

The Triangle, Numeral 3, and the Trinity

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Abstract: *In history of human civilisation, throughout the world, the power of a triangle, numeral 3 or the trinity is widely visible. These concepts have been used inter-changeably in different fields of science, philosophy, and religion. The presence of these concepts in socio-economic sphere can also be proved. Following is an analysis of these concepts in mentioned fields.*

KeyWords: Confucius; equilibrium; Keynes; Ma'at; pyramids

JEL Classification: B0, N0

Introduction

From the earliest days of inception of the human civilization, throughout the world, in unconscious minds of the people, a consciousness for tringle¹, numeral 3², and the trinity³ (which is an assembly of the three, representing unity into one), had existed. The content and their significance of these intriguing symbols have been used inter-changeably.

For over three hundred years, archaeologists, mathematicians, crime scene examiners, historians, religious philosophers, Egyptologists, medical doctors and some scholars in allied fields, have taken keen interest in studying and understanding these very symbols, as a key to the integrity and interdependence of overall existence in mega-structures, and socio-economic life of the people. The evidence of the very fact is widely available.

Triangle is a geometrical shape and had been in use for millenniums. Three popular types of triangle (*equilateral*, *isosceles* and *scalene*), have commonly been used. All these types of triangles have different properties. Triangle has been often quoted in human history, and has been widely used in geometry, religion, philosophy, architecture, and economics.

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Numerical 3, had been a part of the ancient world and it has refused to succumb to the ravages of time. It was always considered an important number in history. How so? Because, the meaning behind the numbers had deeply been significant. Pythagoras considered number 3 as “a perfect number, representing *harmony, wisdom, and understanding*”. In Holy Bible also, the number conveys the concept of *completeness*. In ancient Hindu worship of the *Supreme One*, it had a significance. Evidently, as history suggests, the ancients truly believed in the mystical powers of the number due to the concept behind it. While its role in geometrical balance attracted the architects and designers, in numerology, where number 1 represented force, 2 the opening, 3 the *awakening of wisdom*. Since, number 3 is the union of 1 and 2, it has been considered as an important number.

The concept of trinity is widely recognized in most ancient religious beliefs. The word *trinity* is a term frequently used in the Christian doctrine of the trinity (*trinitas, trinus (threefold), and triad*) which defines one God existing in three co-equal, co-eternal, and consubstantial divine persons: God the Father, God the Son (Jesus Christ) and God – the Holy Spirit. Three distinct persons sharing one essence. History, religion, and economics of civilizations indisputably proves that the phenomenon of trinity had always existed, and the concepts of 3 ideas and actors had always played their role in human daily life. The fact that trinity is fairly strong even in the 21st century can easily be proved by evidence and examples.

This brief note, tries to elaborate some of the details of this fact in mentioned fields. The author has tried to examine in brief the mish-mash of symbolism, myths, religious faiths, architectures and the socio-economic life of the people through history. Furthermore, the author has also tried to provide his own interpretation of the *holy trinity* in socio economic life, which to him seems purely *unholy*⁴.

Triangle in Geometry

Originally, in geometry, the triangle was invented in Egypt, sometimes, between 3000-2000 BC. The reason that in Egyptian mythology triangle was such a powerful symbol is that it represented a harmony and balance. When the three sides are balanced, as in an equilateral triangle, it creates harmony. Any loss of balance is a condition of necessary change or evolution that needs to take place. In fact, Greek philosopher Pythagoras (Πυθαγόρας cca 570 – 495 BC), invented the well-known mathematical interpretation for a triangle⁵, known as his theorem. Among the three sides of a right angle, it is also a fundamental relation in Euclidean geometry⁶. It states that the area of the square whose side is the hypotenuse (the side opposite the right angle) is equal to the sum of the areas of the squares on the other two sides. This theorem is often called as the Pythagorean equation, and is an equation. It relates the lengths of the legs a , b and the hypotenuse c . It can be written as:

$$a^2 + b^2 = c^2$$

Although, the theorem is attributed to Pythagoras in classical antiquity, there is evidence that aspects of the theorem were known even in earlier cultures. The theorem has been proved numerous times by many different methods – possibly the most for any mathematical theorem⁷. The proofs are diverse, including both geometric and algebraic, with some dating back thousands of years.

It should be noted that from arithmetic and geometrical point of view, according to the *laws of forces*⁸, an equilibrium is always established. Accordingly, from a theoretical point of view, in space, a triangle should float in perfect balance i.e. in perfect equilibrium. However, a pressure on any of its angles will tilt it on one side.

