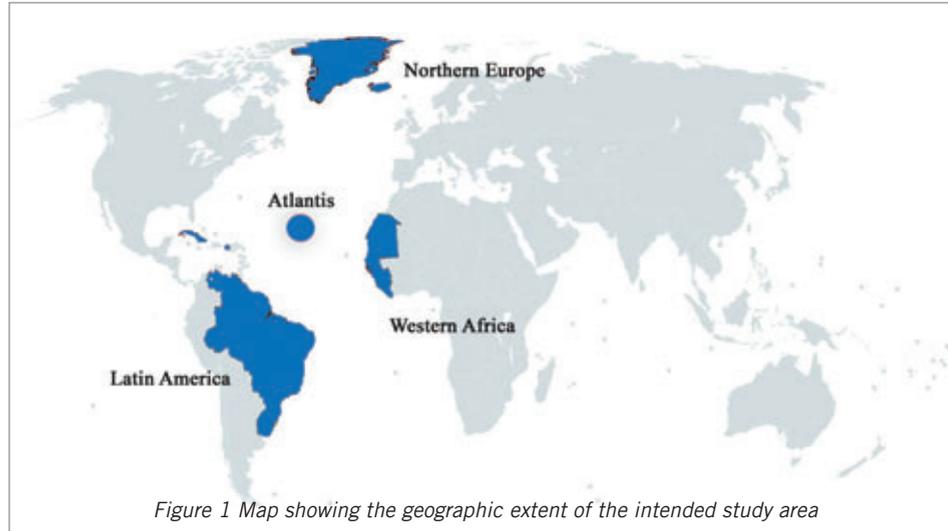
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“Logic only gives man what he needs.....Magic gives him what he wants”..
-Tom Robbins

Time-line and Approach

Introduction to the study area

“The true mystery of the world is the visible, not the invisible”..
-Oscar Wilde

The following Table 1 will elaborate on the area that is being dealt with along with the time period when the evidence was Swastika was located.

Table 1 Showing geographic extent and Swastika linkages

	Domain of Categorization					
	Countries	Continent	Climatic Zone	Sub Region (specified by UN)	Linkage of Swastika to ancient civilizations	
					Details	Time period
1	Greenland	Europe	Cold and Dry	Northern Europe	Engravings Post card stamp	1939-1945 C.E. (1) 1907(2)
2	Iceland				1. Logo of shipping company 2. Vegvisir compass 3. Thor’s Hammer	1914 C.E., 1950-1972 C.E. (1) 9th Century C.E. (2,3)

	Domain of Categorization					
	Countries	Continent	Climatic Zone	Sub Region (specified by UN)	Linkage of Swastika to ancient civilizations	
					Details	Time period
3	Western Sahara	Africa	Hot and Dry	Northern Africa	1. Akan Tribe gold weights 2. Adinkra Symbols 3. Ashanti Fabric design 4. Kinte cloth symbol	15th -19th century C.E.(1,2,3,4)
4	Mauritania					
5	Senegal					
6	The Gambia					
7	Guinea Bissau					
8	Guinea					
9	Sierra Leone					
10	Liberia					
11	Puerto Rico	South America	Tropical	Caribbean	Symbolically post world war II	Late 1960-early 1970 C.E.
12	Venezuela			South America	1. Terra cotta stamp 2. Piaroas body painting 3. Triangular shield 4. Pueblo Indian gourd dance rattle	18th century C.E. (1,3) 7000 B.C.E-pres-ent(2) 7th century C.E. (4)
13	Guyana					
14	French Guyana					
15	Suriname					
16	Brazil			Scrapped on a pump-kin bottle surface	Found in1939 C.E.	
17	Paraguay					
18	Uruguay					

The elaborate time-line through which the particular region has existed in the history of time can be referred to in Appendix 8.2. This will help in understanding the periodic linkage (Witzel, 2013). Major thrust of study among all the segments is upon the third segment. It is this segment where the spatial extents get related to all the other areas. There is also a priority chart as shown in Figure 2, evolved for initiating this study.



Figure 2 Priority Chart for Swastika traits

Conceptual framework involving Reinterpreted introduction to Swastika and preparation of a Baseline Scenario

“Those who don't believe in magic will never find it!?”

-Roald Dahl

As discussed in introduction, the conceptual framework shall involve:

- First segment (Introduction to Swastika- Reinterpreted),
- Second segment (Baseline Scenario) and,
- Introduction to the Third segment (Comprehensive Discussions).

The relation of Swastika and the people who had knowledge of it is threaded in a manner which involves beliefs from heritage (Alchemy and Swastika) and theories of science (Magnetic Strings and Swastika), as discussed below in two separate segments.

Alchemy and Swastika

Alchemy has existed in many forms and belief systems around the globe for ages.



Figure 3 20th Image of Splendour Solis

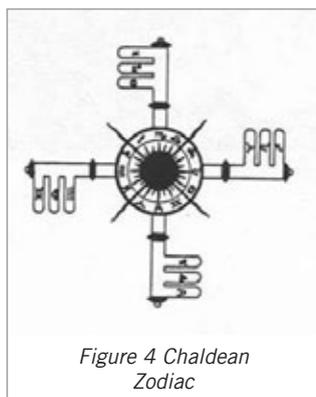


Figure 4 Chaldean Zodiac



Figure 5 Solomon's knot

In the colourful alchemical manuscript *Splendour Solis*⁴, twenty two images are present creating an interesting correspondence; out of which, the twentieth figure is of our concern, as shown in Figure 3. The elements in the hand of the child in the previous image have similarity to the Chaldean Zodiac *Wheel of four keys*⁵, as shown in Figure 4. This in turn has a visual similarity to the Swastika (editorial, 2011). Furthermore, the Great Work of Alchemy *Magnum Opus*⁶ has subsequently been used as a metaphor for symbolizing spiritual transformation in the *Hermetic Tradition*⁷. *Magnum Opus* has four stages based on colour (Lloyd, 2010):

- Nigredo (blackening or melanosis),
- Albedo (whitening or leucosis),

- Citrinitus (yellowing or xanthosis), and
- Rubedo (reddening or iosis).

This might resemble Swastika in a metaphorical pattern. There are also evidences of chemists making molecular rings which have close visual similitude to *Solomon's knot*⁸, as shown in Figure 5 (Mark Stavish, 1996). Due the universality of these concepts, alchemy may be a probable reason for presence and distribution of Swastika in the referred section of study (Poynder, 2005).

Magnetic Strings and Swastika

There is a relationship between circumference and diameter, which is also known as pi relationship; in magnetism. As shown in Figure 6, the straight white line which runs through the centre in a relationship to its circumference having red, black or blue lines. The Swastika can be observed in the centre. Moreover, the pi relationships in magnetism are essentially the *Para*⁹ and *Diamagnetic line*¹⁰ which in turn resembles the *Key Loop*¹¹, as shown in Figure 7. If a collateral study is done among the two things discussed; the red, white and blue key might be the key to attainment of Swastika. The *Cosmic egg model*¹² of Ishtak Bentov, as shown in Figure 8 explains how a pattern symbolizing Swastika is formed at its centre representing a four dimensional rotating universe (Bentov, April 1, 2000). Bentov's model itself explains how the process of creation is a result of human tendencies and a rotating Swastika can be discovered within him, provided, the consciousness of human is merged with the consciousness of the creator (Bentov, December, 1988). This process may lead to the inseparable entity of a Swastika involving both creator and the creation. These theories has the universal scientific component as well as the pseudo-connectivity (partially myth based) which makes it probabilistic for our study.

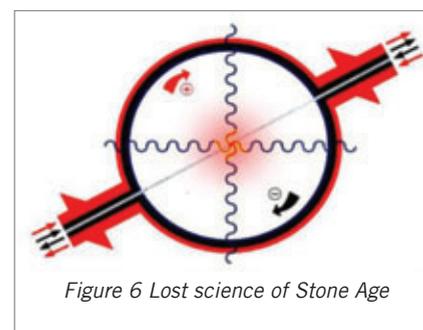


Figure 6 Lost science of Stone Age

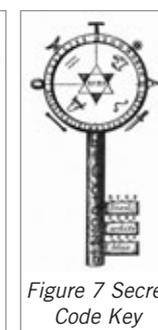


Figure 7 Secret Code Key

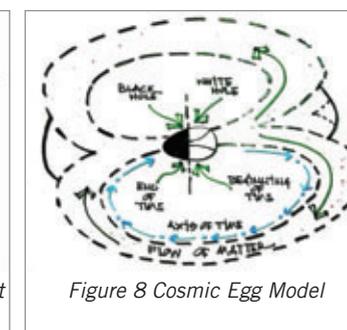


Figure 8 Cosmic Egg Model

⁴Well-known colourful text of magical medicine or alchemy

⁵Representing - Earth, Air, Fire, and Water, as they are assigned to the signs of the Zodiac

⁶A work of art, music or literature that can be regarded as best work that an artist or composer has produced

⁷Ancient tradition of spirituality, philosophy, and magic

⁸Mythological diagram having two closed loop which are doubly interlinked in an interlaced manner

⁹A form of magnetism where certain materials are attracted by externally applied magnetic field

¹⁰A form of magnetism where tendency of material to oppose magnetic field

¹¹An ancient belief of a magical secret code key

¹²Mythological motif found in the creation myths of many cultures and civilizations

Thus it might be deduced that these theories, in their own realms, comply with the **SandHI** parameters of heritage and science, and thus can be used to analyze our study area. There might have been a hidden relation between what is visible about Swastika and what is observable about Swastika (Leadbeater, 2014) (Jacoby, 23 Jul 2014). There will be a constant clash between magic and logic, which however, makes the study about Swastika more engrossing (Lovelock, 2000). The focus is to reveal the motive behind adoption of Swastika across different societies and in this section; it is the people who would determine the manifestations (Mat Irvine, July 1, 2002). The inter-linkages within the realms of each attributes are still a matter of further study.

Comprehensive Discussion

“*The best world is in the many worlds the world contains!*”

-Eduardo Galeano

This part will deal with Segment3 (Comprehensive Discussion) as stated earlier. The aim of this segment is to determine the extent of hidden traits in each zone. The objectives are to understand the differences in distribution/existence pattern in each area and to formulate relevant photographic evidences. The findings during the course of study are summarized in the three paradigms of: Final parametric input basis, scientific indicators for refinement and Heritage indicators for refinement respectively. The relation between the spatial extents and the input basis parameters (under the realm of Swastika) includes:

- Where : for relating physical features,
- When : for identifying existence in the time-line,
- How : for understanding their approach, and
- What: for recognizing the heritage value.

The spatial extents will be discussed region wise. Atlantis will be discussed in this segment. Although there is no present geographical existence of this region, as shown in the map in Figure 1, the study during this section will assume existence of this mystery (Godwin, November 18, 2010). The discussion in this segment will begin with Atlantis, followed by Northern Europe, Western Africa and South America.

Atlantis

The lost city of Atlantis has been a matter of immense interest, speculation and mystery in the context of ancient planning and civilizations (Charroux, 1974). Initially mentioned by Plato, the statements have been carried forward by *Dr. Manson Valentine*¹³, *Archimede*¹⁴, *WW2 ferry pilots*¹⁵, *Vladimir Marakuev*¹⁶, *Major K. Bilau*¹⁷ and other people which are being documented in over 25000 books published already. Besides a linguistic connections are also observed around the globe. The part “ATL” in *Atlantis* represents water, in ancient Mexico and North African *Berbers*¹⁸. The Euro Africans placed the great sea empire on their west and *Amerindians*¹⁹, on their east; and almost all of them referred to it in a name containing variants of A, T (or D), L and N. According to Plato, the reason for extinction of Atlantis civilization was because the weakening of divine element in them which resulted in the predominance of human traits; and resulted in an

inability to carry their prosperity with moderation (Doomsday, 1999). Most of the mythological books including Ramayana, Mahabharata and Troy are manifestation of human values and societal setting (McClain, January 15, 2014). Based on Plato’s theory from an analytical and not mythological point of view and several other evidences, it is assumed that Atlantis might have existed and had influence over our study area (Childress, 1995). *Ignatius Donnelly*²⁰ in his book “Atlantis” has described Atlantis as a land divided by vast waterways into four equal parts. The waterways were rivers and canals which were arteries of the kingdom. A circle divided equally by two bisecting lines was the accepted symbol of this island. This circle was indicated by the branching arms from left to right which resembles the true Swastika (Donnelly, June 14, 2012). The inhabitants, who went to four corners of the world, spread this symbol when they dispersed after the submerging of this island. Donnelly infers Swastika as an especially significant mystic symbol having embedded relation with water, which may be accepted (Donnelly, 2013).

Northern Europe

In cold and dry Northern Europe, there are three instances, where Swastika can be identified. In Kangaamiut, present in the political boundary of Greenland, during period of 1907 C.E. and 1939-45 C.E., Swastika can be seen in engravings and postal stamps, as seen in Figure 9. At that time, inhabitants were Greenlandic *Inuit tribe*²¹ who spoke Greenlandic and believed in Inuit religion and Evangelical *Lutheran Christianity*²². It is also important to note that during this period USA took control (During World War II) and eventually Denmark resumed control in 1953 C.E. The political reforms were finally enacted by the Danish Greenland Commission. This commission was composed of Greenland Provincial Council members and Danish economists. Besides logo, the usage may be interpreted as a decorative and symbolic approach also, as seen in Figure 10.

In Reykjavik, present in the political boundary of Iceland, during the period of 1914 C.E. and 1950-72 C.E., Swastika can be seen in the logo of shipping company named *Eimskipafelag Island*, as shown in Figure 11. In Iceland, the inhabitants were mainly *Nordic*²³ and *Gaelic*²⁴ tribes who spoke Icelandic and were Evangelical Lutheran Christian. Even here World War I was predominant in the socio-political scenario and Iceland was in its early stage of its economic development. This usage may be treated as signage. In Iceland, there is an ancient Nordic

¹³ He discovered (1968 C.E.) the Bimini wall (appears to be an underwater causeway)

¹⁴ He observed (1964 C.E.) what appeared to be a wide stone stairway cut in the continental shelf

¹⁵ They were engaged in transporting plane reported seeing, when the sun’s ray were slanted for max visibility

¹⁶ He showed walls of masonry blocks and a clearly defined giant staircase

¹⁷ He wrote his exuberant opinion, sonar soundings of the ocean have established a clearer picture of ocean bottom

¹⁸ Savagely cruel and primitive people

¹⁹ Any member of the people living in North or South America before the Europeans arrived

²⁰ He is known primarily now for his theories concerning Atlantis, Catastrophism, and Shakespearean authorship

²¹ Group of culturally similar indigenous peoples inhabiting the Arctic regions of Greenland

²² It is a worldwide, trans-denominational movement within Protestant Christianity maintaining that the essence of the gospel which consists in the doctrine of salvation by grace through faith in Jesus Christ’s atonement

²³ Tribes of northern Europe consisting of Nords

symbolism where Swastika-like inscriptions are prevalent. As shown in Figure 12, *Vegvisir compass*²⁵ often considered as Icelandic Viking rune for luck and blessing to save them from rough weather conditions are also in the Icelandic history. The functioning of this compass draws inspiration from Swastika. Moreover, there is a popular Icelandic myth (also globally famous) involving *Mjöllnir* or *Thor's hammer*²⁶ where Swastika symbol is said to be associated as a mythological emblem, as shown in Figure 13 (Wilson, 2010). Thus it can be concluded that the usage of Swastika in this part of the world was mythology driven belief-system based approach. The hidden motive may be to keep their ancient traditions alive in a context that seemed appropriate to them.

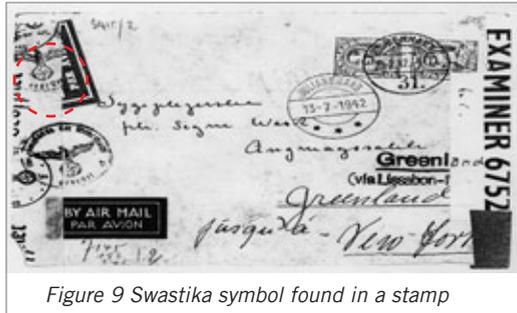


Figure 9 Swastika symbol found in a stamp

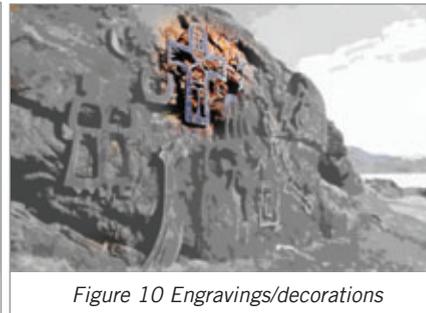


Figure 10 Engravings/decorations



Figure 11 Eimskipafelag Islands flag

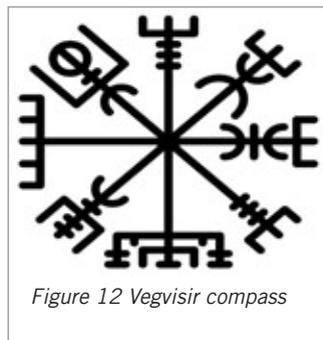


Figure 12 Vegvisir compass

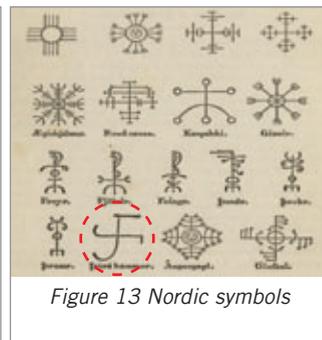


Figure 13 Nordic symbols

Western Africa

In hot and dry Western Africa, the presence of Swastika can be associated with the Ashanti or Akan nations consisting of a number of presently politically divided nations including the eight nations that falls under the categorization of this study section (Goodyear, 1891).

The symbol of Swastika was also known as *Nkotimsefopue* in this region. During the period between 15th-19th century C.E., Swastika can be seen on currency, rituals and clothes. As shown in Figure 14, 15 and 16, the currencies were made of gold and may be interpreted as an expression of money, wealth and integrity, if we compare their belonging to their tribal nature. In rituals, Swastika was present within the famous *Adinkra*²⁷ symbols of *Akan*²⁸ tribe, as shown in Figure 17. It was also commonly used in their fabrics of daily use, as shown in Figure 18. However a special Kinte cloth symbol called *Apremo Canon*²⁹ also existed, as shown in Figure 19. It had a

pattern which goes in the direction that Swastika shows. The symbolic design on clothes might hint towards a message of resistance against foreign domination or presence of superior military strategy. The inhabitants were *Ashanti*³⁰ or Akan tribe speaking Akan language and following practicing respective tribal customs. Furthermore, the semi-feudal classes in Africa were a result of Atlantic slave trade. This phenomenon of slave trade collaborated with Europeans to sanction the oppression of their own people and the stagnation of Africa's technological progress was predominantly due to this era.

So it might also be inferred that the approach towards the incorporation of Swastika was meant for iconography and numismatics. The evidences might also indicate externally influenced fabric designs if the tribal and aboriginal attributes of the study section area are taken into account. Again in this case, there is probably a strong desire to keep the traditions alive using Swastika (Lubicz, 1982).

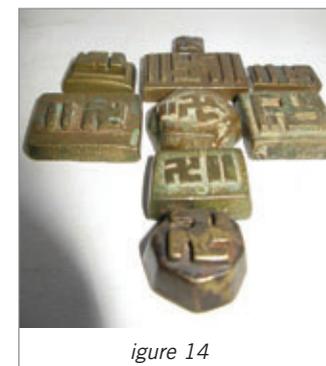


Figure 14



Figure 15



Figure 16

Akan Tribe Gold weights (started around 1400 BCE)



Figure 17 Adinkra Symbols

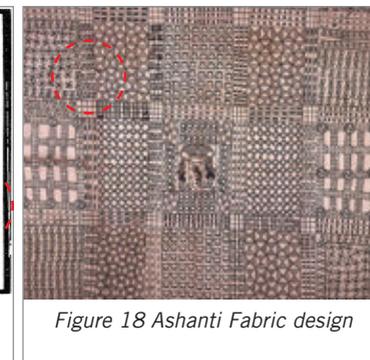


Figure 18 Ashanti Fabric design



Figure 19 Kinte cloth symbol

²⁴ Tribes of northern Europe consisting of Gaels

²⁵ Icelandic magical compass intended to help the bearer find his/her way through rough weather

²⁶ A major Norse god associated with thunder. Mjöllnir is depicted in Norse mythology as one of the most fearsome weapons, capable of leveling mountains

²⁷ Visual symbols, originally created by the Ashanti, that represent concepts or aphorisms

²⁸ An ethnic group in Ghana and Côte d'Ivoire

South America

In hot and wet South America, the spread of Swastika can be found in three ingeniously occupied regions namely Caribbean, Amazonian and Latin America consisting of a number of politically divided nations including the eight nations that falls under this study section.

In Puerto Rico, which fell under the domain of Caribbean in late 1960s C.E. and early 1970s C.E, the Swastika was used symbolically post-World War II. In 18th century C.E. Venezuela, under the domain of *Amazonia*³¹, Swastika was found embossed on *Terra cotta*³² stamps (as seen in Figure 20) which are believe to be imported to Africa and other places worldwide. The tribal population of *Piaroas*³³ painted their body which had patterns having close resemblance to Swastika (as seen in Figure 21 and 22). In Brazil, which also falls under the domain of Amazonia, Swastika was found imprinted on the triangular shields made by *Fig leaves*³⁴ wore by aboriginal women (as seen in Figure 23 and 24) (Anon., 1753-2017). *The Pueblo Indian*³⁵ tribe painted Swastika on their dance rattle (as seen in Figure 25) and a limited population of them are still found. In Paraguay and Uruguay, under the domain of Latin America, Swastika was found scratched on a pumpkin bottle surface and is believed to have its roots with the *Lenguas tribe*³⁶. This was discovered in 1939 C.E. by Dr Schliemann of Berlin Ethnological museum and the evidence was sent to Royal Museum at Berlin (Silverman & Isbell, 2008). The inferences are discussed below.

First, the Swastika in Puerto Rico might have been originated from the *Judaism*³⁷ spread by the Jews who came there in 15th century C.E. or maybe it was just a way of expressing an antithesis of liberal democratic society of United States. Significantly, Puerto Rico was also involved in the fascist political organization and war time enemy of United States. In late 1960s C.E. and early 1970s C.E., Swastika had eventually intruded in their daily life. It might be used as a strong message of existence by *East coast gang*³⁸ which had predominantly *black* and Puerto Rican population (Robin Heath, February 25, 2015).

Second, in Venezuela, the usage might hint towards trade routes with Africa and beyond. However, evidences show the resemblance of Swastika in style rather than in form. The tribal paintings indicate towards a reinterpreted version of Swastika embedded into the roots of their culture and life style.

²⁹ It represents the superior military strategy that helped the Akan nations overcome their oppressors

³⁰ An Akan empire and kingdom in what is now often called the Asante region

³¹ The zone encompassing Amazon rain forest, which is also the ancestral home of 1 million Indians

³² A type of earthenware - clay-based unglazed or glazed ceramic, where the fired body is porous

³³ Indigenous people of the middle Orinoco Basin in present-day Venezuela

³⁴ A leaf of a fig tree, often used for concealing the genitals in paintings and sculpture

³⁵ American Indians who live in pueblos and have a long tradition of farming

³⁶ Mascoian language spoken by the Paraguay of South America

³⁷ Ancient monotheistic religion

³⁸ After forming in Los Angeles in early 1970s C.E., the Bloods street gang got converted into the East Coast

Third, the instances in Brazil shows the Swastika linked to the daily necessities and tribal culture. Fourth, in Paraguay, the presence of Swastika in tribal form also confirms the two previous discussions.

It may be inferred that the usage of Swastika in this part of the world was to primarily articulate their- presence or exclusive existence, amidst what might have been a relatively fast growing world outside their tribal domain. This inference may be supported with the facts:

- Swastika on women dress,
- Swastika on tribal body painting, and
- Swastika on logo of ethnicity based regional gangs.



Figure 20 Terracotta stamps originated in Mexico and came as far as Venezuela



Figure 21



Figure 22

Piaroas body paintings having close resemblance to Swastika

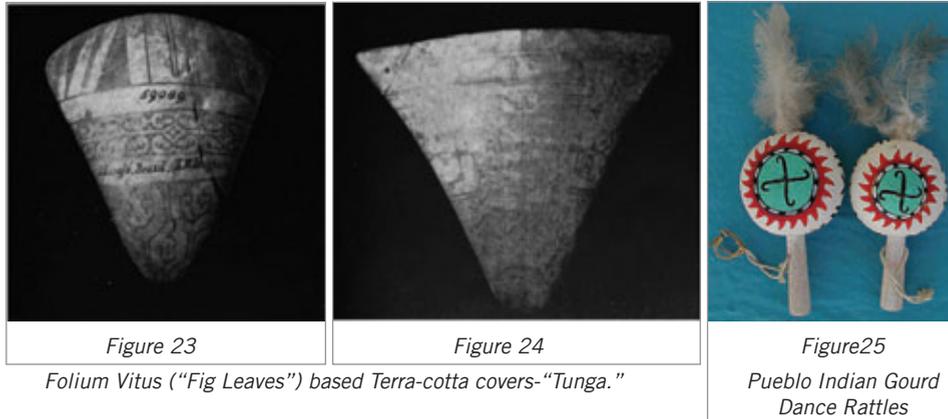


Figure 23

Figure 24

Figure 25

Folium Vitus ("Fig Leaves") based Terra-cotta covers-"Tunga."

Pueblo Indian Gourd Dance Rattles

Thus, it has been observed how the Swastika has been adopted in the spatial extent that has been taken up for this present section. The versatility (as seen in Figure 26 - 29) of the information gathered is just an indication of how enigmatic the spread and adaptation of Swastika has been.



Figure 26 Nordic Tribe

Figure 27 Pueblo Indian

Figure 28 Akan tribe



Figure 29 Lost city of Atlantis

Research Questions and findings

"We do not inherit the earth from our ancestors, we borrow it from our children"!!
-Native American Proverb

There is supposedly a trait and embedded linkage in the realm of Swastika based on the assortment of evidences in the preceding discussion. The focus of the research would meet an unprecedented direction if they can be nurtured and compared to the overall scenario of global search of Swastika. A number of research questions thus come up, as mentioned below:

- What are the scientific parameters thus found out during our study?
- What are the heritage parameters that would balance the **SandHI** Matrix?
- What are the indicators that these scientific and heritage parameters comprise?
- Is there any correlation among the parameters?
- Is the relationship leading to any traits?
- How can the proceedings be taken up for further studies?

Thus, based on the discussion in the previous sections, there are traits or linkages based on scientific as well as heritage parameters have to be determined in this stage. The matrices drawn and discussions have the parameters which were repetitively observed spatially and time-line wise, during compilation of secondary data. There are various explanations and interpretations of Swastika all over the globe, but here, only the related parameters are nurtured. Once the balanced study is accomplished, the next step will involve creating a combined matrix incorporating heritage parameters in X-axis and Scientific parameters in Y-Axis, as shown in Table 2.

Table 2 Showing the SandHI Matrix format

SandHI Matrix Parameters				Final Matrix	H1	H2	H3
Heritage	H1- Currency	H2- Belief Systems	H3- Art	S1	S1-H1	S1-H2	S1-H3
Scientific	S1- Power	S2- Technology	S3- Navigation	S2	S2-H1	S2-H2	S2-H3
				S3	S3-H1	S3-H2	S3-H3

This will lead to establishment of a logical interpretation of Swastika in the realm of **SandHI**. Matrices are formulated where both the parameters are mapped in co-ordination with the evidences (Table 3-10). As per the present study, in eighteen categories of evidences formulated into the **SandHI** matrix, Swastika has been pragmatic. This would be used for further analysis, and deriving relations, ranking and other necessary analysis.

Table 3 Showing Matrix S1-H1 (relationship between Power and Currency)

		H1			
		Currency			
		Where	When	What	How
S1	Power	Western Africa	15th-19th century C.E.	Gold weights	Numismatics

Table 4 Showing Matrix S1-H2 (relationship between Power and Belief Systems)

		H2			
		Belief Systems			
		Where	When	What	How
S1	Power	Reykjavik (Iceland)	With advent of Norse beliefs (9th century C.E.)	Thor’s hammer	Religious symbol
		Atlantis	350 B.C.E. (according to astrologer Plato)	The accepted symbol of Atlantis was a circle divided by branching directional arms from left to right, resembling the normal or true Swastika	Mythology
		Western Africa	15th-19th century C.E.	Adinkra Symbols	Tribal Symbols
		Amazonia	18th century C.E.	Aboriginal women wore triangular shield with Swastika imprint	Symbol on clothing

Table 5 Showing Matrix S1-H3 (relationship between Power and Art)

		H3			
		Art			
		Where	When	What	How
S1	Power	Greenland	1939-1945 C.E.	Engravings on Hills	Decoration
		Western Africa	15th-19th century C.E.	Thematic fabric	Symbols on clothing fabric
		Puerto Rico	Late 1960s and Early 1970s C.E.	Used as a symbol post World war II	War symbol
		Venezuela	7000 B.C.E. - Present	The Piaroas painted their body	Symbols on body painting

Table 6 Showing Matrix S1-H3 (relationship between Technology and Belief Systems)

		H2			
		Belief Systems			
		Where	When	What	How
S2	Technology	Atlantis	350 B.C.E. (according to astrologer Plato)	The kingdom of Atlantis is said to be divided into four parts by vast waterways in the form of Swastika	Planning

Table 7 Showing Matrix S2-H1 (relationship between Technology and Currency)

		H1			
		Currency			
		Where	When	What	How
S2	Technology	Western Africa	15th-19th century C.E.	Imprints on gold weights	Numismatics

Table 8 Showing Matrix S2-H3 (relationship between Technology and Art)

		H3			
		Art			
		Where	When	What	How
S2	Technol- ogy	Greenland	1907 C.E.	Found as a stamp on postcard	Stamp emblem
		Western Africa	15th-19th century C.E.	Fabric design	Symbols on clothing
		Venezuela	18th century C.E.	Terra cotta stamps	Symbols

Table 9 Showing Matrix S3-H2 (relationship between Navigation and Belief Systems)

		H2			
		Belief Systems			
		Where	When	What	How
S3	Navi- gation	Reykjavik (Iceland)	With advent of Norse beliefs (9th century C.E.)	Mythological compass	Religious symbol
		Paraguay/Uruguay	Found in 1939 C.E.	Scratched on a pumpkin bottle surface (belonging to tribe of Lenguas)	Symbol

Table 10 Showing Matrix S3-H3 (relationship between Navigation and Art)

		H3			
		Art			
		Where	When	What	How
S3	Navi- gation	Reykjavik (Iceland)	1914, 1950-1972 C.E.	Logo of shipping company	Signage
		Amazonia	700 C.E - Present	Pueblo Indian tribe painted Swastika on their dance rattle	Dance style

[N.B.: the Matrix S3-H1 is absent as there is no evidence which depicts relationship between navigation and currency]

Thus the eighteen categories of evidences will now be used further for: showing the degree of relationship among parameters, imparting ranking to spatial demarcation based on the number of occurrences and finally, assigning ranking the bi-parameter based analysis criteria.

“Art and Power will go on as they have done,- will make day out of night, time out of space, and space out of time!..”
-Ralph Waldo Emerson

Conclusions

The degree of importance thus determined from the comparison matrix can now be used as a tool to represent relationship as required to be answered in Research questions. As shown in Appendix 8.3, the relationship is derived by observing the ratio between the number of occurrences in a particular matrix’s cell and the total number of occurrences. It is then observed that Art-Power and Belief System-Power bears the maximum co-relation followed by the other parameters that were taken up for study (Table 11).

Table 11 Showing ranking system for bi-parameters

Ranks	Ranking the bi-parameter based analysis criteria							
	1		2		3		4	
Heritage Parameters	Art	Belief Systems	Art	Belief Systems	Art	Currency	Currency	Belief Systems
	+	+	+	+	+	+	+	+
Scientific Parameters	Power	Power	Technology	Navigation	Navigation	Power	Technology	Technology

Next, as seen in Table 12, ranking is assigned to the spatial demarcation based on the number of eighteen occurrences that are found during the last segment of discussion.

Table 12 Showing ranking system for spatial demarcation

Ranking to the spatial demarcation based on the number of occurrences						
Ranks	1		2	3	4	5
Countries	Western Africa		Iceland	Greenland	Puerto Rico	Suriname
	Including : Western Sahara, Mauritania, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone and Liberia			Brazil	Paraguay	Guyana
				Venezuela	Uruguay	French Guyana
				Atlantis		
No. of Evidences	5		3	2	1	0

Thus it can be seen that Western Africa shows relatively more presence of Swastika, followed by the other nations. It can also be considered that art forms and belief systems used to depict power might be the primary motive of adopting Swastika into the society of the spatial demarcations that was taken up for this section. This inference could possibly be a result of the predominant presence of the tribes who had to depict their dominance or individuality in the societal setting and for them, Swastika was an appropriate tool (Chaturvedi, 3 Aug 2015). It must be noted that the major difference between a tribe and relatively urbanized race lies in the fact that the latter would readily accept any development or change, whereas, the former would strive hard to sustain their traditional practice. The manifestation of Swastika in this part may differ from other parts of the world. As observed here and in accordance to Figure 6, there was a defined basis developed for analysis of this study. However, if the commonly referred hierarchy of needs (Maslow, 1943) are considered, there can be higher interpretation of this observation subject to further profound study.

Scope for further research: Realizing the advantages of probabilistic over deterministic approach in the realm of SandHI with respect to ‘Swastika’ project

This research involves a sense of mystery and stronghold of science, leaving behind a scope for further envisioning (McClain, January 15, 2014). Using this research methodology, a new SandHI-IIT model can be developed - using the Yale University model as a base (as seen in Figure 30). Moreover, it can reveal new spots where Swastika can be found and cannot be found (*Hypothesis testing*³⁹) and also provide major parametric analysis methods for further research and help trait based mapping in iconographic researches.

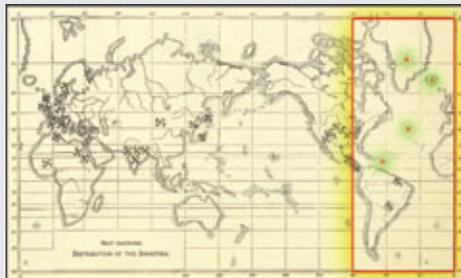


Figure 30 Spread of Swastika around the world (Highlighted area: Present Study Area)
Red Swastikas found during our study in IIT Kharagpur and base map is existing Yale University Model published in 1898

Geographic Information System supported real time mapping of study area is possible by setting up parameters and its respective indicators for a spatial extent (Coffey, September 15, 2010). Separate analysis framework for separate areas based on the traits found can also be searched. Moreover, scientifically, *Isopleth*⁴⁰ and even *Chloropleth*⁴¹ mapping in case of dual parameter e.g. SandHI, can be done. Moreover, Mixed mapping e.g. Geo-archaeology and Tribe, etc to seek probable results also becomes a possibility. Weighting the indexes and creating thematic maps similar to the land suitability analysis in place of *AHP analysis*⁴² can lead to spatial real time allocation (Saaty, September 3, 2012).

“Faith is a continuation of reason”..
-William Adams

Notes for further References

Time-line across discussed civilizations

Domain of Categorization		Phase 1	Phase 2	Phase 3	Phase 4
Countries	Sub Region (by UN)	6000 BC - 4000 BC	4000 BC - 2000 BC	2000 BC - 0 AD	0 AD - 500 AD
Greenland	Northern Europe	Paleo-Eskimo/ Independence I culture		Saqqaq culture/ Independence II culture	Early Dorset culture
Iceland					
Western Sahara	Northern Africa			Gaetuli - Berber tribe	
Mauritania	Western Africa				Berber and Arab migrants arrive in present-day Mauritania.
Senegal					
The Gambia					
Guinea Bissau					
Guinea					
Sierra Leone					
Liberia					
Puerto Rico	Caribbean				Igneri tribe
Venezuela	South America	Arawaks			
Guyana					
French Guyana					
Suriname					
Brazil					
Paraguay					
Uruguay					

³⁹ A supposition or proposed explanation made on the basis of limited evidences as a starting point for further investigation

⁴⁰ A map which generalizes and simplifies data with a continuous distribution

⁴¹ A map which shows regions or areas which have the same characteristics

⁴² Analytic Hierarchy Process (AHP) is a structured technique for organizing and analyzing complex decisions

Domain of Categorization		Phase 5	Phase 6	Phase 7	Phase 8
Countries	Sub Region (by UN)	500 AD - 1000 AD	1000 AD- 1500 AD	1500 AD-1600 AD	1600 AD-1700 AD
Greenland	Northern Europe	late Dorset culture / Norse settlements	late Dorset culture/ Inuit Greenlanders/ Thule culture		
Iceland		Icelandic Commonwealth	Norwegian Empire	Kalmar Union	Protestant Reformation
Western Sahara	Northern Africa	Arrival of islam (Beni hassan Tribe)	Marinid dynasty		
Mauritania	Western Africa	Empire of Ghana has its capital in present-day south-west Mauritania.	Berber Almoravid warriors defeat the Empire of Ghana.	European mariners and traders establish settlements.	Mauritanian Thirty-Year War: Berbers unsuccessful in repelling Arab warriors.
Senegal		Takrur kingdom	Jolof empire	Colony of France	
The Gambia		Takrur kingdom	Mali empire	Portugese colony	
Guinea Bissau		kingdom of Gabu	Mali empire	Portugese colony	
Guinea			Sosso kingdom/ Mali empire	Songhoi empire	Small kingdoms/ Ashanti or Akan nations in Western Africa
Sierra Leone			coastal tribe		
Liberia			Mali empire	Songhoi empire	Portugese, Dutch & English had trading posts
Puerto Rico	Caribbean	Taíno culture		Spanish colony	
Venezuela	South America			Spanish colony	
Guyana					Dutch colony
French Guyana					
Suriname					Dutch colony
Brazil				Portugese colony	
Paraguay				Spanish colony	
Uruguay				Portugese / Spanish colony	

Phase 9	Phase 10	Phase 11	Phase 12
1700 AD - 1800 AD	1800 AD - 1900 AD	1900 AD - 2000 AD	2000 AD- 2100 AD
Colony of Denmark		USA took control during world war II/ Denmark resumed control in 1953	Home rule
Danish dependency		fully sovereign state in a personal union with Denmark	Independent republic
	Spanish province	Disputed territory as morocco and mauritiana both claim of sovereignty of the territory	
	French forces gain control of southern Mauritania. In 1898 France wins the allegiance of Moors in the region.		French Colonization
		Independence	
British colony		Independence	
		Independence	
	French colony	Independence	
Portuguese trading posts	British colony		Independence
		New Constitution	Peace Treaty signed leading to election of first woman president
		US Territory	
	Independence		
	British colony	Independence	
		Independence	
	Independence		
	Independence		
	Independence		

Table Showing co-relation among parameters

Showing degree of relationship among parameters

Relationship = Respective number of categories of evidences/ Total number of categories of evidences					
Total number of Occurrences = 18			Heritage Parameters		
			H1	H2	H3
Scientific Parameters			Currency	Belief Systems	Art
	S1	Power	0.056	0.222	0.222
	S2	Technology	0.056	0.056	0.167
	S3	Navigation	0	0.111	0.111

References

- Anon., 1753-2017. THE LOST CITY OF Z ~ MS 512 ~ ABHA KINGDOM. *YIN YANG AND THE Swastika PROPHECY*.
- Anon., n.d. *Swastika before nazis*. [Online] Available at: <https://juxtintime.com/about/>.
- Bentov, I., 1 Apr 2000. *A Brief Tour of Higher Consciousness: A Cosmic Book on the Mechanics of Creation*. second edition ed. Destiny Books.
- Bentov, I., December, 1988. *A Cosmic Book*. Inner Traditions.
- Charroux, R., 1974. *Lost Worlds: Scientific Secrets of the Ancients*. FONTANA; New e. edition.
- Chaturvedi, A., 3 Aug 2015. *Lost Wisdom of the Swastika: Turiya Tales*. First edition ed. The Times Group Books.
- Childress, D.H., 1995. *Lost Cities of Atlantis, Ancient Europe and the Mediterranean (Lost Cities Series)*. Adventures Unlimited Press.
- Coffey, D.W.A.a.J.M., September 15, 2010. *GIS Tutorial 3: Advanced Workbook*. Esri Press; Pap/Cdr/Dv edition.
- d'Alviella, C.E.G., July 18, 2000. *Symbols: Their Migration and Universality (Dover Occult)*. Dover Publications.
- Dalal, A.S., 10-13 December 2004. Sri Aurobindo on cosmic consciousness—an integral view. *Psychology: The Indian Contribution*.
- Donnelly, I., June 14, 2012. *Atlantis: The Antediluvian World: Atlantean Megalithic Civilization*. 142012th ed. CreateSpace Independent Publishing Platform.

Doomsday, 1999. *Has the world ended before?*.

editorial, 2011. *kochina2012.wordpress.com*. [Online] Available at: <https://kachina2012.wordpress.com/?ref=spelling> [Accessed may 2016].

Godwin, J., November 18, 2010. *Atlantis and the Cycles of Time: Prophecies, Traditions, and Occult Revelations*. Inner Traditions.

Gooch, S., 12 January 2006. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom*. Inner Traditions.

Goodyear, W.H., 2014. *The grammar of the lotus: a new history of classic ornament as a development of Sun worship, with observations on the "Bronze culture" of prehistoric Europe, as derived from Egypt; based on the study*. Kindle Edition ed.

Hancock, G., October 28, 2003. *Underworld: The Mysterious Origins of Civilization*. Three Rivers Press.

Jacoby, J.D., 23 Jul 2014. *The Most Efficient Engine: The New Carnot Cycle*. Createspace.

Leadbeater, C.W., 2014. *Freemasonry and its Ancient Mystic Rites*. Lushena Books.

Lloyd, E., 2010. <http://www.messagetoeagle.com/>. [Online] [Accessed may 2016].

Lovelock, J., 2000. *Gaia: A New Look at Life on Earth*. Subsequent Edition ed. Oxford University Press; Subsequent edition.

Lubicz, R.A.S.d., 1982. *Sacred Science: The King of Pharaonic Theocracy*. Inner Traditions; New edition edition.

Mark Stavish, M.A., 1996. *The History of Alchemy in America*.

Maslow, A.H., December 6, 2013. *Hierarchy of Needs: A Theory of Human Motivation*. Kindle Edition ed. Start Publishing LLC.

Mat Irvine, S.A.C.C., July 1, 2002. *Creating Space: The Story of the Space Age Through Models: Apogee Books Space Series 24*. Collector's Guide Publishing, Inc.

McClain, E.G., January 15, 2014. *Myth of Invariance: The Origin of the Gods, Mathematics and Music from the RG Veda to Plato*. Nicolas-Hays.

Michell, J., 7 Jan 2008. *The Dimensions of Paradise: Sacred Geometry, Ancient Science, and the Heavenly Order on Earth*. third edition ed. Inner Traditions.

Poynder, M., 2005. *Lost Science Of The Stone Age: Sacred Energy And The I Ching*. Green Magic. *Quest for the Lost civilization*. 9 february, 2012. [Film].

Robin Heath, J.M., February 25, 2015. *The Lost Science of Measuring the Earth: Discovering the Sacred Geometry of the Ancients*. first edition ed. Adventures Unlimited Press.

Saaty, T.L., September 3, 2012. *Decision Making for Leaders: The Analytic Hierarchy Process for Decisions in a Complex World*. 3rd ed. RWS Publications.

Silverman, H. & Isbell, W., 2008. *Handbook of South American Archaeology*, II, pp.433-34.

The War on Consciousness BANNED TED TALK. 15 march, 2013. [Film] Directed by Graham Hancock.