The state of development of a civilization (or a country), in any time period, is primarily dictated by its economic conditions, i.e. its economic growth, economic stability, employment, its gross national product (GNP), etc. Naturally, the role of political leaders, exercising their policies affect these factors that dictate the state of economic and political affairs.

History is a proof that socio-economic conditions are never in equilibrium, and tend to tilt the socio-economic system in a particular direction (side). Since, the basic objectives of economic policy are: economic growth, full employment, stable prices, and social welfare, it is important to maintain a balance, through a set of intervention policy measures. In practice, these sets may consist administrative/authoritative, monetary, and fiscal measures⁹. Thus, from a historic, social, philosophical, religious, and cultural standpoint a *socio-economic triangle* would require to be in a state of equilibrium. Unforeseen circumstances e.g. war, political turmoil, famine, natural disasters, etc., would, usually tilt its balance. However, throughout history, it has been proved that with a lapse of time and with an adequate government intervention, the equilibrium has always been re-established.

It should be noted that in 21st century, world-wide, the role of economic policies has become far more important than ever, because of the necessity of maintaining a balance between growth, employment and prices, for these being the dominant objectives, in focus of policy options. It is essential that an equilibrium between the mentioned targets of economic policy is maintained. Empirical analyses, show that a triangular equilibrium can exist and that the governments can follow a policy of close monitoring of the behaviour of the policy variables and support the *optimum* rate through active interventions.

Triangle in History

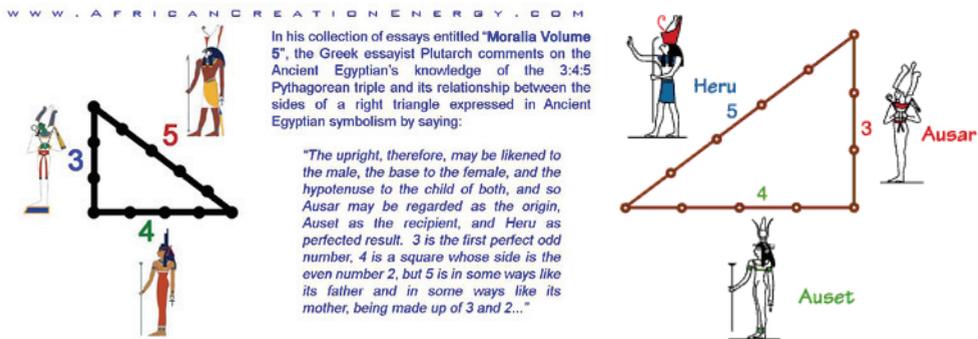
Ancient Egyptian civilisation followed prehistoric Egypt (cca 5100 BC) and coalesced c. 3100 BC. The history of ancient Egypt is characterised by a series of stable

kingdoms separated by periods of relative instability. Few periods of ancient history sum up in a mathematical precision in quite as dramatic a fashion as ancient Egyptian record of 31 Dynasties. Their history is well reflected in their wall paintings, papyrus scrolls, hieroglyphics¹⁰, cartouches¹¹, and the mega structures (e.g. Giza pyramids and Sphinx – are unrivalled example of Egyptian ability to represent the natural form within a geometric methodology).

Egypt reached the pinnacle of its power in the New Kingdom, ruling much of Nubia and a sizable portion of the Near East, after which it entered into a period of slow decline. During the course of its history Egypt was invaded or conquered by a number of foreign powers, including the Hyksos, the Libyans, the Nubians, the Assyrians, the Achaemenes Persians, and the Macedonians (under the command of Alexander the Great). The Greek Ptolemaic Kingdom, formed in the aftermath of Alexander's death, ruled Egypt until 30 BC, when, under Cleopatra, it fell to the Roman Empire and was reduced to a Roman province.

The Pyramids were, basically, built as tombs for pharaohs, with a large base in contact with the ground and the tip of the structure pointing towards the sky and the Sun. The largest famous Giza Pyramid is built on a quadrant structure. It was built during the reign of Khufu (Cheops, 2589-2566 BC). It has been seen as representing an ending for the physical body but a new beginning for the spirit as it could rise up into the sky to be closer to *Ra* — the Sun God. The pharaoh was considered as the heir of Sun God¹².