Thompson, R.F., 2011. The Kongo Cosmogram in historical archeology and the moral compass of Dave the potter. *Grey Gundaker (2011)*, 45, pp.176-83.

Thompson, R.F. & Cornet, J., 1981. *The four moments of the sun : Kongo art in two worlds*.

Wilson, 1894. *Thor's hammer The fylfol by Llewlyn Jewit*. report of national museum.

Wilson, T., 2010. *The Swastika: The earliest known symbol and migration*. Kessinger Publishing, LLC.

Witzel, E.J.M., 14 Mar 2013. *The Origins of the World's Mythologies*. OUP USA.

Zmigrodzki, M.M., 2015. *An excerpt from*. Black Earth Group.

Suggested Readings

Alexander, C., 1980. *The Timeless Way of Building (Center for Environmental Structure Series)*. OUP USA.

Alexander, C., 2015. *A Pattern Language: Towns, Buildings, Construction (Center for Environmental Structure Series)*. Oxford.

Hancock, G., October 28, 2003. *Underworld: The Mysterious Origins of Civilization*. Three Rivers Press.

Nandakumar, P., 2011. *Sri Aurobindo's Savitri: A Study of the Cosmic Epic*. Wisdom Tree.

References for images matter in the report

Image no.	Source	Web link
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5	Courtesy of Joel Lipton, from the book "Seeing Solomon's Knot," by Lois Rose	https://www.sciencedaily.com/releases/2006/12/061215122349.htm
6	Lost science of Stone Age by Apibernik	http://www.toequest.com/forum/toe-theories/5445-tucks-theory-everything-211.html
7	Translated from the French by A.P.Morton	https://benebellwen.files.wordpress.com/2013/02/papus-the-tarot-of-the-bohemians-1892.pdf
8	Author	

Image no.	Source	Web link
9	Wisconsin Federation of Stamp Clubs (WFSC) Across the Fence Post Newsletter 2003 Selected Articles by Charles Shoemaker, Badger Stamp Club	http://www.wfscstamps.org/ATFP/Archive/wfsc_atfp_articles_2003.shtml
10	Hilke Maunder Qassiarsuk	http://www.alamy.com/stock-photo-metall-art-on-the-rocks-of-qassiarsuk-home-to-erik-the-reds-settlement-40083499.html
11	Pafélag Íslands, an Icelandic shippiFlag of Faroe Islands and maritime flag of Eimsking company by Mr. Michael Bay	https://www.reddit.com/r/vexillology/comments/3uapfh/flag_of_faroe_islands_and_maritime_flag_of/
12	Sigil Magic & Ancient Talismans: Vegvisir, the icelandic compass to find your way by the Easy Witch	http://www.magicalrecipesonline.com/2013/09/sigil-magic-vegvisir-icelandic-compass.html
13	Anitanh-Icelandic magical staves	http://northern-witch.tumblr.com/image/118122611365
14	African Swastika by taj-akoben	https://selfuni.wordpress.com/2014/12/11/afrikan-Swastika/
15		http://www.michaelbackmanltd.com/1402.html
16		https://selfuni.wordpress.com/2014/12/11/afrikan-Swastika/
17	Adinkra symbols recorded by Robert Sutherland Rattray, 1927	https://en.wikipedia.org/wiki/Adinkra_symbols
18	Ashanti Fabric design	https://en.wikipedia.org/wiki/Adinkra_symbols#/media/File:Adinkra_1825.jpg
19	Apremo Canon	https://www.kentecloth.net/kente-cloth-designs-and-meanings/
20	The Swastika: The Earliest Known Symbol & its Migrations Color Stamps From Mexico and Venezuela	http://northvegr.org/secondary%20sources/indoeuropean/the%20Swastika%20the%20earliest%20known%20symbol%20and%20its%20migrations/120.html
21	central2.to.gov.br	https://in.pinterest.com/pin/121949102385033805/

Image no.	Source	Web link
22	Intercambio Cultural – Índios do Xingu Toca da Raposa	http://www.tocadaraposa.com.br/intercambio-cultural-indios-do-xingutoca-da-raposa/
23	Book : The Swastika by Thomas Wilson, Page No. 905	
24		
25	Lion Gate Arms & Armour, Inc.	https://www.antiqueswords.com/product/bq1040/Pair-of-Mid-20th-Century-Pueblo-Indian-Gourd-Dance-Rattles.html
26	Nordic Tribe	http://www.larping.org/wp-content/uploads/2014/10/14688004196_9ed06887fa_h.jpg
27	Pueblo Indian	https://www.crowcanyon.org/EducationProducts/peoples_mesa_verde/images/wm_pueblo_little_girl_dancer_sm.jpg
28	Akan tribe	https://s-media-cache-ak0.pinning.com/736x/05/84/ac/0584ac44e29677012eea90819e440956.jpg
29	An artist's impression of dream city of Atlantis	http://cdn.history.com/sites/2/2013/12/atlantis-AB.jpeg
30	Yale University Model(-published in 1898)	http://forums.arrowheads.com/media/kunena/attachments/399/image_2014-11-09-9.jpg



Heritage and Science behind Swastika in Americas

Number symbolism helps to understand better the sense of the power of aggregation conveyed by this symbol. The swastika consists of a CROSS quadrupled, because each of the four arms extending from the centre has a further extension pointing in the direction in which it rotates. Its numerical value is therefore FOUR times four, or sixteen, and is the evolving power of reality or of the universe.

The Penguin Dictionary
of Symbols

Heritage and Science behind Swastika in Americas

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Introduction

Swastika is an eternal symbol which has been used in various parts of the world at different time periods since the beginning of human civilization. Many evidences have been found in the Americas for the use of swastika during different time periods. The focus of the study is to find the use of Swastika in North America and a part of South America as indicated in the map (Figure-1).

The need of the study can be specified by the following points:

- To discover the reasons for widespread use of the symbol.
- To find out the scientific reasons for using the symbol.
- To find out connection between scientific and cultural parameters.
- To find the migration pattern of the symbol in the study area.

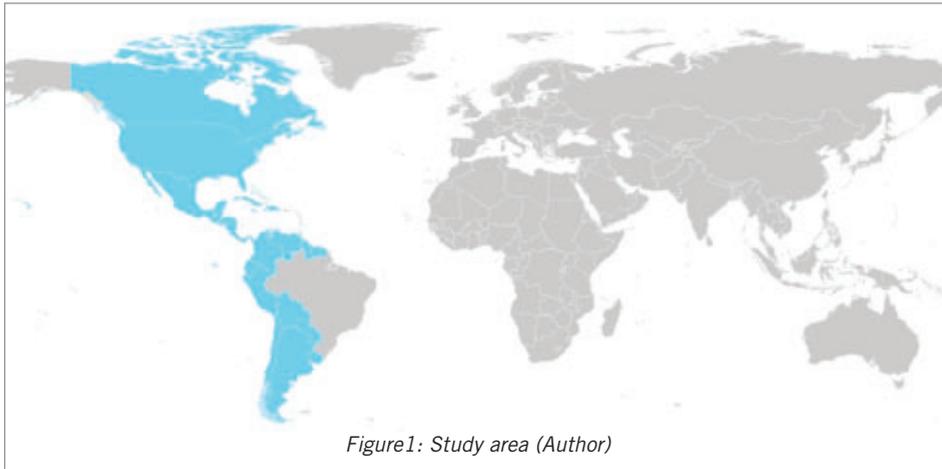
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Timeline and Approach to the study

The history of human civilization in the region dates back to 12000 BCE or even before, when it is believed that Paleo-Indians entered from Siberian region via Bering land bridge and subsequently settled in the Americas. All the major civilizations and cultures in the region with evidence of swastika are included in the study. The table below gives a brief various cultures and civilizations in the region at different time periods where evidence of swastika was found.

Table 1: Timeline

	8000 BCE	2000 BCE	200 BCE	250 CE	500 CE	900 CE	1100 CE	1300 CE	1500 CE Onwards
NORTH AMERICA			HOPEWELL CULTURE		HOPI CULTURE		NAVAJO CULTURE		EUROPEAN COLONIZATION
		PRE-CLASSIC MAYA		CLASSIC MAYA		POST-CLASSIC MAYA		AZTEC	SPANISH CONQUEST
							INCA CULTURE		SPANISH CONQUEST
									SPANISH CONQUEST

Components of research

Research has been done on the presence of Swastika in various cultures and civilizations in the Geographical region as marked in the map in Figure 1 to find its meaning and use in different types of activities and practices. The evidences found in various civilizations at different time periods have been analyzed along with available text on fixed parameters to derive relation between them.

Conceptual framework and Methodology

The framework of research can be given by the following points:

- Listing down civilizations & cultures along with time period
- Identification of different types of symbols
- Different types of uses of the symbol
- Identification of reasons for the use of symbol
- Establishing relation between reasons of the use

There are twelve cultural and eleven scientific parameters which have been categorized into three and four broader headings respectively. The cultural and scientific parameters are compared and degree of relativity has been calculated. This degree of relativity helps in establishing relation between uses of Swastika at different places. Numeric value has been derived from the matrix to establish this relation.

The cultural parameters are based on uses which were related to social aspects or day to day living of the people. The following are the broad headings of cultural parameters:

Table 2: Cultural Parameters for the Study

H-A [Rituals]	
H-A1	Birth and Death Rites
H-A2	WorshipH-A3Curing Disease
H-A4	Presence in Temples
H-B [Aesthetics]	
H-B1	Pottery/ Baskets etc.
H-B2	Rock Carvings/ Sculptures
H-B3	Embossing on Copper & Shells
H-B4	Sand Paintings
H-B5	Architecture
H-C [Social]	
H-C1	Warfare
H-C2	Stages of Life
H-C3	Good Luck

Table 3: Scientific Parameters for the Study

S-A [Astronomy]	
S-A1	Movement of Stars
S-A2	Movement of Sun
S-A3	Calendar System
S-A4	Time Cycle
S-B [Physical Environment]	
S-B1	Four Directions
S-B2	Change of Seasons
S-B3	Four Elements
S-C [Forces]	
S-C1	Turning Motions
S-C2	Movement of Water
S-D [Biological]	
S-D1	Life Cycle
S-D2	Movement of forces in living being

- i. Rituals- Use of Swastika or similar symbols in any of the rituals or ceremonies.
- ii. Aesthetics- The presence of Swastika in craft works, buildings, pottery etc. for visual reasons.
- iii. Social- Importance of Swastika symbol in social practices.

The following scientific parameters are selected based on the possible reason for the use of symbol:

- i. Astronomy- Aspects which are related to celestial bodies.
- ii. Physical Environment- Aspects which are related to perception of physical environment in which people are living.
- iii. Forces- The forces that had certain impact on their life.
- iv. Biological- The prevailing biological cycles as per their understanding.

Evidences

Maya Civilization

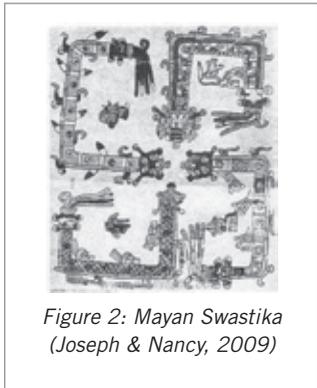


Figure 2: Mayan Swastika (Joseph & Nancy, 2009)

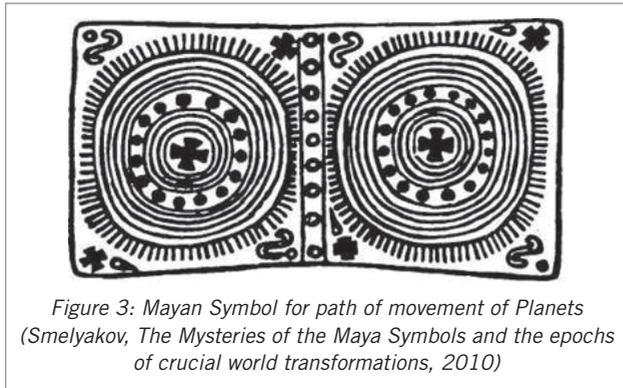


Figure 3: Mayan Symbol for path of movement of Planets (Smelyakov, The Mysteries of the Maya Symbols and the epochs of crucial world transformations, 2010)

The swastika extractions were widely used in Mayan art and cultures. The symbol of swastika was believed to be a symbol of creation for the Maya people. Mayans believed that the universe is flat and square, thus worshipped the swastika circle which represents perfection or balancing the forces.

The Mayan people developed a map of the solar system representing the circles as the path of movement of planets and the cross (in the form of Swastika) at centre is the sun with 4 paths of planets nearer to sun surrounded by an Asteroid belt and five paths of planets farther to the sun. (Bush)

Mayan people had two calendar systems, in one system an year was of three sixty five days and in the other it was of two sixty days. Both the calendar systems had a Galactic butterfly form of swastika and the direction of movement of calendar stone is in the clockwise movement of swastika. Many symbols in Mayan calendar system are in the form of Swastika which can also be seen in Mayan Manuscripts (Figure 5). Most of the writings of the legacies of the Maya Civilization were destroyed by Spaniards. (Nuttall, 2010)

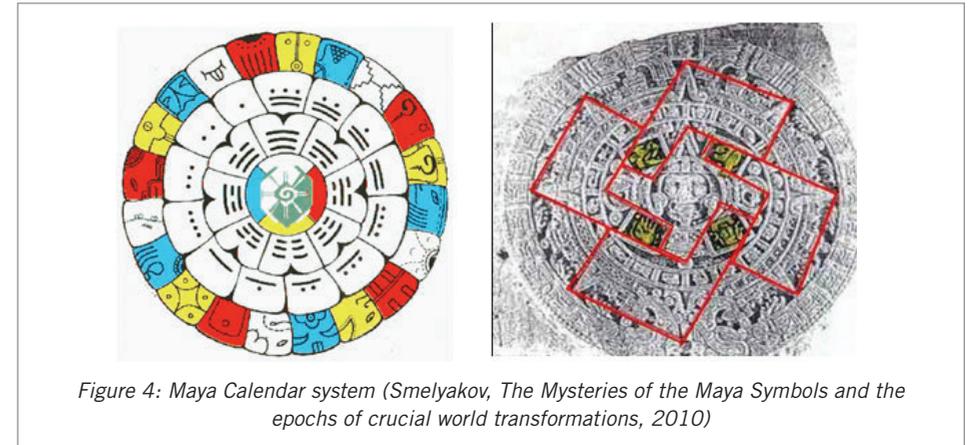


Figure 4: Maya Calendar system (Smelyakov, The Mysteries of the Maya Symbols and the epochs of crucial world transformations, 2010)

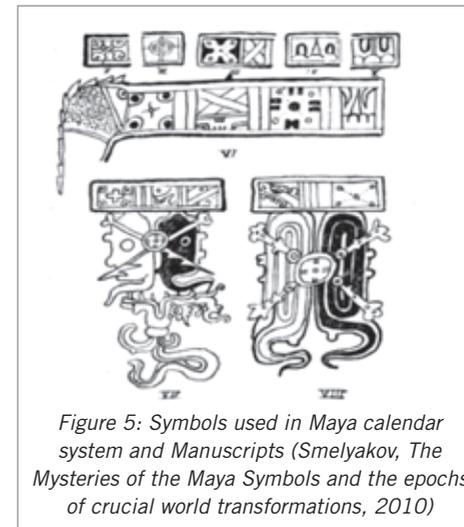


Figure 5: Symbols used in Maya calendar system and Manuscripts (Smelyakov, The Mysteries of the Maya Symbols and the epochs of crucial world transformations, 2010)

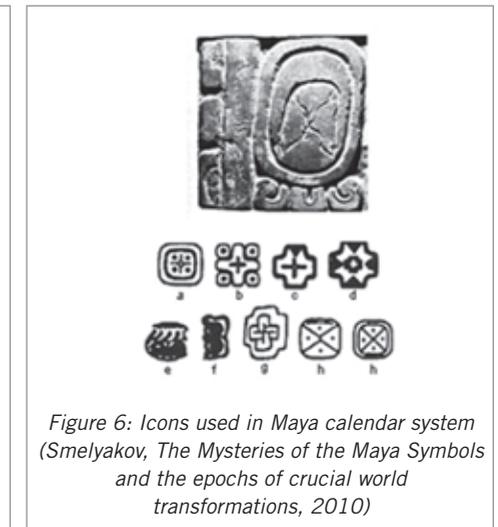


Figure 6: Icons used in Maya calendar system and the epochs of crucial world transformations, 2010)

Parametric Study

There are various reasons for the use of Swastika in the Mayan civilization. In the table shown below, the green boxes depict relationship between the scientific and cultural parameters whereas white boxes depict no relation between these parameters.

In Table no. 5, the degree of relation has been derived by dividing the number of related parameters by total number of parameters. The value zero means no relation and one means completely related. The table shows that maximum relation was found for Rituals with Astronomical and Physical Environment.

Table 4: Maya Civilization - Cultural vs. Scientific Parameters (Author)

Maya Civilization (2000 B.C.- 1500 A.D.)											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2											
H-A3											
H-A4											
H-B1											
H-B2											
H-B3											
H-B4											
H-B5											
H-C1											
H-C2											
H-C3											

Table 5: Degree of Relation between Scientific & Cultural Parameters

Maya Civilization				
	Astronomy	Physical Environment	Forces	Biological
Rituals	0.44	0.42	0	0.375
Aesthetics	0.15	0.20	0.05	0
Social	0.20	0.22	0	0.33

Hopewell culture

In Hopewell culture, swastika represents the four great primary forces generated by the central deity (Sun). The forces are represented in the four arms and the Sun in the centre. This swastika symbol is found on pottery with various forms of the symbol. This Hopewell Green slate Ceremonial Swastika version implies that the Hopewell may have also considered themselves to be a master race.

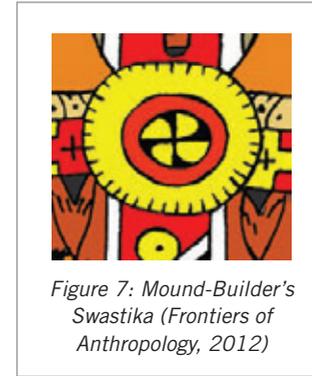


Figure 7: Mound-Builder's Swastika (Frontiers of Anthropology, 2012)

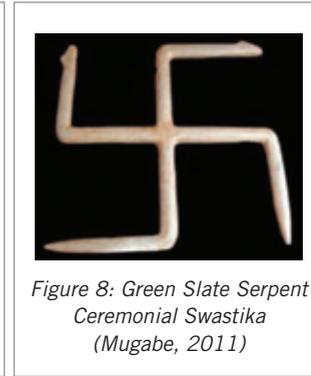


Figure 8: Green Slate Serpent Ceremonial Swastika (Mugabe, 2011)



Figure 9: Four Serpent Swastika (Swastika Symbol, 2010)

The engraved image in figure 7 from Spiro Mound in Oklahoma also indicates a form of the swastika, also known as the sun wheel, which elaborates upon the Native American concept of the four directions and the four winds, under the 'square sky' through which the sun traveled. These are the symbols used on pottery. (Native Indian Tribes, 2010)

The symbols in figure 10 are artistic designs of the cross symbolizing the Sacred Four; the Four Great Primary Forces generated by the Sun. The lines of the cross are drawn to extend in westerly directions, thus running from west to east. It can also be found at some of the Mexican tablets. The compounds cross (Figure 11) symbolising the Sun as the Celestial Orb with a white cross in the center surmounted with a red cross which are in the form of Swastika. (Sacred Text Archive-The Mound Builders of North America, 2011)

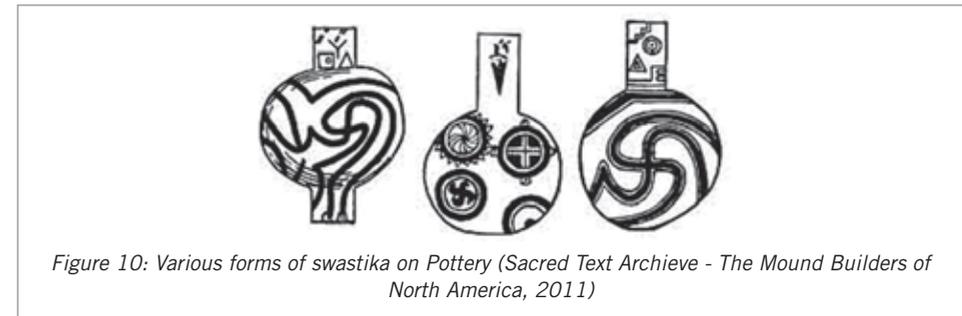


Figure 10: Various forms of swastika on Pottery (Sacred Text Archive - The Mound Builders of North America, 2011)

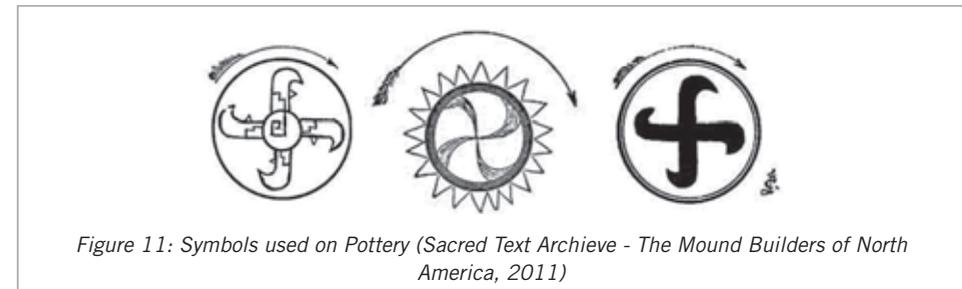


Figure 11: Symbols used on Pottery (Sacred Text Archive - The Mound Builders of North America, 2011)

Parametric study

In Hopewell culture, the rituals related to swastika were derived from all the scientific parameters whereas the Swastika symbols used for social purposes were not related to scientific parameters.

Table 6: Hopewell Culture - Cultural vs. Scientific Parameters (Author)

Hopewell Culture											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2											
H-A3											
H-A4											
H-B1											
H-B2											
H-B3											
H-B4											
H-B5											
H-C1											
H-C2											
H-C3											

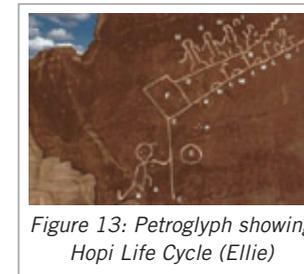
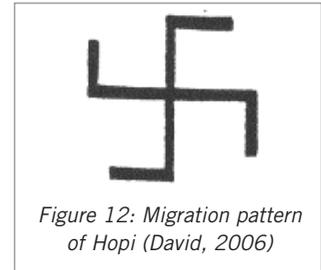
Table 7 shows the degree of dependency of cultural parameters on scientific explanations. The social parameters related to scientific parameters like astronomy and biological parameters as given by the value in the table.

Table 7: Degree of Relation between Scientific & Cultural Parameters (Author)

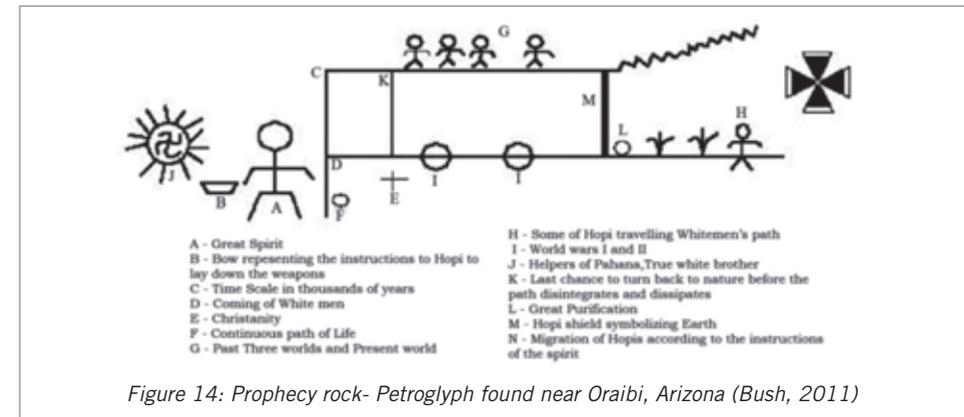
Hopewell Culture				
	Astronomy	Physical Environment	Forces	Biological
Rituals	0.13	0.08	0.17	0.00
Aesthetics	0.1	0.00	0.1	0
Social	0.33	0.00	0.00	0.33

Hopi Culture

In the swastika symbol, the cross (without the bends) represents the Spiritual migration and the bends represent the physical migration of the Hopi people. This illustrates that the first journey is the spiritual which should start from the centre and move out in four directions extending the spiritual sense to ethereal realm. Then begins the Physical migration of clans along North/South axle and then along East/West axle on the Earth. (Bush, 2011)



The swastika also played an important role in prophecies of the Hopi people in the form of Petroglyphs representing the life plan in the past and present worlds as shown in below figure 14. The the original petroglyph figure 13 was carved in the ancient times. The sun and the Swastika were not included in the earlier petroglyph but added in the interpreted version shown in figure 14 and incorporated into the prophecies of the Hopi representing the helpers of the Pahana- believed to be the true white brother of Hopi people.



The figure 14 illustrates that Pahana, also known as elder brother, will verify the authenticity by bearing a stone piece that will match up with the rest of the sacred tablet which the Creator had given to the Hopi before they began their migrations. Two helpers will accompany Pahana, one of which carries a masculine swastika representing purity and the four directions. The first helper also brings a Maltese cross with lines between the arms signifying menstrual blood, while the second helper holds merely a sun symbol. The combined forces of these three icons will 'shake the world' and bring about global purification. (David, 2006)

The flat gourd rattles with an image of swastika and were carried by masked *Kachinas* (the spirit messengers) while dancing in the village plaza during annual ceremonies to pray for rainfall and fertility in the northern zone of Arizona. (David, 2006)



Figure 15: Hopi Aya or "moisture rattle" with Swastika (David, 2006)



Figure 16: Figure 11 Mother Earth symbols of Hopi (Bush, 2011)

These are the symbols found on Petroglyph panels in the South of Oraibi, Arizona representing the story of Emergence or Birthing, also called as Mother Earth symbols. The Cross symbol represents the Father sky symbol or an unborn child shown within the womb of Mother. The Maze of lines represents the wandering path to be followed by each individual during his life time travelling all four directions. (Bush, 2011)

The swastika is also included in rituals for curing diseases through the Hopi Medicine Wheel of the Hopi prophecy. They are stone structures constructed by certain indigenous Hopi people of North America for various astronomical, ritual, healing, and teaching purposes. These are still 'opened' or inaugurated in Native American spirituality where they are more often referred to as 'sacred hoops'.



Figure 17: Stone structure of Hopi Medicine Wheel (Hopi Medicine Wheel, 2016)



Figure 18: Hopi Medicine Wheel (Medicine Wheel, 2016)

In the Hopi medicine wheel, the cardinal direction (north) represents the body, plants, and animals, the colour white and 'white skinned people' and Childhood (can also represent birth, or meeting a stranger and learning to trust as in infancy). The East represents the mind, air, the colour yellow and 'yellow skinned people' learning the groups to which people belong and Adolescence. The South represents the heart, fire, the colour red and 'red skinned people', and Adulthood.

Finally West represents the spirit, water, the colour blue or black, and 'black-skinned peoples' and Elderhood, the final life stage in the wheel, being an elder and passing on knowledge to the next generation so that the wheel may start again. It also represents that the four corners area of the Hopi is bounded by four sacred mountains. The spiritual centre within is a sacred site have special purpose in the future for mankind to survive and now should be left in its natural state which should be protected by everyone. (Hopi Medicine Wheel, 2016)

Parametric study

The table 8 shows the relation between cultural and scientific parameters in Hopi culture.

Table 8: Scientific vs. Cultural Parameters (Author)

Hopi Culture											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2											
H-A3											
H-A4											
H-B1											
H-B2											
H-B3											
H-B4											
H-B5											
H-C1											
H-C2											
H-C3											

Table 9: Degree of Relation (Author)

Hopi Culture				
	Astronomy	Physical Environment	Forces	Biological
Rituals	0.19	0.25	0.25	0.25
Aesthetics	0.1	0.33	0.3	0
Social	0.00	0.00	0.00	0.00

The table 9 shows degree of dependency of cultural parameters on scientific reasons. The elements related to Physical Environment seem to have maximum impact on cultural parameters.

Navajo culture

Navajos used swastika in their pottery, blankets, woven rugs, ornaments, sand paintings and their sacred rituals. They used swastika symbol to represent Whirling Logs which is associated with a narrative involving a “man who takes a journey down the San Juan River in a hollowed out log canoe, encounters whirlpools and a special event where the San Juan River meets the Colorado River. There he comes upon a whirling cross with Yei figures seated on the cross from which he learns much knowledge and takes back to his people.”(Native Indian Tribes, 2010)

The swastika is considered as a sacred symbol in their healing rituals in the form of sand paintings. Many mantras and chants were used to call the healing spirit which varies with design of the painting. Once the healing ceremony was over, then the painting was believed to have removed the illness from the patient and so the painting was destroyed. The sand painting designs were also used on the blankets and rugs.



Figure 19: Healing ritual of Navajos with Sand Paintings, Mantra and Chants (The Sacred Art of Navajo Sand Painting, 2011)



Figure 20: Different designs of Navajo Sand Paintings (The Sacred Art of Navajo Sand Painting, 2011)

The figures in sand paintings are symbolic representations meant to tell a story in Navajo mythology. Navajo designs also have gender justification like Round designs are considered as male designs and Square or Rectangular designs are considered as Female designs. These designs with corresponding chants were used to restore health, secure food and insure survival. The designs (Figure 20) are also used on Woven rugs, Blankets, Baskets, ornaments. (Native Indian Tribes, 2010)

Parametric study

In Navajo culture, Astronomical parameters governed the rituals and social practices as evident from the green boxes of table 10.

Table 10: Scientific vs. Cultural Parameters (Author)

Navajo Culture											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2											
H-A3											
H-A4											
H-B1											
H-B2											
H-B3											
H-B4											
H-B5											
H-C1											
H-C2											
H-C3											

Table 11: Degree of Relation between Parameters (Author)

Navajo Culture				
	Astronomy	Physical Environment	Forces	Biological
Rituals	0.38	0.58	0.25	0.5
Aesthetics	0.1	0.27	0.1	0.1
Social	0.25	0.33	0.17	0.33

The relation between physical environmental parameters and ritual parameters is the highest followed by astronomical parameters & ritual parameters as shown in table below.

Aztec culture

The Aztec swastika is one of the important forms of Swastika with various interpretations. It represents

1. The four stages of life-Childhood, Adolescence, Adulthood, Old age
2. The four directions North, West, South, East.
3. The Symbols of Tecpatl, Flint, Calli, House, Acatl, Cane, Tochtli, Rabbit.
4. The four Colors- Red, Yellow, Blue, Green used in Calendar system
5. The four elements- Fire, Earth, Air, Water.
6. Warmth, Darkness, Breath, Rain.

North and West were believed to be 'female' regions, South and East to be 'male' regions. All regions combined together forms a centre which represents the dual, generative, ruling, and directive force (Quetzalcoatl - The Divine Twin-Aztec God). The symbols (Figure 21) are used in Aztec pottery, artworks etc. (Cova, 1997)

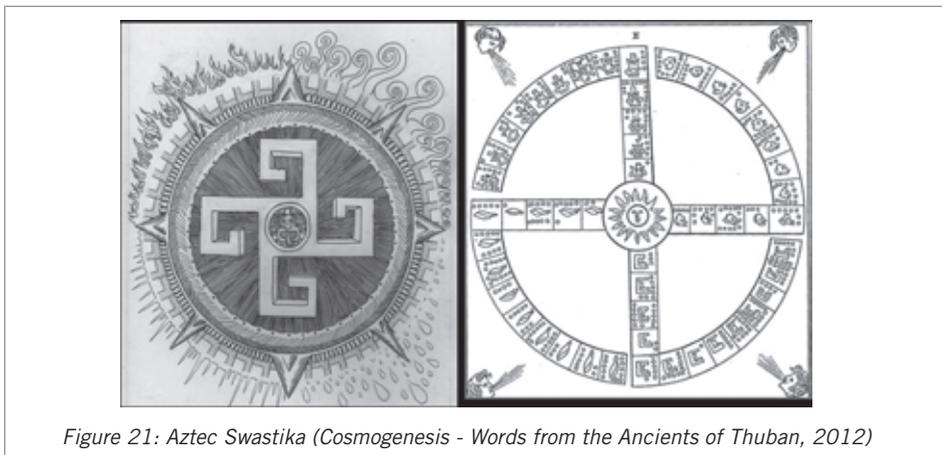


Figure 21: Aztec Swastika (Cosmogensis - Words from the Ancients of Thuban, 2012)

The Swastika is also widely used in Calendar systems and in pottery with different interpretations. The Aztec people observed that the combined midnight positions of the Ursa Major or Minor, at the four divisions of the year, made a Symmetrical swastika, the forms of which were identical with the different types of Swastika (figure 22). The reflection that Ursa Major was probably the first constellation lent an additional interest to the star-group, endeavored to imagine it in four equidistant positions, corresponding to the numerals in the symbol Ollin of the calendar stone of Mexico. (Nuttall, 2010)

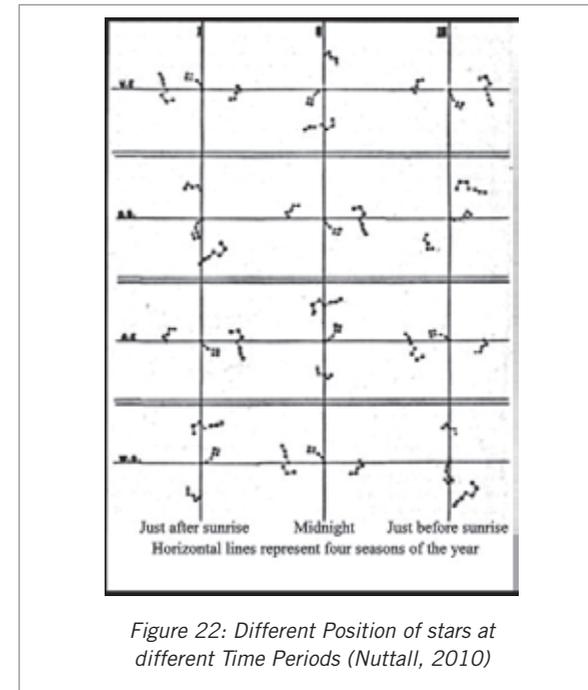


Figure 22: Different Position of stars at different Time Periods (Nuttall, 2010)

has square sections with dots, possibly representing weeks of five days each. The eight angles are rays of the sun. The snakes on the Aztec calendar stone symbols may represent the cycle of fifty two years. The movement of this calendar stone is unlocked with a key in the form of swastika and the direction is also related to Clockwise Swastika.

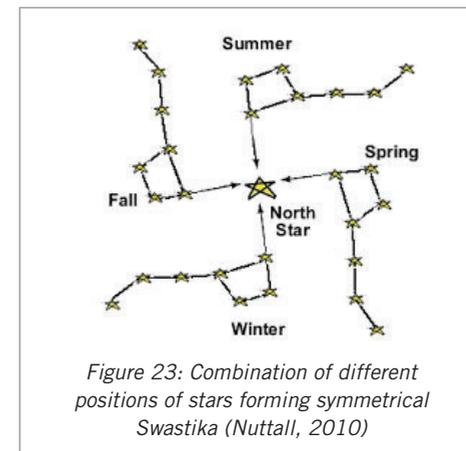


Figure 23: Combination of different positions of stars forming symmetrical Swastika (Nuttall, 2010)

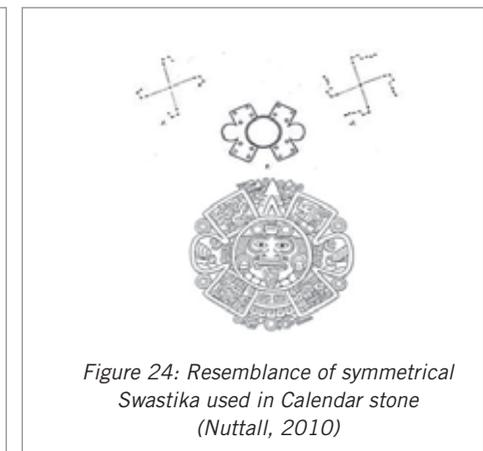


Figure 24: Resemblance of symmetrical Swastika used in Calendar stone (Nuttall, 2010)

The Aztec Calendar Stone is a symbolic portrayal of the four disasters that led to the end of the four prior universes as per Aztec belief. It also contains a hieroglyphic and pictographic layout of how the Aztecs measured time. Every fifty two years, the two calendars would align which was believed that it could bring disaster to the world, so a special ritual took place called the New Fire Festival. The centre is Sun God (some believe it may be the Earth God). The four squares that come next show the four previous creations that perished (by jaguars, wind, rain and water) which creates a form of swastika. The twenty signs mentioned are the days of the Aztec month and the five dots are the five unlucky days (days of sacrifice). The next area



Figure 25: Calendar Stone (Crystal, 2015)



Figure 26: Symbols in Aztec calendar stones (Crystal, 2015)

Parametric study

In Aztec culture most of the cultural parameters under rituals were related to the astronomical parameters as per Table 12.

Table 12: Scientific vs. Cultural Parameters (Author)

Aztec Culture											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2	█	█	█	█		█	█			█	
H-A3											
H-A4	█	█	█	█		█	█			█	
H-B1					█	█	█				
H-B2											
H-B3											
H-B4											
H-B5											
H-C1											
H-C2	█	█	█	█		█				█	█
H-C3											

The degree of relation between various parameters is shown in table 13. In Aztec culture, Astronomical and Physical parameters governs most of the Rituals related to swastika.

Table 13: Aztec Culture (Author)

Aztec Culture				
	Astronomy	Physical Environment	Forces	Biological
Religious	0.44	0.33	0	0.25
Aesthetics	0	0.20	0	0
Social	0.33	0.11	0	0.33

Inca culture

The Inca's Cross has three levels referring to the past, present and future with the inner circle representing the gateway between the worlds. The stepped cross is made up of an equal-armed cross indicating the cardinal points of the compass and a superimposed square. The square represents the other two levels of existence. It also represents Cuzco, the centre of the Incan empire, and the Southern Cross constellation.

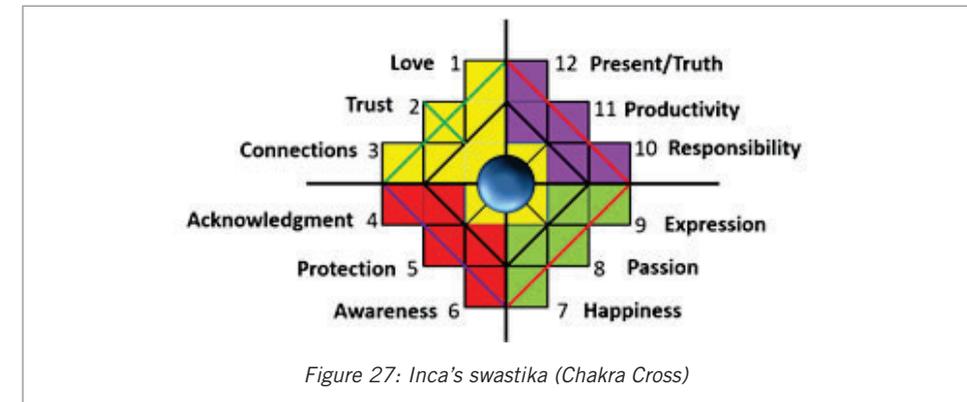
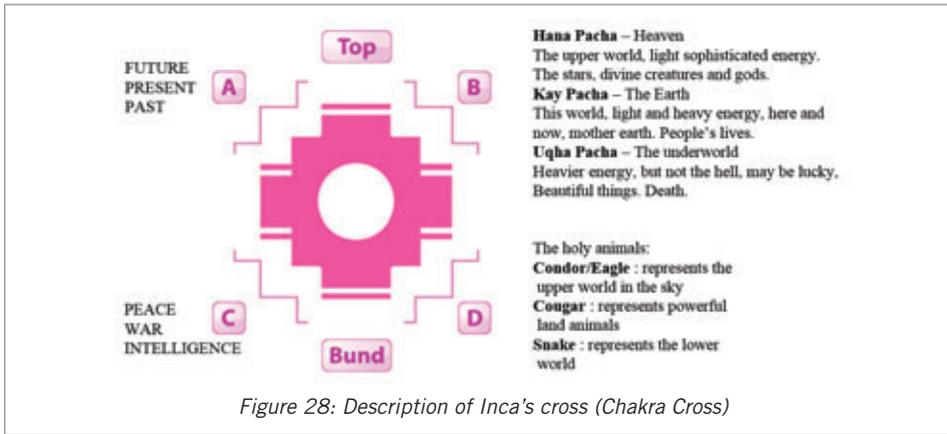
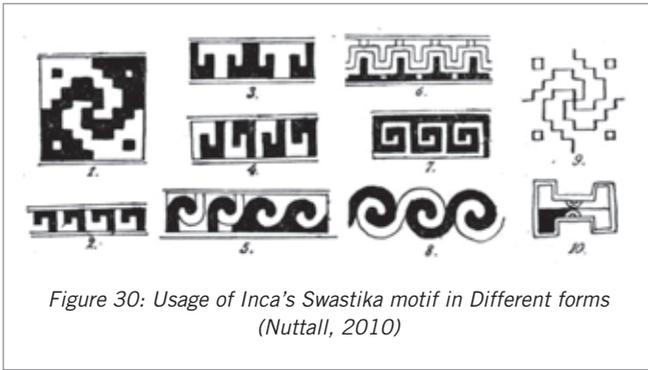
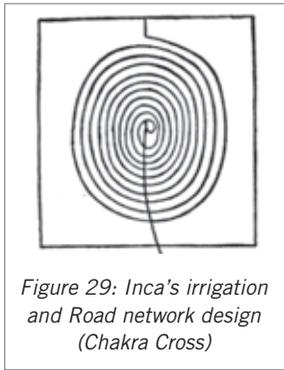


Figure 27: Inca's swastika (Chakra Cross)

In addition to the values, the Inca Cross has 12 points, which represent affirmations and life points. The Inca developed the calendar with the motif of Inca Swastika. The four most important corners symbolize: North, South, East and West; the four elements - Earth, Water, Fire, Air and the four big stars in the South Cross. There were twelve festivals on the sides of Incan calendar, composed by twelve months (each of thirty days). Each month in the Inca calendar had its own festival, representing month. The twelve outer corners mark the twelve corners of the year and an achievement of awareness. The centre hole is for the Inca Empire or the people who lived in the middle of the three lives, in the four elements and the middle of the universe. The Inca's swastika also represents, twelve qualities of a person need to adopt in his lifetime to have a balanced life. (Inka Design, 2014)



Some analogous designs from Peru also resembles swastikas in different forms which are filled in with alternate colours, a light and dark colour which gives an insight into the depths of meaning contained in the dualistic native designs. It consists of a disk, one-half of which represents the starry heaven and the other the sun. (Smelyakov & Wicherink, The Mistry of Maya Symbols and the Epochs of Crucial World Transformations, 2006)



The swastika motif can be seen on the highway and road system in Peru with over 18,000 miles of road. The swastika is also used in many edifices, sculptures, and ornaments as designs. There are many representations of the Chakana found in Peruvian sites at the ruins of Machu-Picchu, Pisac, and Ollantayambo.



Parametric study

The table 14 shows the relation between various parameters.

Table 14: Scientific vs. Cultural Parameters (Author)

Inca Civilization											
	S-A1	S-A2	S-A3	S-A4	S-B1	S-B2	S-B3	S-C1	S-C2	S-D1	S-D2
H-A1											
H-A2	█	█				█	█				
H-A3											
H-A4	█	█	█	█	█					█	
H-A5											
H-B1											
H-B2											
H-B3	█	█			█	█	█	█			█
H-B4											
H-B5		█			█		█	█			
H-C1											
H-C2	█	█	█	█		█	█	█		█	
H-C3											

The Astronomical parameters had major impact on the cultural parameters as evident from table15.