Figure 1: The Plutarch's Egyptian Triangle I and II



Source: Egyptian Triangle – The Book of Threes, bookofthrees.com

The grand pyramids of Giza, also features number 4 in the form of its triangular faces. This is part of the complex numerology of the pyramids, the various mathematical elements of that represent the Pythagorean concept of all universal rhythms being modelled from the triangle (three), the square (four), and the pentagon¹³.

Although, the pyramidal *quad* shape was adapted, partly for practical reasons since the distribution of weight in a pyramid allowed ancient civilizations to construct great monumental architectures. The shape of the structure also has a symbolic meaning. However, in Amarna, in the ruins of capital city Akhenaton, one can find some miniature (triangular base) pyramids also. These triangle-based pyramids were, probably, constructed during the reign of Pharaoh Akhenaten (r. 1353-1336 BC) of 18th Dynasty of the New Kingdom of Egypt, or even, after his fall.

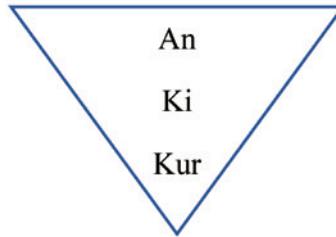
The power of the triangle had become quite important amongst ancient alchemists, and it was later embraced by medieval architects. The natural ease with which a triangle can be divided into parts whilst still remaining a whole, proved an attractive idea for those who were aiming to explore the fundamental harmony of biological life (See, *Figure 13*). For instance, the Egyptian Alchemical Triangle had three, four, and five divisions for the Father, Mother, and Son sides respectively¹⁴.

Again, these triangles are closely related to Egyptian mythology. The three divisions on the *Ausar* side represented the three vital principles that formed the known world (salt, sulphur, and mercury), a vital part of the process of the *Spirit* manifesting as *Matter*. The shortest side of the Pythagorean triangle known as *Ausar* corresponds to the Father, the longer side known as *Auset* corresponds to the Mother, and the hypotenuse called *Heru* is the son (See, *Figure 1*).

The Egyptian wall painting, *Enduring Threes: Weighing of the Heart* (See, *Figure 13*), and the Egyptian *Eye of the Providence* (See, *Figure 16*), respectively, do prove the significance of a triangle.

Mesopotamia is an ancient historic region of Western Asia located within the Tigris-Euphrates river system. The Assyrians, Babylonians and Sumerians dominated Mesopotamia from cca 3100 BC until the fall of Babylon in 539 BC. Assyria was a major ancient Mesopotamian civilization which existed first as a city state, then as a territorial state, and eventually as an empire (from cca 2500 BC to the 7th century BC). While King Hammurabi founded the short-lived empire in the 18th century BC, Babylon being the major city eclipsed Nippur as the region's holy city. The Sumerian civilization took form in Uruk in 4th millennium BC. It was conquered by the kings of the Akkadian Empire around 2270 BC. Native Sumerian rule re-emerged for about a century in the 3rd dynasty of Ur in 2100 BC with Eridu being one of the oldest cities of the world. In the late 4th millennium BC, Sumer was divided into many independent city states. In 2004 BC, the Elamites stormed Ur and took control. Elamites were eventually absorbed into Amorite culture, becoming the Babylonians and marking the end of the Sumerians as a distinct body from the rest of Mesopotamia.

Figure 2: The Inverted Assyrian Triangle (Nabla)



Source: Drawn by the author

Mesopotamians, inspired by the popularity of Harp (an inverted triangular shaped musical instrument), have been using an inverted triangle symbol named after it, as *Nabla*, to show the hierarchy of social order (See, Figure 2), in which (*An*) represented the kings and military commanders; (*Ki*) embraced the priests, farmers and craftsmen; and (*Kur*) the slaves (*Narrated in "Nabla Symbol, 2600-2025 BC"*).

The Nubian (Sudanese) civilization is said to have existed since cca 2500 BC. The region of Nubia was an early cradle of civilization, producing several complex societies that engaged in trade and industry. The Nubian city-state of Kerma emerged as the dominant political force (between 2450 and 1450 BC), controlling the Nile Valley. The monarch of Kushites, Piye (744-714 BC), established the 25th Egyptian dynasty that ruled Egypt for over a century until the Assyrian conquest. Finally, it was expelled by the Egyptians in the mid-seventh century BC.

The pyramids of Nubia are less famous than their counterparts in Egypt. These small *quad* based pyramids have been preserved for over 5000 years old now. These pyramids were designed as tombs. The city of Meroe served as the capital city of Kingdom of Kush, the realm that presided over the kingdom. The Nubian-style pyramids emulated a form of Egyptian private elite family pyramid that were common during the New Kingdom. Nubian kings built their own pyramids. These were built of granite and sandstone. Today, there are twice as many Nubian pyramids, as there are Egyptian, still standing.