Table 15: Degree of relation (Author)

Aztec Culture				
	Astronomy	Physical Environment	Forces	Biological
Religious	0.30	0.15	0	0.1
Aesthetics	0.15	0.25	0.2	0.1
Socia	10.33	0.17	0.17	0.17

Research findings

The main findings of the research on swastika in this region are as mentioned below:

- Probably, Swastika symbol was drawn by tracing the path of movement of Ursa Major constellation along the Polaris at different time period.
- The most important depictions done by the symbol were based on direction and movements.
- Some kind of correlation exists between the use of Swastika in different cultures at different time periods in the region which shows migration and continuation of beliefs.
- The socio cultural uses of the symbol were not based on just blind belief but on certain scientific reasons.

Conclusion

The presence of Swastika in different cultures and civilizations suggests that there was cultural continuity and/or connection between various civilizations and across whole time period. The relation between scientific and cultural parameter depicts that there were scientific reasons behind the socio- cultural practices involving Swastika. There were various forms of Swastika with varying meaning and use but the concept remained same, i.e. some kind of cyclic process. The source of the symbol in the region varies from astrological inspiration to migration.

Scope for further research

The presence of same or similar symbol in different cultures and across various time periods raises many questions about the common source of origin, major connections and cultural linkages between all the cultures with respect to Swastika symbol. The relation between scientific parameters (astrological and physical environment) and cultural practices hints a common root for all the beliefs and practices in all the cultures and civilizations. Further research can be carried out to find how the principle behind swastika motif was embedded into the scientific and mathematical principles used for new inventions and discoveries in the Modern world. There is

scope of study in search of a common source of origin for various ritual and cultural practices in different civilizations.

Notes for further reference

Maya Civilization

Maya civilization was one of the oldest and most developed civilization in the Mesoamerican region, started around 2000 BCE and continued till 250 CE, which covers the area from northern Mexico to southwards into Central America. In the early stage of Maya civilization, people were mostly engaged in agricultural activities, growing crops such as corn, beans, squash and cassava. The Preclassic Maya also displayed advanced cultural traits like pyramid-building, city construction and the inscribing of stone monuments. The Maya were engaged in a dynamic relationship with neighbouring cultures that included the Olmecs, Mixtecs, Teotihuacan, the Aztecs, and others.

Hopewell Culture

The Hopewell culture is not a single culture or society but a set of related cultures describing the common aspects of the Native American culture that flourished along rivers in the north-eastern and mid western United States from 200 BCE to 500 CE, in the Middle Woodland period. Hopewell populations originated in western New York and moved south into Ohio where they built upon the local Adena mortuary tradition Or Hopewell was said to have originated in western Illinois and spread by diffusion to southern Ohio. Similarly, the Havana Hopewell tradition was thought to have spread up the Illinois River and into south-western Michigan, spawning Good all Hopewell. They were connected by a common network of trade routes known as the Hopewell Exchange System

Hopi Culture

Hopi people were the native Americans, one of the Pueblo people spread out in North West Arizona, New Mexico, South West Colorado, South west United States from 500 CE to 1100 CE and settled in different clusters of villages like Oraibi by 1100 CE. They believe in over 300 ancestral spirits known as Kachinas. They are well known for their Kachina dolls, baskets, jewellery and pottery. They performed many dances as part of their rituals and ceremonies which they believed will bring good luck and prosperity to them.

Navajo culture

The Navajos are the largest federally recognized Native American tribe in present day USA. As per Navajos self belief and legacy, they came from different world of different colour, the native inhabitants are chiefly Athabascans. Then down the coast of the Pacific, near the coast but seldom on it, little tribes of Athabaskan stock mark the trail of a great southern migration which may or may not have brought the ancestors of the Navajos. Even though they believed to have been born earlier, the Navajos became distinct with their own culture around 1100 CE taking hold in the four corners area of the Colorado plateau.

Aztec culture

Aztec people were certain ethnic groups of central Mexico, particularly those groups who spoke the Nahuatl and who dominated large parts of Mesoamerica from the 14th to 16th centuries. They kept records of their process. The alphabet for this language is in a form of picture writing. Records were kept on paper made of bark or deer skin. They also have the records of the sacrifices in rituals which were very common in Aztec. At early stages the Aztecs sacrificed the head of first hunted animal after wards the sacrifice gone to the level of giving human heart as offer to sun their father as belief and blood to mother earth idols.

Inca civilization

Inca's first appeared in the Andes region (south-eastern Peru) during the 12th century A.D. and built a massive kingdom through the military strength of their emperors. Known as Tawantinsuyu, the Inca state spanned the distance of northern Ecuador to central Chile and consisted of 12 million inhabitants from more than 100 different types of ethnic groups at its peak. According to myths, they were created by the sun god 'Inti' who sent his son Manco Capac to Earth through the middle of three caves in the village of Paccari Tampu.

References

1. ATLANTIAN GARDENS. (2014). Retrieved June 02, 2016, from <http://atlantiangardens.blogspot.in/>
2. Bush, J. The Swastika- A Native American Symbol. In J. Bush.
3. Chakana Cross. (n.d.). Retrieved June 02, 2016, from <http://www.seiyaku.com/index.html>
4. Cova, D. A. (1997). Latin America Studies. Retrieved June 02, 2016, from
5. David, G. A. (2006-2011). The Four Arms of Destiny: Swastikas in the Hopi World & Beyond. In G. A. David, The Four Arms of Destiny: Swastikas in the Hopi World & Beyond. <http://www.latinamericanstudies.org/>
6. Ellie. (n.d.). Hopi prophecies. Retrieved June 12, 2016, from [crystalinks Metaphysics and Science: http://www.crystalinks.com/hopi2.html](http://www.crystalinks.com/hopi2.html)
7. Encyclopida Britannica- Hopewell Culture. (2016). Retrieved June 02, 2016, from <http://www.britannica.com/topic/Hopewell-culture>
8. Environmental Synergy Limited. (2014). Retrieved June 02, 2016, from <http://www.incaesl.co.uk/values/>
9. Garlinghouse, T. S. (2012, february 25). Frontiers of Anthropology. Retrieved June 12, 2016, from Frontiers of Anthropology: <http://frontiers-of-anthropology.blogspot.in/2012/02/american-cromagnons-archaics-and.html>
10. Gill, J. O. (2011, May 9). Origins of the Suavastika & Swastika, Worldwide, As Told in the World's Oldest Language, Symbolism. Retrieved June 1, 2016, from <http://www.worldglobetrotters.com/>
<http://www.worldglobetrotters.com/Links/Swastika/swastika.htm>
11. Hopi Medicine Wheel. (n.d.). Retrieved June 02, 2016, from <http://www.thebunkhouse.org/about/hopi-medicine-wheel/>
12. Inka Design. (2014). Retrieved June 02, 2016, from <https://www.inkadesign.net/>
13. JDM. (n.d.). Walking Through Peruvian Clouds: Inca Cross. Retrieved June 12, 2016, from The view inka-cross-chakana/from my car: <https://theviewfrommycar.wordpress.com/2015/01/28/walking-through-peruvian-clouds-inca-cross/>
14. KhanAcademy.org. (2016). Retrieved June 02, 2016, from <https://www.khanacademy.org/humanities/art-americas/early-cultures/moundbuilders/a/ohio-hopewell-culture>
15. Matt middleton. (2011). Man in The Maze:The sacred art of Navajo painting. Retrieved June 12, 2016, from Man in The Maze: <http://maninthemaze.blogspot.in/2011/06/sacred-art-of-navajo-sandpainting.html>
16. Mugabe, B. (2011, June 19). The Gentle Swastika Collective. Retrieved June 12, 2016, from The Gentle Swastika Collective: <http://gentleswastikacolletive.blogspot.in/2011/06/pre-columbian-art-hopewell-green-slate.html>
17. Native American Kids and Big Kids Corner. (2015). Retrieved June 02, 2016, from <http://horsehints.org/IndexNativeAmericans.htm>
18. Native Indian Tribes. (2010). Retrieved June 02, 2016, from <http://www.warpaths2peacepipes.com/>
19. Nuttall, Z. (2010). The Fundamental Principles of Old and New World- The Fundamental Principles of Old and New World. Cambridge: Havard University.
20. Raphael. (n.d.). SWASTIKA and MALTESE CROSS. Retrieved June 12, 2016, from Alternative Thinking 37: <https://at37.wordpress.com/category/swastika-and-maltese-cross/>
21. Sacred Text Archeive- The Mound Builders of North America. (2011). Retrieved June 02, 2016, from <http://www.sacred-texts.com/atl/ssm/ssm11.htm>
22. Smelyakov, S., & Wicherink, J. (2006). The Mistry of Maya Symbols and the Epochs of Crucial World Transformations. Retrieved May 25, 2016, from Souls of Distortion: <http://www.soulsofdistortion.nl/Galactic%20Butterfly.html>
23. Usahitman.com. (2011). Retrieved June 02, 2016, from <https://usahitman.com/tasots/>
24. Wilson, T. (1896). The Swastika. Washington: Government Printing Office.

9



**Saga of the
Pacific**



Another form has each arm ending in A KEY, a clear expression of key symbolism, the vertical axis corresponding TO priestly office and the solstices and the horizontal to kingly office and the equinoxes.



The Penguin Dictionary
of Symbols



Saga of the Pacific

Navneet Singh¹, Nishant Prakhar², Subhalina Das Gupta³, Vikrant Sanke⁴,
Suparna Dasgupta⁵

Introduction

Swastika, the word unwinds the two hidden connotations: 'Su' states the auspiciousness and the word 'astik' depicts to be. The addition of Ka to the sentence is just for the purpose of suffix. This symbol of power and liberation has been used by various people and across various parts of the world for different reasons which were dependent on a number of factors.

A lot of ethnic research has been done in this region but its relevance with swastika is being carried out in this research, which is completely based on secondary data sources. The specific purpose of the research is to find linkages between civilisations throughout the world. Swastika can be seen throughout the world in various forms and functions since ancient ages. So through the lens of swastika this research will try to trace evidences in the pacific region.

The symbol of swastika couldn't however be traced back directly but in this section a relationship has been established between the principles of swastika with the evidences. This region falls under the direct influence of the Pacific Ring of Fire, and hence some of the evidences were washed away or destroyed. It should be kept in mind that the study is trying to relate Swastika to the remnants left behind. Putting together all of these islands, diaspora of cultures from one region to another have been found. People and its culture in the beginning originated in one single place which eventually diversified and grew due to the continuous process of trade and migration.

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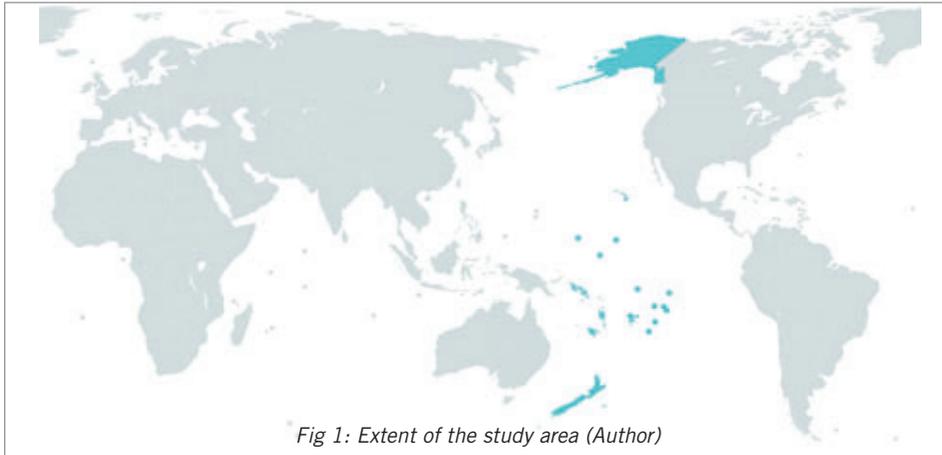


Fig 1: Extent of the study area (Author)

Research Questions

The questions that are looked out for in this research through the lens of the swastika are:

- **What** is the common thread that binds the countries together?
- If there was a common linkage, then **how** the countries were bound together?
- And the last question for the research was, **why** the countries were linked to each other?

Timeline and History

Table 1: showing the Timeline and the Important Events (Author)

REGION - E3	TIME-LINE	Important Events
	Alaska <ul style="list-style-type: none"> • 14000BC • 12000BC • 1639AD • 1867AD 	<ul style="list-style-type: none"> • Siberian invasion from Bering land bridge • Na-Dene and Eskimo-Aleut groups arrived • Cossack horseman built first Russian village • USA took possession of Alaska from Russia
	Hawaiian Island <ul style="list-style-type: none"> • 1778-1893AD • 1893-1959AD • 1959-Present 	<ul style="list-style-type: none"> • Contact to overthrow • Annexation to statehood • Statehood to Democracy
	Fiji <ul style="list-style-type: none"> • 1643AD • 1830-71AD • 1874-1970AD • 1970-Present 	<ul style="list-style-type: none"> • Dutch invasion • Christian missionaries arrived • British rule started • Independence
	Polynesia <ul style="list-style-type: none"> • 2000BC • 700-1100 • 1760-1800AD • 1842 	<ul style="list-style-type: none"> • Settlement began • Major islands finally been settled • Arrival of European missionaries • Became French protectorate
	Easter Island <ul style="list-style-type: none"> • 300AD • 600AD • 1000AD 	<ul style="list-style-type: none"> • Settlement happened • Ahu and Moai construction • Birdman cult developed
	New Zealand <ul style="list-style-type: none"> • 600-1300AD • 1642AD • 1769AD • 1840AD • 1997AD 	<ul style="list-style-type: none"> • Arrival of Maori • Abel Janszoon, first explorer to the land • Establishment of British Law • Self Governing Community • First female Prime Minister

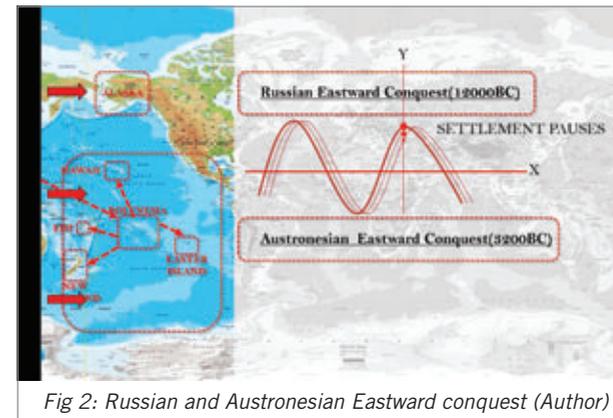


Fig 2: Russian and Austronesian Eastward conquest (Author)

The settlement of the Pacific progressed in a series of expansion pulses and settlement pauses. The Austronesians arose in Taiwan around 5,200 years ago. Before entering the Philippines, they waited for around a thousand years, and then spread rapidly across the 7,000 km from the Philippines to Polynesia in less than one thousand years. After settling Fiji, Samoa and Tonga, the Austronesians paused again for

another thousand years, before finally spreading further into Polynesia eventually reaching as far as New Zealand, Hawaii and Easter Island.' The details of the history of each of the countries has been discussed below.

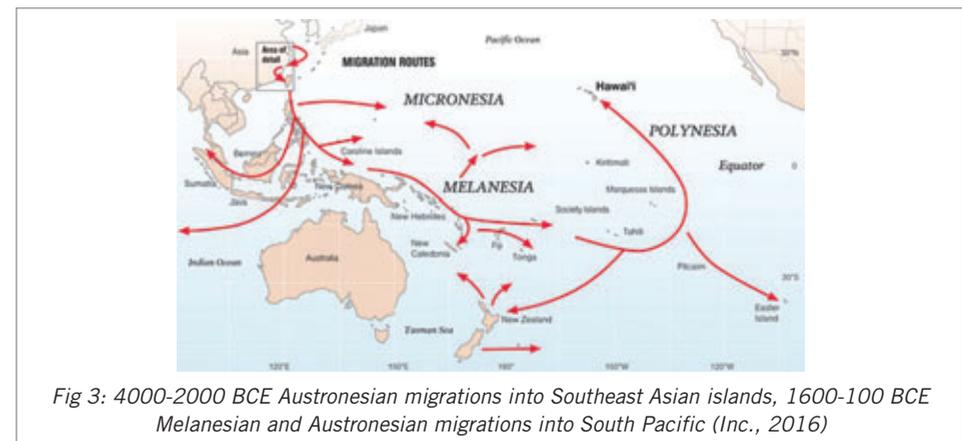


Fig 3: 4000-2000 BCE Austronesian migrations into Southeast Asian islands, 1600-100 BCE Melanesian and Austronesian migrations into South Pacific (Inc., 2016)

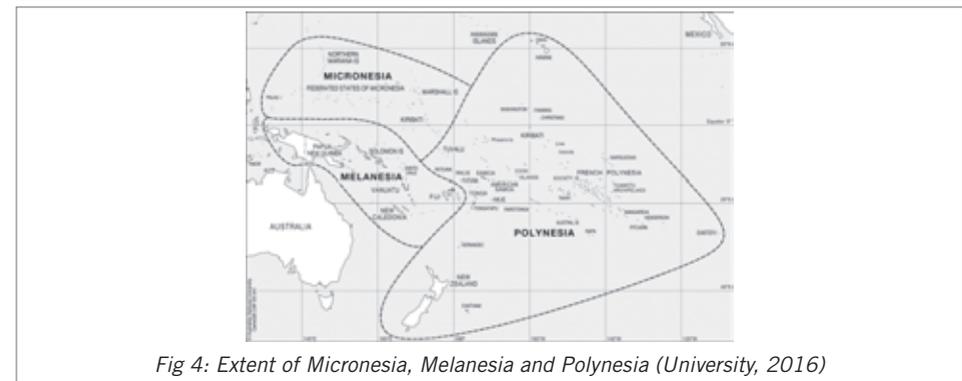


Fig 4: Extent of Micronesia, Melanesia and Polynesia (University, 2016)

Alaska

History of Alaska dates back to upper Palaeolithic period (around 14000bc), when Nomads groups crossed the Bering land bridge into western Alaska. The name “Alaska” derives from the Aleut word Alaxsxaq, meaning “mainland”. Alaska Natives are indigenous peoples of Alaska, United States: Iñupiat, Yupik, Aleut, Eyak, Tlingit, Haida, Tsimshian, and Northern Athabaskan cultures (Fig 5). These people were mainly hunters and gatherers, nomadic tribes residing in Alaska for more than 10000 years. (Alaska Humanities Forum, 2016)

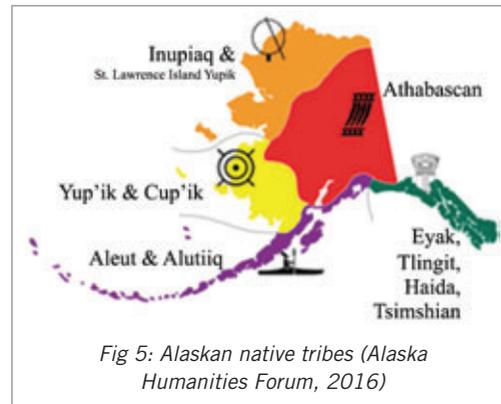


Fig 5: Alaskan native tribes (Alaska Humanities Forum, 2016)

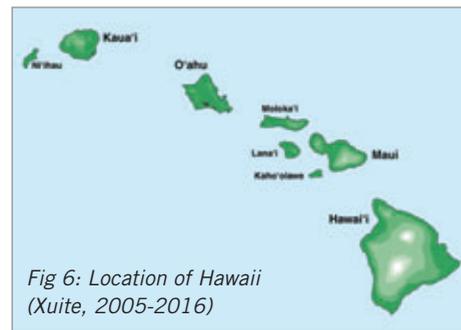


Fig 6: Location of Hawaii (Xuite, 2005-2016)

Hawaii

The island of the Kanaka Maoli's, which they inhabited sometime around 1300. Since they were closer to the nature, they worshipped nature and used materials that were earthen materials. For instance, wellness was maintained through the common practice of using natural la'au (plant), animal and mineral materials that were effective. (Motion magazine, 1997)

Fiji

The most significant aspect of Fijian pre-history is its antiquity. It is presently realized that people had reached the Fijian archipelago as early as 2000 years Before Common Era. Fijians would seem to have been good boatmen and craftsmen and excellent potters who made a distinct type of ware, known as Lapita pottery after its initial exploration. (Anon., 2016)

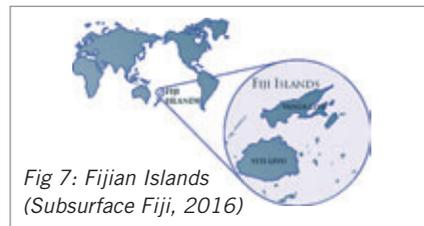


Fig 7: Fijian Islands (Subsurface Fiji, 2016)

A picture emerges of these 'Lapita' people- boatmen, adventurers, good navigators and craftsmen. In this classic difference between the two groups we see the genetic characteristics of what was later to be defined as Melanesian and Polynesian breed. The Melanesians were to retain their grip on the western island of the Southern Pacific but it could be fairly assumed that a great deal of the 'Lapita' descendants found its way into its main stream. At some stage, about 2000 years BCE, a canoe load of 'Lapita' boatmen either deliberately set out to the East or were driven off by a westerly wind and made landfall in the Fijian archipelago.

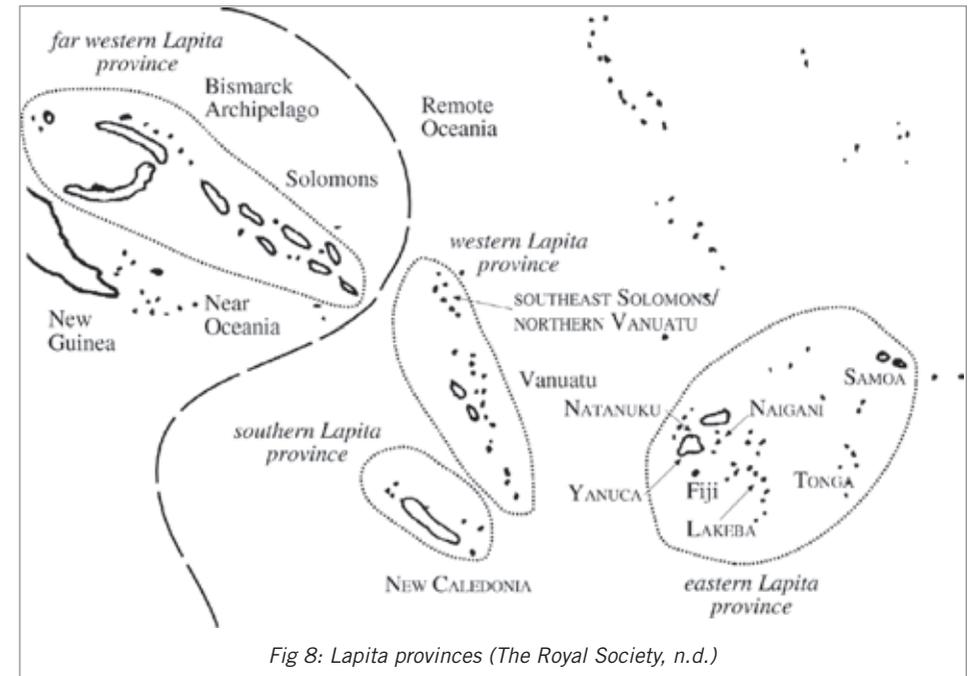


Fig 8: Lapita provinces (The Royal Society, n.d.)

Fiji seems to have experienced at least two times of quick cultural change in pre-historical times. This may have been because of the landing of new rushes of migrants, apparently from the West

French Polynesia

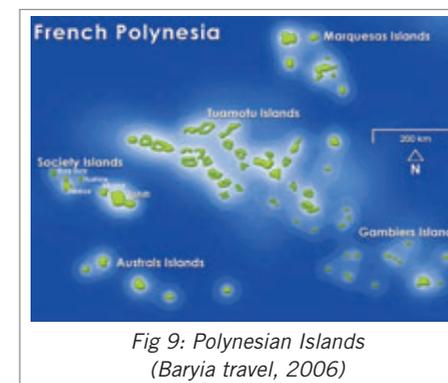


Fig 9: Polynesian Islands (Baryia travel, 2006)

The first people to set eyes on Tahiti and French Polynesia's other segregated islands moved from southeast Asia approximately 4,000 years prior. A large portion of today's South Pacific inhabitants are descendants of these boatmen (iExplore, n.d.). This region of the Pacific is now called the “Polynesian Triangle” and includes Hawaii to the north, Easter Island to the southeast, and New Zealand to the southwest. As an aftereffect of these relocations, the local Hawaiians and the Maoris of New Zealand all start from basic predecessors and talk a comparative dialect all in all known as Maohi (Tahiti tourisme, 2016). French Polynesia covers a vast region of the southeastern Pacific Ocean, but its total landmass covers only 3,543 sq. km (Polynesian cultural center, n.d.).

People who live in these islands are acknowledged as Polynesians for their similar traits in customs, society, language and culture. (Britannica, 2016)

Easter Island

Easter Island lies on the south easternmost point of the Polynesian triangle. It's a Chilean territory. Polynesians came to Easter Island sometime between 700 and 1100 CE and created a thriving and industrious culture.

New Zealand



Fig 10: The route of the Maori's (New Zealand Skeletons in the Cupboard Episode 1. The Red Head, 2015)

New Zealand was formed of sediments that were carried by sea and ash that were deposited by volcanoes on the sea floor. When the Maori's (who originated from Persia) arrived to this new island felt that the island was bigger than any of the Polynesian islands put together. There were plenty of resources to survive upon and the availability of resources resulted to their settling in the island. The seeds of culture were first sown soon after the natives started settling in the island. The evidences in the form of artefacts and ornamentation were gathered which are a reflection of the culture of the Maoris.

Approach to the study

This section will discuss about the findings of the evidences and their relation with swastika, either in form or function.

Components of research

The section tries to establish the connection of Swastika with the six regions Alaska, Hawaii, Fiji, French Polynesia, Easter Island and New Zealand which are situated along the largest Ocean in the world-The Pacific. The settlement along the Pacific Ocean is considered as one of the recent

ones that has left a long lasting impression on the world because of its diversity. However, even though the culture along the Pacific belt has left its mark on the others, it is believed that due to the geological conditions, the history and its evidences got washed away by the oceanic water. So the limited available secondary data states that it was the Austronesians who migrated from Taiwan to the Pacific initially during 1600 BCE to 1000 BCE. Based on the secondary data research, the evidences found in this region are based on scientific parameters like belief/psychology, cosmology and life cycle and the heritage aspects that are based on Artefacts, textile and ornamentation. These have been correlated and a strong relevance in terms of both science and heritage has been established.

Conceptual framework

The main aim of this section is to find out the evidences (through secondary data) in relation to Swastika either in form or function. The study of the settlement timeline, culture & religion, scientific parameters and heritage parameters will be selected/ finalised for further proceedings. Finally these parameters will be correlated with the evidences found in the form of artefacts, textile and ornamentation (which includes tattoo and jewellery). These findings will be carried forward through secondary data sources, articles and science journals.

In the beginning this chapter deals with the historical evolution of the settlements and the culture of the tribes that sailed all through the ocean and settled in the Pacific region. Secondly it will introduce the research questions and then go on to the details of the cultural study of the regions, as given in the order below.

ALASKA

HAWAII

FIJI

FRENCH POLYNESIA

EASTER ISLAND

NEW ZEALAND

The discussion will remain related to the evidences that have relevance with swastika.

Evidences and their Explanation

As has been mentioned earlier in Introduction, there are no direct connotations to the evidences found but certain indirect interpretations have been established. For better understanding few instances can be drawn, like for example, a major instrument of record that is the genealogy which is recorded mainly in the structure of Morae (meeting house) and in the Moko (Tattoo) worn by many Maori. The following countries of the Pacific will give a larger frame of the evidences. Likewise, Lapita's belief in their life cycle depicts the equilibrium and harmony in society.

The following countries of the Pacific will give a larger frame of the evidences.



Fig 11: a. Cup'ik Transformation Mask, b. Aleut ceremonial hat, c. Iñupiaq high-kick ball, ca.1910, d. Cup'ik earrings (Alaska Humanities Forum, 2016)



Fig 12: Native Alaskan totem – pole depicting their religious beliefs (Alaska Humanities Forum, 2016)

Alaska

Tribal governments played a major role in developing communities and functioning of their society. Alaskan subsistence societies were dynamic in nature. Their cycle of life was based on experience, new knowledge and full of decision and changes. Harsh nature of Alaska required a community approach to creating a life and society. In the old days, Alaskan native societies were closer to animals and were able to understand their animal wisdom and humour. Feasting was an important social occasions where songs, food, provisions and gifts were shared with other villages to foster community cohesion. Traditional clothing of the tribes (Athabascans) reflects in Fig 11). Objects were utilitarian and decorated with images of spiritual or physical activity.

Historically, art as a decorative concept did not traditionally exist among these indigenous people. While the art forms were and still are as different as the cultures of the native people who made them – they commonly evoke references to living in harmony with nature and all its many creatures. Masks were often made for ceremonial purposes, bringing the people, animals and spirits together in one being. Traditionally sculptures are not made for decoration, but as good luck amulets for hunting. Art objects are often coloured with charcoal and then a layer of fish oil was applied to assure it does not rub off. Influence of Shamanism in Yup'ik and Cup'ik tribes were prevalent, which dealt with mysticism. Shapes equivalent to Swastika was found on the garments, ornaments, headdresses, totem poles, tattoos, form line paintings (Fig 13).

- **Alaskan** natives used their natural resources efficiently so that nothing goes to waste and hence, completed the circle of life.
- **Swastika** in the form of their art which also depicted their relationship with the nature and their understanding of animal wisdom.



Fig 13: a. Iñupiaq wooden mask, ca.1910, b. Aleut Headdress, c & d. Haida native art on woollen button blankets (Alaska Humanities Forum, 2016)

Table 2: Correlation matrix: Alaska (Author)

Alaska	Artefacts	Textile	Ornamentation
Seasonal Changes	 <p>Animal intestine waterproof bag used by the natives in various seasons and materials procured keeping less damage to the nature</p>		
Elements of Nature	 <p>Totem pole depicting various animals and their relationship with the tribes</p>	 <p>Haida native art on woollen button blanket stylizing animals and natural resources</p>	 <p>Moose air tufting on athabaskan beaded hide box</p>

Alaska	Artefacts	Textile	Ornamentation
Psychology (Belief)	 <p>Totem pole recounts clan lineages, familiar legends, events</p>	 <p>Chilkat blanket used by high ranking tribal</p>	 <p>Yup'ik Mask of the bad spirit of the mountain</p>
Life Cycle	 <p>Ulu: an all-purpose traditional women knife used for different ranges throughout their life cycle.</p>		

Hawaii



Hawaii has its own set of evidences to trace back history. These have been tracked down through artefacts which include Maorian art, Stone Art, and sculptures. These, however, have a strong link with Science. The Tiki art has a strong sense of science embedded in the paintings of which most of them depicts nature and navigation. As we know that in the earlier days it was the stars that played a vital role in directions or navigations and therefore cosmology played an important role in navigating and making way for the lost path. The stone art depicts human figures which are

somewhat similar to the understanding of gravitation and levitation symbol of Swastika symbol. This also symbolises the umbilical cord as a way to remain connected to their mother or to the centre of all origin, thereby explaining cosmology. The Tiki sculpture too has a unitary pattern, growth, rebirth, deep connection to the earth, safe journey, strength, and prosperity.

Table 3: correlation matrix: Hawaii (Author)

Hawaii	Artefacts
Cosmology	 <p>Kanaka Maoli's navigated to different islands and followed the directions of the stars</p>
Psychology (Belief)	 <p>Stone Art has human figures are in the form of gravitation and also symbolises umbilical cord as a way to remain connected to their Mother</p>
Life Cycle	 <p>Sculpture patterns represent unity pattern, growth, rebirth, a deeper connection to the Earth, strength and prosperity</p>

Fiji

Lapita people were involved in pottery and textile art, so major traces were found in the pottery designs and textile designs only. Lapita art is best known for its ceramics, which feature intricate repeating geometric patterns that occasionally include anthropomorphic faces and figures. Every stamp consisted of a single design element that was combined with others to form elaborate patterns. Few of the designs found on Lapita pottery may be related to patterns seen in modern Polynesian tattoos and bark cloth. In addition to vessels, a number of freestanding pottery figures depicting zoomorphic and anthropomorphic subjects have been found at Lapita sites, as well as a single bone image representing a stylized human figure can be seen in Fig 15 and Fig 16. This Lapita face dates back to 1500-500 BCE at the same time Egyptian cross came into existence, this can be a mere coincidence or they may have a cosmological relation. Similarly swastika can be seen in the motifs on the pottery in.



Fig 15: Lapita face motif and Egyptian cross- the key of life (studies, 2012)

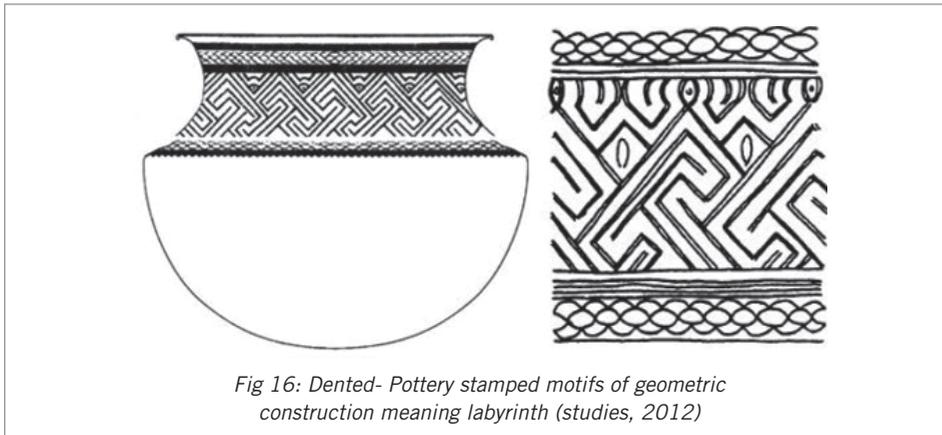


Fig 16: Dented- Pottery stamped motifs of geometric construction meaning labyrinth (studies, 2012)

Table 4: Correlation matrix: Fiji (Author)

Fiji	Artefacts	Textile	Ornamentation
Belief / psychology	 Lapita face mask	 Lapita fabric design, depicting ocean god and star fish	 Pattern depicting sun god
Cosmology	 lizard in motif depicting gravitation and levitation		
Life Cycle	 Lapita face depicting key of life		

French Polynesia

Tattoo's role in Polynesian Culture: Tattoo was a mean of delivering information of its owner. It's also a traditional method of taking spiritual strength, power and protection. The Polynesians use this as a sign of character and position in the society. Polynesian had a faith that a person's mana,



Fig 17: ancient Polynesian head tattoos showing ranks (Apolynesianattoo, 2016)

their spiritual power or life force, can be seen through their tattoo. Sea creatures were very common Polynesian symbols, like mantas, sharks and bonitos. Each of them has a meaning related to its inner nature and embodies the meaning by tattooing it on to their body. Polynesian tattoo masters can express varieties of meanings by combining different Polynesian symbols and motifs together. (Apolynesianattoo, 2016)

Tattoos and their meaning in relation with swastika

Marquesan cross

Marquesan cross is quite popular and widely used in many Polynesian tattoo arts. It's often used to symbolize balance between elements and harmony, which correlates with the meaning of swastika. Its origin is unknown but some archaeological study shows that it's connected to turtle shell.



Fig 18: Marquesan cross tattoo (Apolynesianattoo, 2016)

Sun

In Polynesian tattoo art, the sun often goes with other tattoos to show specific meanings. Many rounded Polynesian tattoo designs include the sun's meanings. In Polynesian culture the sun is often interpreted as riches, leadership, brilliance and grandness. The sun's periodic rising is noticed as giving consistent source, eternity which is similar with swastika. The sun's rising is expressed as rebirth and the sunset does not symbolize death, but a passageway to the world beyond. The meanings of Polynesian tattoo art which include the sun can vary from design to design, as per the usage of symbols that constitute the sun's edge.

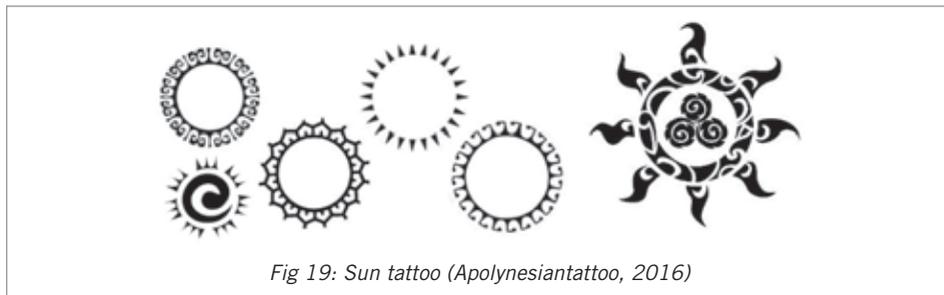


Fig 19: Sun tattoo (Apolynesianattoo, 2016)

Lizard (Moko) tattoo

In Polynesian culture, lizards and geckos are expressed as a form of appearance of gods by people, with a name called Moko. It's a main part in Polynesian beliefs, because they are symbolization of Polynesian gods, and also regarded as ancestors of Polynesian people, so they resemble to "enata", the symbol of man. Lizards are the kind of creature who can talk to gods and foresee the hidden world, bringing prosperity to a person who has it in his tattoo and delivering mortal enemies. In Maori branch of Polynesian culture, lizard were interpreted for protection from evils and illness. Lizard in other cultures, like, Australian culture, is a symbol of surviving from disasters and regrowth.



Fig 20: Lizard tattoo (Apolynesianattoo, 2016)

Table 5: Correlation matrix: French Polynesia (Author)

Alaska	Artefacts	Textile	Ornamentation
Belief / psychology	 Tangaroa: the god of sea	 Tapa cloth pattern	 Manta ray: sea warrior

Easter Island

The Rapa Nui people were the early people to live here who created the extant monumental statues called *Moai* Fig 21. The native language of Easter Island is Rapa Nui. Special writings have been found in this island called then as 'Rongorongo' writing Fig 21. The meaning of Rongorongo is "to recite, to declaim, and to chant out". These Rongorongo writings were first discovered by Eugene Eyraud, a lay friar of the Roman Catholic Church, who came to the Island on January 2, 1864 as a mission. He found twenty-six wooden tablets with unusual inscriptions and he wrote about them that:

"In every hut one finds wooden tablets or sticks covered in several sorts of hieroglyphic characters: They are actions of animals unknown on the island, which the natives draw with sharp stones. Each figure has its own name; but the scant attention they pay to these tablets leads me to think that these characters, remnants of some primitive writing, are now for them a habitual practice which they keep without seeking its meaning."- By Eugene Eyraud



Fig 21: Moai (ancestor figure), c. 1200, Rongorongo Script (Tim Razo, 2011)

- In the book, “The Indus Script and the Rig-Veda”, it is mentioned that Swastika appears in a form of a Bird in Easter Island Script
- Easter Islands is famous for the Moai structures which date back to its past. The writer of the book “the Atacama Crystal” says in the same that a swastika is supposed to be on the inside section of an unfinished moai up near the top of the Rano Raraku crater but he further says that he had crawled all over the island but he hasn't found one. So this yet remains a controversy.
- It can be believed that Swastika had some importance in the life of Rapa Nui people. The traces of Swastika clearly state that it somewhat influenced the lives of the early people of the Easter Island.

Table 6: Correlation matrix: Easter Island

Easter Island	Artefacts	Textile	Ornamentation
Elements of Nature	 Moai structure with inscriptions		 People wore it on their chest
Psychology (Belief)	 Rongorongo script with swastika like inscriptions	 Oceanic art of native Easter Island	
Life Cycle	 Rongorongo script depicting various life forms		

New Zealand

The evidences of Swastika were found from the practices of the natives of New Zealand-The Maori's. Their form of interpretation of Swastika in their own community was unique. Such interpretation found its place in the Maorian tattoo, artefacts and costumes. The transfer of land from one generation to another is depicted in each of the evidences which also has a hidden scientific connotation that can be linked with the life cycle and belief.

The culture of Maori forms a distinctive part of the culture of New Zealand. Their cultural richness throws light on the history, belief, desire, memory, commitment, loyalty, relationships and the values that they have passed on from one person to another and this has been reflected on the Maorian evidences. These evidences include Ornamentation, Artefacts, and Maorian Art. These have been described as follows:

Ornamentation

Ornamentation includes Ta Moko, Hei Tiki and Kapa Haka costume. These are the distinct trademarks and identity of the Maori's.

Ta Moko

Ta Moko is a way to keep the traditions and the values of the Maori's intact. The land of Maori's created their own identity through the art of Ta Moko (tattoo). The legend says that Mataora fell in love with the princess of Niwareka who wanted to marry him but was refused. This led to Mataora sick with guilt and tried persuading Niwareka who later agreed for marriage. Before setting off for their journey underground, Niwareka's father taught him the art of making ta moko. Since then Ta Moko has become a ritual among every household of Maori's. To mark equality in class, both men and women have to undergo this art of tattoo. Some of the common patterns noticed from the ancient time to modern are as:

- Koru (Spiral): New Life growth, Rebirth, A deeper connection to the Earth
- Hei Matau (Fish Hook): Good luck, safe journey, strength and prosperity
- Moana (Sea): Water harmony with the forces of Nature
- Mangopare (Hammerhead): Symbolizes natural abundance, strength and determination
- Kowhaiwhai (Traditional Maori ornamentation): Combining many elements in a symphony of meaning. Strength in unity.



Fig 22: Patterns of the Maori Tattoo (Mountain Jade, 2016)

Hei-tiki

Hei Tiki (Hei meaning a pendant and Tiki referring to a human image), are the most symbolical of the Maori culture in the whole range of art objects. They were the ancestral objects that were passed on from generation to generation. This traditional jewellery was believed to symbolise two things: One as a memoir to the ancestors and the second for childbirth. It would however be buried with the ancestors after their death and brought out at times during the time of mourning. It would also be handed over to the woman of the family by her husband's family if she had trouble conceiving. The quote below rightly describes Hei Tiki.

"We treat our artworks as people because many of them represent our ancestors who for us are real persons. Though they died generations ago they live in our memories and we live with them for they are an essential part of our identity as Maori individuals. They are anchor points in our genealogies and in our history. Without them we have no position in society and we have no social reality. We form with them the social universe of Maoridom. We are the past and the present and together we face the future." (Anon., September 29, 2010)

There were different kinds of symbols that were used for Hei Tiki. The most prominent ones are as:

Table 7: Symbols of Hei Tiki (Hokihanga, n.d.)

SYMBOL	IMAGE	DESCRIPTION
TIKI		Tiki represents human embryo or the Maori God Tiki was meant to be the creation of life.
KORU (Spiral)		The coil unfurls at the centre depicts a new life, rebirth, hope, reflection, awakening, purity, a new phase and a spirit of rejuvenation.
MOANA (Fish Hook)		Maoris were originally fishermen and hence this symbol was used as a sign of prosperity, power, good luck, the respect for the sea and the life in it.
PIKORUA (Single Twist)		The Pikorua symbolises the strength and the bond between two people, their loyalty and their friendship.
TOKI (Adze)		Toki symbolizes strength, determination, control and focus honour.

SYMBOL	IMAGE	DESCRIPTION
TEAR DROP (Roimata)		This stone indicates healing, comfort, reassurance and positive energy.
CIRCLE (Porowhita)		The circle with a hole in between represents the never ending circle of life and nature.
MAORI DOLPHIN (Papahu)		This is another Maori symbol of protection, of peace and affinity. It resembles a free spirit.
KOROPEPE (Mythical Eel/ Fish)		It is a symbol of new beginnings, prosperity and abundance.

Kapa haka costume

Such patterns have also been observed in the costumes of the Haka dance and artefacts of the Maorian art. These costumes of the Haka Dance are dyed (natural colours from mud and plants) fabrics depicting a harmony, and balance in the placement of designs. Maori art tries to define the generation to generation passing on of the land (by profession) which can be related to the

Table 8: correlation matrix: New Zealand

New Zealand	Artefacts	Textile	Ornamentation
Psychology (Belief)		 Dyed fabrics of Kapa Haka costume depicting a harmony and balance in the placement of designs	 Ta Moko depicted the story of their lives. Motifs of the tattoo had relevance to Swastika
Life Cycle	 Moai structure with inscriptions		

continuous process of life cycle. Life cycle is nothing but the rebirth, bringing back harmony and balance in the nature. As is it said *“From an old tree that was almost dead and gone, and the old leaves and old fruits that were gone (mortal death), the spirit of a deeper sacrifice was brought forward and sustained (first death) consequentially, the fresh green leaves (pallasha- pallava) are set forth again to bring forward new life and the new tree (resurrection).”* (Sen, 2006) . This rightly explains how the cycle of Birth and Death has been reflected through the Maorian art. The same has been depicted in the arts, fabrics, and in the patterns of the tattoos.

Networks

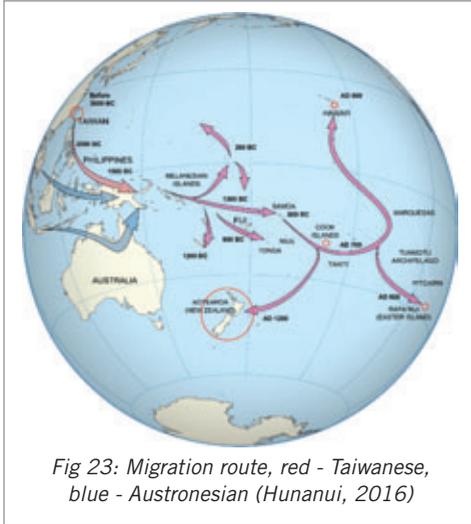


Fig 23: Migration route, red - Taiwanese, blue - Austronesian (Hunanui, 2016)

There are no evidences so far signifying a population pressure on south Asian islands that might lead people to continue their journey towards the east, ecological or economic needs might have been the impelling force of migration. These Lapita people were 'strandlopers' who tended to exploit marine resources intensively, and the abundant marine resources found on deserted islands had attracted these people to come out from Southeast Asian islands into the Melanesian and western Polynesian islands. Subsequently it has been suggested that expansion into the uninhabited islands of southeast Pacific was "fuelled by competition to reach anticipated reserves of unowned and prestigious commodities." (studies, 2012)

Research findings

The research has helped in understanding the following aspects, which have lent a deeper meaning and shaped our perspective on these countries:

The migration and the trade routes have helped us to understand that the origin of all the tribes that exist in the six countries are actually the Lapita tribe that moved to explore each of these countries for their own economic interests. This has led to the diversity in the culture (in terms of their artefacts, ornamentation, and dance costumes) of each of these countries even though their origin is the same. But the evidences found in each of their parts are similar to each other. Their beliefs and faith are all related to the basic principles that govern the human life which are backed by strong scientific connotations.

Conclusions

Through time and again, the countries like Alaska, Hawaii, Fiji, Polynesian islands, Eastern Islands and New Zealand, have tried to establish Swastika symbol through their daily rituals and

practices. For instance, in Alaska, Aleut Headress in the earlier days had learnt the art of taming animals which helped them in attaining animal wisdom. This has been reflected in each of their artefacts. This is nothing but a way to use them for their own purposes- making clothes out of their fur, for milk products etc. In short they used them for their own livelihood and sustainability. Similarly, The art of making tattoo's (in different patterns) in Fiji, Polynesian islands , and New Zealand is nothing but a way to help people remember them in the distant future, a way to express their story admist crowd and a way of keeping their memories alive. Such practices and traditions has been used through circle, triangle and through simple motifs through time and again in the primitive times that were invented and reinvented various time , sometimes for sustainability and sometimes for establishing their identity. Through time and again, countries like Alaska, Hawaii, Fiji, Polynesian islands, Easter Islands, and New Zealand, have tried to establish Swastika symbol through their daily rituals and practices.

The tribes of the Pacific region have their own unique culture and traditions which each of them have passed on to their generation for time immemorial. These value and cultures changed their meanings over time to suit their needs but their significance to Swastika is still intact and indiscrete. As rightly quoted by Thomas Wilson, *“The Swastika was probably the first to be made with a definite intention and a continuous or consecutive meaning, the knowledge of which passed from person to person, from tribe to tribe, from people to people, and from nation to nation, until, with possibly changed meanings, it has finally circled the globe.”*

Scope for further research

As per the methodology, major aspects of the research were done through secondary data survey. So the findings depict that due to the climatic and geographical reasons, the history is difficult to trace. Depending solely on secondary data and timeline, this research had limited scope in case of evidences in relevance to swastika. There is scope for further research, if primary data survey can be carried out.

Notes for further reference

Maori Tribe

Maori people are the indigenous Polynesian people of New Zealand. The Maori originated with settlers from eastern Polynesia, who arrived in New Zealand in several waves of canoe voyages at some time between 1250 and 1300 BCE. Over several centuries in isolation, the Polynesian settlers developed a unique culture that became known as the "Maori", with their own language, a rich mythology, distinctive crafts and performing arts.

Ta Moko

Ta Moko is the permanent marking on face and body of the indigenous people of New Zealand .Ta Moko describes an ancestral tribal message, the story of his life and their affiliations in their social structure. Even though the art of tattooing is common throughout the Pacific islands, the technique used in New Zealand is significantly different from the Polynesian counterparts. Maori's developed their own combs and chisels to puncture their skin that left deep grooves on their skin.

Hei Tiki

Tiki is usually meant for carving human figures both by the Maoris and the Polynesians. There seems to be a common connection that says that Tiki was the first man that was created by Tane. A similar myth also existed in Polynesia of carving structure. Hei Tiki refers to the human figures carved out of green stone as a neck ornament.

Kapa Haka

'Kapa' means to form a Line and 'Haka' means Dance. Kapa Haka is to showcase Maori heritage and culture through song and dance.

Lapita

The Lapita culture or tradition was a prehistoric Pacific Ocean people from c. 1600 BCE to c. 500 BCE. Archaeologists believe that the Lapita is the ancestor of historic cultures in Polynesia, Micronesia, and some coastal areas of Melanesia.

Tahitian

The Tahitians, or Maohis, are indigenous peoples of Tahiti and thirteen other Society Islands, as well as the modern population of these lands of mixed ancestry. The Tahitians are one of the most significant indigenous Polynesian peoples of Oceania.

References

A friend in the islands mIke and Crinella, n.d. *Hawai research reference resources*. [Online] Available at: <http://www.alohafriends.com/resources.html> [Accessed 10 June 2016].

Alaska Humanities Forum, 2016. *www.akhistorycourse.org*. [Online] Available at: <http://www.akhistorycourse.org/alaskas-cultures/table-of-contents> [Accessed 9 June 2016].

Anon., 2016. <http://www.tropicalfiji.com/>. [Online] Available at: http://www.tropicalfiji.com/about_fiji/culture/prehistory/

Anon., September 29, 2010. *Hubpages*. [Online] Available at: <http://hubpages.com/art/Maori-Symbol-Necklaces-and-their-Meanings> [Accessed 7th June 2016].

Apolynesianattoo, 2016. *www.apolynesianattoo.com/*. [Online] Available at: <http://www.apolynesianattoo.com/polynesian-tattoo-history> [Accessed 28 May 2016].

Baryia travel , 2006. *www.baryiatravel.com*. [Online] Available at: <http://www.baryiatravel.com/tahiti.html> [Accessed 28 May 2016].

Britannica, 2016. <http://www.britannica.com/place>. [Online] Available at: <http://www.britannica.com/place/Polynesia> [Accessed 2 June 2016].

CartoGIS College of Asia and the Pacific, The Australian National University as the source of the maps., 2016. *Australian National University*. [Online] Available at: <http://asiapacific.anu.edu.au/mapsonline/base-maps/micronesia-melanesia-polynesia> [Accessed 10 June 2016].

Herbert K.Kane, 2013. *Herb Kwainui Kane*. [Online] Available at: <http://herbkanehawaii.com/image-catalog/historical-events/> [Accessed 10 June 2016].

Hokihanga, n.d. *Turangi*. [Online] Available at: <http://www.turangi.com/meaning-of-maori-symbols-and-designs/> [Accessed 6th June 2016].

Hunanui, 2016. *hinanuia polynesian art*. [Online] Available at: <http://www.hinanui-artpolynesian.com/en/content/6-french-polynesia> [Accessed 10 June 2016].

iExplore, n.d. <http://www.iexplore.com/articles/>. [Online] Available at: <http://www.iexplore.com/articles/travel-guides/australia-and-south-pacific/french-polynesia/history-and-culture> [Accessed 26 May 2016].

Inc., I. H. F., 2016. *www.ibanagheritage.org*. [Online] Available at: <http://www.ibanagheritage.org/trivia/trivia/> [Accessed 25 May 2016].

Klaus Hympendahl, 2009. *lapita voyage*. [Online] Available at: http://www.lapita-voyage.org/en/scientific_objectives.html [Accessed 10 June 2016].

Motion magazine, 1997. *www.inmotionmagazine.com*. [Online] Available at: <http://www.inmotionmagazine.com/kekuninf.html> [Accessed 10 June 2016].

Mountain Jade, 2016. *www.mountainjade.co.nz*. [Online] Available at: <http://www.mountainjade.co.nz/blog/traditional-maori-symbols-and-meanings-carving-ta-moko/> [Accessed 17 June 2016].

New Zealand Skeletons in the Cupboard Episode 1. The Red Head. 2015. [Film] New Zealand and Hawai'i: Plummtree Productions.

NOAA, n.d. <http://www.ngdc.noaa.gov/>. [Online] Available at: <http://www.ngdc.noaa.gov/mgg/image/2minrelief.html> [Accessed 30 May 2016].

Pinterest, 2016. *Pinterest*. [Online] Available at: <http://www.bigstockphoto.com/image-45275026/stock-vector-tribal-seamless-pattern,-aztec-black-and-white-background> [Accessed 10 June 2016].

Pinterest, n.d. *www.pinterest.com*. [Online] Available at: <https://in.pinterest.com/pin/427912402074815752/> [Accessed 10 June 2016].

Polynesian cultural center, n.d. www.polynesia.com. [Online]
Available at: http://www.polynesia.com/polynesian_culture/tahiti/#.V0--pLh9601
[Accessed 26 may 2016].

Sen, J., 2006. *Concept of Complete Religion*. Kharagpur : Cygnus.

Slide Player, 2016. <http://slideplayer.com/>. [Online]
Available at: <http://slideplayer.com/slide/4524285/>
[Accessed 10 June 2016].

Slide Player, 2016. slideplayer.com. [Online]
Available at: <http://slideplayer.com/slide/4524285/>
[Accessed 10 June 2016].

South Pacific holidays, 2014. <http://www.tropicalfiji.com/>. [Online]
Available at: http://www.tropicalfiji.com/about_fiji/culture/prehistory/
[Accessed 28 may 2016].

studies, A., 2012. The way of doing things: what Lapita pottery can tell us about the stories of Austronesian expansion. *Austronesian studies* , Volume 3, pp. 1-25.

Subsurface Fiji, 2016. [Fijidiving.com](http://fijidiving.com). [Online]
Available at: <http://fijidiving.com/about-us/how-to-find-us/>
[Accessed June June 2016].

Tahiti tourisme, 2016. <http://www.tahiti-tourisme.com/default.asp>. [Online]
Available at: <http://www.tahiti-tourisme.com/discover/tahitihistory-culture.asp>
[Accessed 30 may 2016].

The bone art place, 2015. www.boneart.co.nz. [Online]
Available at: <http://www.boneart.co.nz/>
[Accessed 10 June 2016].

The Royal Society, n.d. rspb.royalsocietypublishing.org. [Online]
Available at: <http://rspb.royalsocietypublishing.org/content/365/1559/3889>
[Accessed 25 may 2016].

Tim Razo, 2011. *Miscellaneous Pics*. [Online]
Available at: <http://miscellaneous-pics.blogspot.in/2011/01/rongorongo-writing-easter-island.html>
[Accessed 10 June 2016].

University, A. N., 2016. asiapacific.anu.edu.au. [Online]
Available at: <http://asiapacific.anu.edu.au/mapsonline/base-maps/micronesia-melanesia-polynesia>
[Accessed 25 may 2016].

Whakatane.info, 2012. www.whakatane.info. [Online]
Available at: <http://www.whakatane.info/activities>
[Accessed 10 June 2016].

Xuite, 2005-2016. blog.xuite.net. [Online]
Available at: [http://blog.xuite.net/scirisyang/twblog/109297665-2010+Hawaii+\(1\)+%E9%87%8D%E8%BF%94%E8%97%8D%E8%89%B2%E5%A4%8F%E5%A8%81%E5%A4%B7+return+to+blue+blue+Haw](http://blog.xuite.net/scirisyang/twblog/109297665-2010+Hawaii+(1)+%E9%87%8D%E8%BF%94%E8%97%8D%E8%89%B2%E5%A4%8F%E5%A8%81%E5%A4%B7+return+to+blue+blue+Haw)
[Accessed 10 June 2016].

Epilogue

Retrospect: Swastika

Do you need to conduct historical studies across cultures to trace a symbol whose appeal is so universal and whose foundations are so humane and cosmological at the same time? The answer may be either a no or a yes. It is a 'no' as truths, which are universal and impersonal may not be dependent on mundane historic transfers and migration impacts across borders and cultures. Any race, any single human aspirant of truth at any given point of time in history can have an access to the fundamental laws of nature and that very access is irrespective of caste, creed or any religious belief. In this sense, both science and heritage eventually become universal as a process and often something which is greater than the domain of a single religion or monocentric logic. It is the first part of the argument.

On the hand, the answer could be a yes. It is yes as different cultures and societies through developing variety of expressions portraying the same truth, converge on the same truth, by keeping the underlying pattern and the diagrammatic message (what we call the ideogram) unchanged. From this contrasting point of view of cross-cultural studies and cross-anthropological inquiries, it is important then to understand what part has changed and why; and what has not and also why? In ancient Indian epistemology, often scholars label the two parts as the *Srutis* and the *Smritis*. Not many of all deep literature traditions in countries from across the world, like the Vedas in India, have the embedded strength of remaining both impersonal and personified at the same time. It is important to understand at this point that the double strength and the twin intender of Swastika as a dynamic system of pattern and ideogram having both dimensions of truth, absolute and positional, is commensurate with the Indian number system, as Laplace had pointed out –



It is India that gave us the ingenious method of expressing all numbers by means of ten symbols, each symbol receiving a value of position as well as an absolute value; a profound and important idea which appears so simple to us now that we ignore its true merit. But its very simplicity and the great ease which it has lent to computations put our arithmetic in the first rank of useful inventions; and we shall appreciate the grandeur of the achievement the more when we remember that it escaped the genius of Archimedes and Apollonius, two of the greatest men produced by antiquity.



Pierre-Simon Laplace

Return to Mathematical Circles

It is also evident in the following lines:



In the first place, we have to understand a little about our scriptures. Two ideals of truth are in our scriptures; the one is, what we call the eternal, and the other is not so authoritative, yet binding under particular circumstances, times, and places. The eternal relations which deal with the nature of the soul, and of God, and the relations between souls and God are embodied in what we call the Shrutis, the Vedas. The next set of truths is what we call the Smritis, as embodied in the words of Manu. Yājñavalkya, and other writers and also in the Purānas, down to the Tantras. The second class of books and teachings is subordinate to the Shrutis, inasmuch as whenever any one of these contradicts anything in the Shrutis, the Shrutis must prevail. This is the law.



Swami Vivekananda

The Sages of India

Summary of nine explorations

Nine explorations have been forwarded. It is evident from these explorations that symbols have always been used by humankind to express and preserve ideas, and activate deeper operations and relations in inter-dependent system of cultures and world civilizations. Only a few from a vast plethora of symbols extracted from different parts of the world having apparently varying surface meaning associated to them have eventually soared to higher planes of universal convergence. In that sense, such rare symbols, by virtue of their innate strength, have addressed both the parameters, namely, the deep scientific and the deep cultural. One among such symbols is the Swastika.

Swastika, being a symbol of auspiciousness has always been one of a multitude of expressions. The purpose of Swastika have had been to portray sustained spiritual growth and development achieved through the cycles of material progress and human culture. The degree of auspiciousness is therefore a step wise ascent, from the material, through the ethical, up to the spiritual. But the irony of history is that in spite of being a positive word hailed across countries and world cultures, it has acquired a negative meaning in the last century due to some developments in Europe. The problem was not with the pattern or the ideogram, but in the ways some have used it and forced others to comply through terror and warfare. Such material ambitions perhaps are a

thousand symbolic feet below the true ideals of Swastika, as portrayed by the Vedic seers.

Thus Swastika has always been a living paradox. Having several interpretations based on the manifestation of the degree of auspiciousness, gradation of prosperity, extent of good fortune, the role of shades of seasons, and so forth, it has imparted something deeper and permanent beneath the wheel of transition. The nine explorations have put to light the symbol having a degree of auspiciousness, as well as decorative values. The explorations have shown that there are various opinions prevailing regarding its origin, functions, meaning, and elucidations common to many ancient of symbols. 'Mind sees what it wishes to see' and the same truth can be interpreted in various levels and shades. So is the Swastika.

In the Indian sub-continent, Swastika presents a sustained and an uninterrupted history as it can be traced from the pre-historic proto Indus Valley, and Saraswati civilization till the present times. However, in other parts of the world, the journey of Swastika from its unanswered origin to today's world is filled with mysteries and broken links of evidences spread over different ages of civilization. The origin of the Swastika is debatable as it is precisely

Pattern behind patterns

The etymology of the word Swastika is rooted in the fundamental Sanskrit word: *Asti*, which means an established configuration and a truthful valued existence. In the Indo-European tree, *Asti* is connected to the word 'esteem' (or a softer replacement of another closely related popular word namely self-esteem). *Asti* is quintessence of the valued self, which is tantamount to self-esteem.

In Old French, it is *estime* (noun), *estimer* (verb), and from Latin *aestimare* 'to estimate'. The essential meaning again is associated to set a high existential value which can be best estimated. It also means to regard a presence with respect or reverence, by virtue of the value of absolute existence and its positional existence, both. The key words here are acquired value and a degree of respect that is attached to that value. The two are inter-related and they represent the foundations of any sustained civil society. The ancient Aryan Society as preached by the Aryan Seers is precisely that.

The Sanskrit Etymon is from root *As*, leading to the word *Asti* meaning existential essence and consequent truthful foundation. The opposite is *Nasti* (which is *Na Asti*), meaning non-existence. *Swasti* is the benign (based on pre-fix *Shu*, which means good, significant and benign) forwarding of valued existence and the essential self-sustained truthfulness that is embedded within and gradually manifested without. Hence, Swastika is a DYNAMIC EQUILIBRIUM.

When *Swasti* is dynamic, procedural and validated over time, it is *Swati + Ayan = Swastayan*, leading to something that holds the key to sustainability as an evolutionary

paradigm. In the present context, one may discover an Indo-European root / the etymon of the word 'Sustain' in a Sanskrit word *Swastayan*. Thus the two words peace (word is 'sanity') and sustainability may be taken as a binary one and the two are also somehow deeply rooted in the two corresponding words, *Santi* and *Swastayan*. As movement of *Swastik* is facilitated, it becomes a continuous, dynamic and value added evolution and progress of the human mind. It is just not a cyclic progress but also a movement and growth of the truthful existence which builds step by step, quadrant by quadrant, felly by felly and level by level (from the lower levels of truth to the levels which are higher and even higher). The movement is a pattern of the Swastika. A dynamic pattern of *Swastik* itself represents the solar world as envisioned by the Vedic seers. Thus *Swastik* in the Vedic parable is also Aditya, akin to Whitsuntide of the Semitic tradition. The tradition of the Great Bear (*Saptarshi Mandala*) revolving around the Pole Star (*Dhruva Padam*) is both a Vedic and a Freemasonry ideogram. It represents death and resurrection, the basis of the Crucifix having deep nature, pagan and shamanistic origins across Asia. Within the two the most ancient roots that are ancient, natural, shamanistic and pagan, the universal principle of sustainability may therefore be recovered. Fortunately, the Vedic roots are the same!

not known to us, though the highest primacy and recurrence of Swastika are evident in the oldest cosmic world Literature, the Vedas. The Rig Veda alone has over a 100 references to the symbol of cosmic rebirths and renewals getting reflected on the illumined mind of a Sage, the Rishi, who is the '*Mantra-drashta*': the seer of the Divine all-embracing Word of God! As said before, the Rig Veda (1.89.6) forwards the benign turning of the wheel in the four quadrants of Indra the Elder; Pushan the fosterer of universal growth; Arishtinemy, the epitome of sophistication; and Vrihaspati as the Lord of the Vast:

ॐ भद्रं कर्णेभिः शृणुयाम देवाः ॥ भद्रं पश्येमाक्षभिर्यजत्राः ॥
स्थिरैरङ्गैस्सुहृद्वाग्मस्तनुभिः ॥ व्यजेम देवद्विं यदायुः ॥
स्वस्ति न इन्द्रो वृद्धश्रवाः ॥ स्वस्ति नः पूषा विश्ववेदाः ॥
स्वस्ति नस्तार्क्ष्यो अग्निनेमिः ॥ स्वस्ति नो बृहस्पतिर्दधातु ॥
ॐ ज्ञानिः ज्ञानिः ज्ञानिः ॥

It is mind-boggling to see the evolution of Swastika in central and west Asian countries comprising of Russia, Georgia, Armenia, Turkey, Cyprus, Syria, Jordan, Lebanon, Iraq, Saudi Arabia, Yemen, Oman, Iran, Turkmenistan, Uzbekistan and Kazakhstan.

Although the most primitive Swastika (known as Fylfot in Western Europe) till date has been found in the Balkan region, which is modern day Ukraine, the dominant discourse states the spread of Swastika through a migration of settlements pattern from Asia Minor to the Mediterranean region and further West and North-West of Europe. The ancient relationship between antique Persian Civilization and Vedic Sages is through Prophet Zarathustra, who was an *Atharvan* and the evidence often dates to 9000 BCE as per the earliest Greek philosophers like Plato and

Diocletes. It may be so that the eastern Balkan Swastika, which had been an extension of Khorasan (Iran) and Cochis (Georgia and Iberian Caucasus) to lands further westbound, could be drawing distant inspirations in these times of antiquity. New archaeological explorations along the ancient trans-Caucasian land route may yield startling results in the near future. SandHI awaits that prospect! Despite vagaries in manifestations, Swastika presents an enigmatic thread, which is scientifically balanced, culturally measured and socially intended, a SandHI exploration says, in the present book.

Finally, it is scintillating to see that Swastika influenced even the cultures and civilizations of the Maya Civilization, Hopewell Culture, Hopi Culture, Navajo Culture, Aztec Culture, Inca Culture in the Americas. How did it happen? Can it be ascribed to argument one or argument two, presented in the retrospect. Beyond that there is also the relevance of Swastika that might have swept the Pacific region in areas like the Alaska, Hawaii, Fiji, French Polynesia, Easter Island, New Zealand and they may bear a deeper Tatar-Mongoloid connection across the two continents.

Principle of sustainability

Why and how, across many periods, did so many diverse cultures sustain the usage of the same ideogram and ostensibly with the similar meaning? Swastika is one of the oldest symbol recognized to the human race and has been in continuous application in one form or the other across the globe. The highly auspicious symbol is derived from the Vedic Dharma, the oldest way of life (Eridos, 2009). The reason for the sustenance of Swastika over the centuries is not only cultural but also has scientific dimensions and consistency with the universal concept of humanity and spirituality. Moreover, geometrically Swastika represents unchanging, endless, and multi-directional nature of God as turning it around its centre does not make any physical or geometrical change and portrays eternity (Padhya, 2005).

Its arms denote the unintended way to reach the Divinity through intuition and not by intellect and reflect that the path is often not straight, but takes unanticipated turns. The inevitable sustainability of the symbol is also attributed to its coherence with the set of five core Sustainability Principles – the spiritual domain (attitudinal orientation and basis for universal code of ethics), social domain (cultural and social connections), domain of life (bio-spherical conduct), economic domain (fortune and auspiciousness), and material domain (regulating the flow of energy) (Ben-Eli, 2005). Swastika is truly a ‘living’ ideogram and much more than a symbol.

Semantics behind the ideogram

The Penguin Dictionary of Symbols (1982) says:

‘One of the oldest symbols in existence is the Swastika, and it is one of the most widely spread, from furthest east to Central America, via Mongolia, India, and Northern Europe. It was well-known to Celts and Etruscans and to Ancient Greece, so that the so-called Greek key pattern derives from it. Some writers have tried to take it back to Atlantis, which shows its great antiquity.’

The legend of Atlantis is based on the word *Atl*, which is an Indo-European word, means water or some great depths that are abysmal and chthonic. From the words *Patale* prevalent in Indian and archaic Greek Orphic literature, the etymological origins of various geographic regions can be traced: Anatolia (modern day Turkey), Atalia (modern Italy), and the Atlas Mountains (modern Morocco and Tunisia) along North West African coast to a multitude of Mesoamerican words are to name a few. They all end with the same suffix *atl* and with that the Atlantic myth perhaps gets only strengthened. Perhaps, an extended civilization from the Himalayas, the highest point, to depths in the Atlantic and the Pacific is the clue. But here is another clue. There is a group of people who interconnects the ancient world through their sea-faring lands. Known as the Phoenicians, they had originated in the eastern Persian Gulf as per Historian Herodotus.

Cross-cutting so many cultures, Swastika has ramified into a plethora of depicted meanings, what we call ideograms. This multitude of references has come in vogue from the 1850s, certainly so used by D'Alviella (1894) where a

variant of the term of ‘*Sauvastika*’ is used to classify the geometrical form of symbols in Liungman, Carl G., *Symbols: Encyclopedia of Western Signs and Ideograms*.

Swastika forwards an ancient ideogram, signs of which have been found in the Euphrates-Tigris Valley, and in some areas of the Indus valley, dating back 5000 years; it became commonly used around 1000 BCE, possibly first in ancient Troy, in the northwest of modern Turkey.

Throughout a passage of many centuries, Swastika has emerged as an ideogram or an ideograph (from Greek word “idea” and the word “gram” to write). It has emerged as a graphic symbol that represents an idea of cosmic renewals, ecological sustainability and human progressive recurrence traversing different levels. The 9 explorations presented in the book have portrayed ideograms that convey the deep pictorial resemblance to a plethora of physical reality that Swastika has strengthened with significance and auspiciousness.

Ancient ethos revisited

In the Rig Veda, perhaps the oldest document on cosmological literature of the world, *Swastika* has featured a 100 times. It is the highest frequency of an intellectual recurrence establishing both the primacy of the symbol and its inherent pattern in the land and the documentation of the Aryan Sages of

Aryabhata, which is India. Here are a few among many:

- 1 In the Rig Veda: 3.30.16, it stands for the Cruciform of the Thunderbolt, analogous to the Greek Cross. The description recurs in Rig Veda 3.58 (see Figure 1).

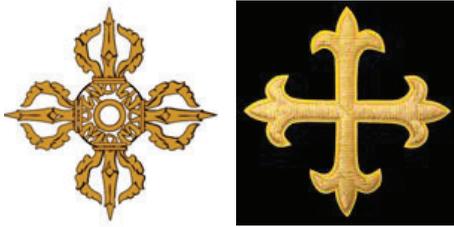


Figure 1: Four armed Buddhist Vajra and Greek Cross Fleury

2 In the Rig Veda 4.53.3-4, Swastika is evident in the quadrantile anthropic form, where the power of the Sun becomes the power of the seer, with arms extending eastbound, westbound, northbound and southbound, embracing the four cardinals and all space. It is analogous to the universal body of the Christ, another sacred document composed a few thousand years later. A near description is evident in the Rig Veda 2.28.2 and 6.71.1. The quadrantile space has been made evident in the ancient Persian literature emulating the cross-like Garden of the Eden called the Chahar bagh (say, the Taj Mahal – see Figure 2).

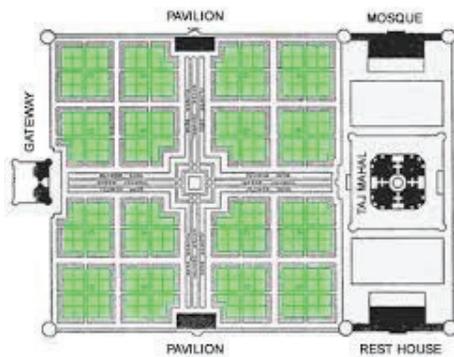


Figure 2: Four armed Chahar-Bagh, a tradition from Persian Architecture to later Islamic forms (Taj)

3 The power of the Sun is *Savita* (*Savitri*) in the Vedic Cosmogony. Its all-embracing cardinal manifestation is evident in the syllable '*Savita Sarbatati*', which means the divine rays of the Sun (*Savita*) which is both a Creatrix (Left hand or the ramification of Tantra) and a Reconciler (Right hand or path of Yoga). '*Savita Sarbatati*' is all embracing cardinal, a pervasive space realized by the Seer (*Rishi*) and

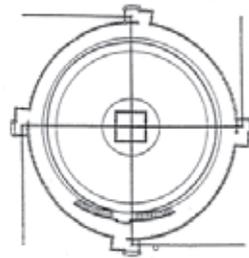
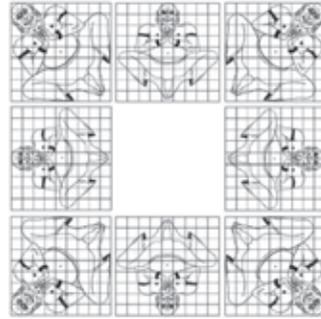


Figure 3: Swastika in Mandala; in the footprints of the Sanchi Stupa and the Ashokan Pillar

manifested as a Seer-realization (*Dharana*). The pattern brings forth the highest dynamism between spiritual harmony and physical space, which is *Swasti* evident in the explanation by R. Guenon in Penguin Dictionary of Symbols. The references are evident in the Rig Veda 3.54.11, 1.94.15; 6.15.18 and 6.56.6; and 9.96.4. A powerful rendition of the idea is also evident in the *Dasam Mandala* of the Rig Veda: 10.36.14. In here the four cardinal directions i.e., *Issan, Vayu or Maruti, Nairit* and *Agni* are all evident. It constitutes the framework of the *Vastu Purusha Mandala*, the Buddhist Stupa Footprint and the Ashokan Pillar (see Figure 3). Circulation around a wheel, formation of the apsidal (a crescent network) of either a Buddhist Chaitya Hall or a Christian basilica representing peace and cosmic harmony. What is the underlying tie? It is Swastika.

4 Seer Lush (Rig Veda 10.35.all) describes the cyclic movement of the all benign Agni which he terms *Swastagni*. The whole sutra portrays the movement of the Sun (*Aditya*) holding the wheel of

Cosmic causation and law, which is *dhamma* portraying what is right and what is auspicious for all humanity. Sage *Vasistha*, a representative guardian sage from the array of the celestial seven sages, presents the recurrence of cosmic sustainability (Rig Veda: 7.97-101). That is the Aryan way and that has shaped the course of cultures around the world (see Figure 4).



Figure 4: The Aryan Ideogram recurs everywhere: Phoenician seal; Sumerian pottery; Indus Valley

Contemporary relevance

The present book has arrived at a single symbol that alone can trace the very antiquity of Indian history, its Vedas and the age of the Aryan Sages mentioned in the oldest of all texts. It has been able to trace a common pattern to link and network the ribbon of world

civilizations, much of which the world owes to India. It also forwards a scientific basis that cross-cuts the latest of scientific concepts like Sustainability and Life Cycle renewals in contemporary evolutionary, environmental and the ecological sciences.

Today a large pool of faculty, scholars and summer interns of 2016 has converged to answer these aforesaid dimensions exploring a recovery of one Symbol – 'The Swastika'. A team of 50 interns from various IITs, NITs, CEPT (Ahmedabad), SPA (Bhopal and Delhi), Jadavpur University, Kolkata and many others have joined the Science and Heritage Initiative (SandHI), IIT Kharagpur to research and display the answers through an Exhibition in the Indian Council for Cultural Relations, Kolkata on July 8 – 10, 2016. The present book is a sustained testimony to the effort.

When Gautama the Buddha had come to Varanasi, by re-establishing the 'the Wheel of Cosmic Causation', he brought forward the lost Swastika, one of the most ancient symbols of the world. The architectonic footprint of the Sanchi Stupa is the testimony (see Figure 3). From the iconography of ancient Varanasi, to the spiral formations and cyclic patterns of the modern City of Auroville offered by the first generation followers of Sri Aurobindo and Mira Alfassa, IIT Scholars today are tracing the codes and patterns of DNA and even Chromosomes, underlying all – life, evolution, and sustainability (see Figure 5)



Figure 5: From re-turning the Wheel of law in Sarnath, Varanasi to the layout of Auroville, Pondicherry

Swastika or at times, Svastika, can be seen everywhere. Nicolas Léonard Sadi Carnot, a French Scientist in 1890s traced the ancient order and disorder (entropy) in his second Law of Thermodynamics. Known as the Carnot's

Cycle today, inspiring all contemporary generations of scientists and engineers around the world working on everything from Heat Engines to Flywheels as Large renewable Energy systems, the four stage pattern of the Swastika is evident in the four stage energy system. Every branch of Swastika is a force and it is equal and opposite of the other one exactly opposite to it. In the language of science it is called a Torque, which is also an ancient Indo-European and Celtic pattern of embroidery and Jewelry (see Figure 6).

In natural sciences, the patterns recur through the iteration of potential and kinetic energies or Conductance-Inductance in a 4 stage Mechanical Mass-Spring system or a L-C circuit in Electro-Magnetism (see Figure 7). The ancient Vedic wisdom has continuously resurfaced through the pages of modern science and currently in the books of applied science and mathematics.

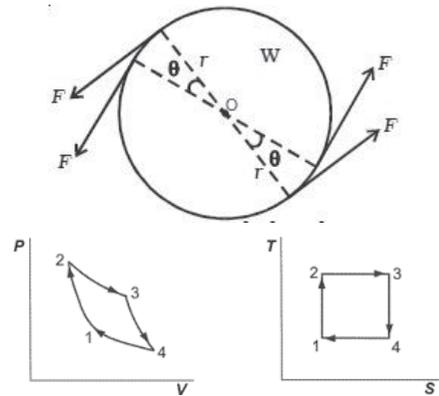


Figure 6: From the Mechanical system of Torques to the 4 stage Carnot's Cycle in Thermodynamics;

The present book has showcased the global advent of Swastika, from the seals and images of the Mayans to that of the Aztecs in ancient America; from the Indus Valley Swastika seals portraying the oldest Vedic

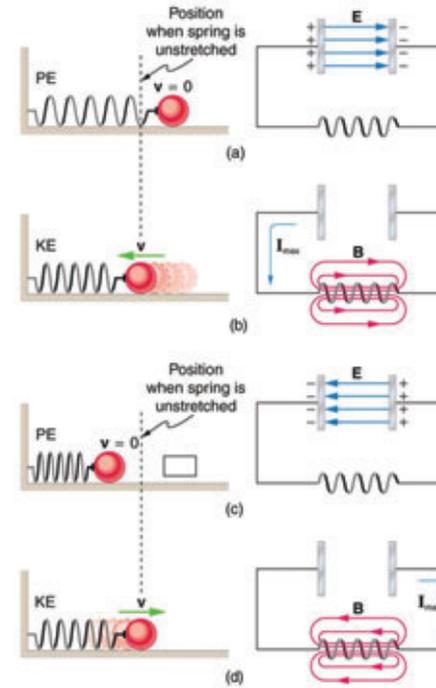


Figure 7: The 1 (origin) + 4 staged (flow) cyclic iterations in an Electro-Magnetic system (LC Circuit) and a Mass-Spring Mechanical system (Potential and Kinetic Energy iterations)

genre of cosmic order and renewals to the patterns of Science today. Swastika portrays changes in both the small and the large, what we may call the microcosm and the macrocosm. It constitutes the binary idea that had reached the Mediterranean world influencing great minds like Plato and Pythagoras and even antique Greece and Italy, a few thousand years prior to the image of the Christ on the Cross.

The book has portrayed a journey of the Swastika from the East to the West, from the Asia Pacific to the Atlantic, bringing forth an oldest recurring pattern that had even inspired Schopenhauer, Friedrich Nietzsche and their ideal progeny, Adolf Hitler. Hitler particularly

promoted an inverted agenda of anti-Semitic exploitation using the Swastika symbol evident in ancient Europe. Hitler created the story of a Super Teutonic race on a falsified Aryan Invasion Myth that led to seven years of terror, havoc and extermination known as the horrors of the Second World War. The 1935-42 German aggression represented something that is exactly opposite to what Swastika truly is. Accordingly, the aggressions in civilized Europe sharply contrasts the sublime and ethereal depictions of the Swastika embedded in the *Srutis* of India and a galaxy of a thousand aspirations of composers from various ages, known as the Vedic seers. Having discovered the supple, the sublime, the higher and the humane, Swastika brings us back to their magnanimity; to their wide open doorsteps unto the universal; and closer to the waves of their chanting - '*Satyam Ritam Brihat*':

– *Satyam* is the Sooth of the Seers and the Sayers of the Word; *ritam* is the rhythm of that Sooth or the realized truth; and *Brihat* is the delightful breadth, the expanse which sustains the interconnected flow of immortal life! The flow is the very soul of Swastika!

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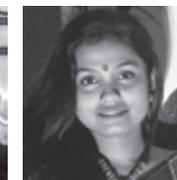
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9 Explorations - SandHI Summer Interns of 2016

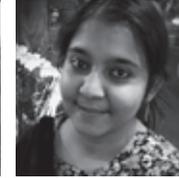
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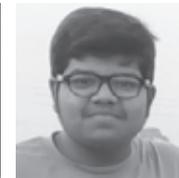
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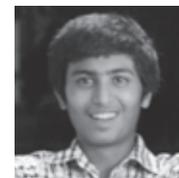
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Within its mystical precincts
lies the master-key which
opens the door of every
science, physical as well as
spiritual. It symbolizes our
human existence, for the
circle of life circumscribes
the four points of the cross,
which represent in
succession birth, life, death,
and IMMORTALITY.



H. P. Blavatsky
The Secret Doctrine, II, 556-7



That ascension has already been effected by the Ancients, the human forefathers, and the spirits of these great Ancestors still assist their offspring; for the new dawns repeat the old and lean forward in light to join the dawns of the future. Kanwa, Kutsa, Atri, Kakshiwana, Gotama, Shunahshepa have become types of certain spiritual victories which tend to be constantly repeated in the experience of humanity. The seven sages, the Angirasas (Ursa Major or the Great bear), are waiting still and always, ready to chant the word, to rend the cavern, to find the lost herds, to recover the hidden Sun....The soul of man is a world full of beings, a kingdom in which armies clash to help or hinder a supreme conquest, a house where the gods are our guests and which the demons strive to possess; the fullness of its energies and wideness of its being make a seat of sacrifice spread, arranged and purified for a celestial session.

Such are some of the principal images of the Veda and a very brief and insufficient outline of the teaching of the Forefathers. So understood the Rig Veda ceases to be an obscure, confused and barbarous hymnal; it becomes the high-aspiring Song of Humanity; its chants are episodes of the lyrical epic of the soul in its immortal ascension.

This at least; what more there may be in the Veda of ancient science, lost knowledge, old psycho-physical tradition remains yet to be discovered.



Sri Aurobindo
The Secret of the Veda



The Vedic sacrificial altar was the origin of Geometry. The invocation of the Devas, or bright ones, was the basis of worship. The idea is that one invoked is helped and helps. Hymns are not only words of praise but words of power, being pronounced with the right attitude of mind. Heaven are only other states of existence with added senses and heightened powers.

All higher bodies also are subject to disintegration as is the physical. Death comes to all forms of bodies in this and other lives. Devas are also mortal and can only give enjoyment. Behind all Devas there is the Unit Being—god, as behind this body there is something higher that feels and sees.

The powers of creation, preservation, and destruction of the Universe, and the attributes, such as omnipresence, omniscience, and omnipotence, make God of gods. "Hear ye children of Immortality! Hear ye Devas who live in higher spheres!" (Shvetashvatara, II.5). "I have found out a ray beyond all darkness, beyond all doubt. I have found the Ancient One" (ibid. III.8).

The way to this is contained in the Upanishads,



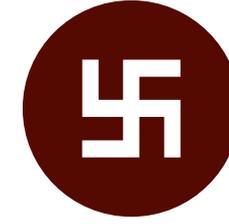
Swami Vivekananda
Thoughts on the Vedas and Upanishads



Considering this kind of creative process in analogy to that of the Rishi taking place in the mind of the Sthapaka (Architect or built-environmentalist), it will be clear that his vision was safely based on metaphysical conceptions, supported by continuous references to sacred scriptures and the effort to understand their esoteric meaning. This was not a simple intellectual acceptance or adherence (as known to our current system of degree and book-based education). The ancient artist had a deep feeling of being himself an integrated part of the cosmos and of participating in all its categories and elements, a feeling acquired by innumerable generations in uncounted centuries of meditative experience.



Alice Boner
Vastu-sutra Upanishad



In course of time the slow advance of knowledge, which has dispelled so many cherished illusions, convinced the more thoughtful portion of mankind that the alternation of summer and winter, of spring and autumn, were not merely the result of their own magical rites, but that some deeper cause, some mightier power, was at work behind the shifting scenes of nature.....and as they now explained the fluctuations of growth and decay, of reproduction and dissolution, by the marriage, the death, and the rebirth or revival of the Gods, their religious or magical dramas turned in 'great measures of these themes. They set forth the fruitful union of the powers of fertility, the sad 'Death' of one at least of the divine partners, and his joyful 'Resurrection'...the resemblance of these ceremonies to the Indian and European ceremonies which I have described elsewhere is obvious.....His affinity with vegetation comes out at once in the common story of his birth.

.....the story that Adonis spent half, or according to others a third, of the year in the lower world and the rest of it in the upper world, is explained most simply and naturally by supposing that he represented vegetation (the corn) which lies buried in the earth (the tomb) one half (or one-third the year) and reappears above ground the other half (or two-third). Adonis has been taken for the Sun (or Mithras).....moreover, the explanation is countenanced by a considerable body of opinion amongst the ancients themselves, who again and again interpreted the dying and reviving God as the reaped (separated from body or earth) and sprouting (conjoined again to rain-fertilized body or earth) grain.



Sir James G. Frazer
Fellow of Trinity College, Cambridge
Chapters one and nine, 'Adonis: A study in the History of Oriental Religions'
Watts & Co (London)

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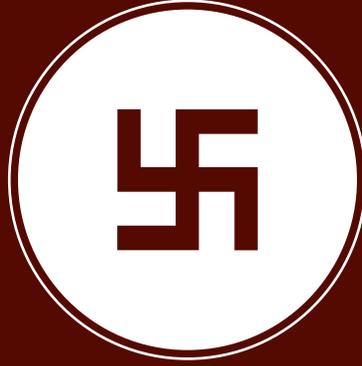
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