In **Ancient Greece**, the *isosceles* triangle is formed in the *Temple of Poseidon* at Sounio, the *Temple of Aphaia* at Aegina, the *Temple of Hephaestus* at Thissio of Athens, and the *Temple of Apollo* at Delphi.

Aristotle and Strabo, both, admit that the construction of these sanctuaries was not accidental but was followed by an internal regulation with its own occult methodology, though both seem reluctant to reveal the details of this divine analogy.

Aside from *triglyphs*¹⁵, the Greeks used number 3 frequently. For example, there were the three *Fates*, three *Graces*, three *Gorgons* and the three *Furies*. Even Apollo's Pythia sat on a three-legged chair (tripod), and Cerberus was a three headed dog; and the similar. Multiples of 3 also seemed to be used such as the 9 Muses and the 12 Olympian gods. The number is also found in triangles throughout ancient Greek

architecture. Perhaps the most overt three in Ancient Greek architecture is the triangle on the front and back of the *Parthenon* (See, *Figure 15*) in Athens. Known as *pediments*¹⁶, these triangles are considered to contain some of the finest examples of Doric sculpture, and the images of the most important moments in the lives of the Olympic triad.

Ancient Rome began as an Italic settlement, traditionally dated to 753 BC, beside the river Tiber in the Italian Peninsula. The settlement grew into a city and polity of Rome, and came to control its neighbours through a combination of treaties and military strength. It eventually dominated the Italian peninsula, and acquired an Empire that took in much of Europe and the lands and peoples surrounding the Mediterranean Sea. It was among the largest empires in the ancient world. Unfortunately, plagued by internal instability and attacked by various migrating peoples, the western part of the empire broke-up into an independent barbarian kingdom in the 5th century. The eastern part of the empire remained a power through the middle Ages until its fall in 1453 AD.

Throughout the empire, in public building's construction, *pediments* (gables), usually of a triangular shape, have been placed above the horizontal structure of the lintel, or entablature, if supported by columns. A pediment is sometimes the top element of a portico. For symmetric designs, it provides a centre point and is often used to add grandness to entrances. Note, that the *tympanum* is a triangular area within the pediment, which is often decorated with a sculpture that may be freestanding, or, sometimes, even a relief sculpture. The tympanum, usually, held some inscriptions.

The **Ancient Chinese** triangles, known as *feng shui* (literally meaning “wind-water” i.e., fluid), are the triangles that represent upward or forward motion and is the contrary of grounding energy, which means it is not a suitable symbol to have in most places (e.g. in a house). It is, sometimes, called Chinese geomancy, and is an ancient traditional practice which claims to use energy forces to harmonise individuals with their surrounding environment. From ancient times, landscapes and bodies of water were thought to direct the flow of the universal *Qi* – “the cosmic current” or energy – through places and structures. Because it has the same patterns as wind and water, a specialist who understands them, can affect these flows to improve health, wealth, happiness, long life, and family. On the other hand, it's the wrong flow with bad results. Broadly, *feng shui* represents the astronomical, astrological, architectural, cosmological, geographical, and topographical dimensions.

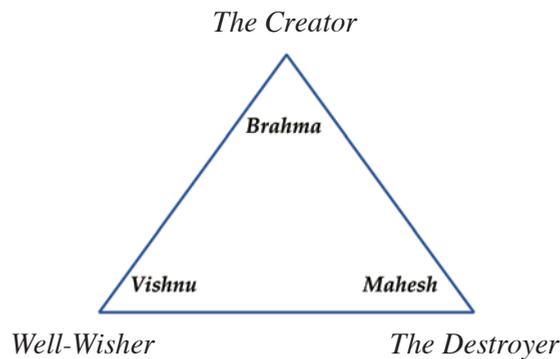
In **Ancient India** triangles have always held a mystical significance and they have been used in charms and amulets. They represent the cycles of life – birth, maturity, and death – and help form a junction between humans and gods. In Indian mythology, the triangles symbolise a great sign of strength.

The Aztecs and Mayans (cca 1000 BC), pyramids are located in the East-Central States of Mexico. *Cholula* pyramid (Puebla) is the largest in the world. These are very similar to the Egyptian pyramids and have served as places of worship with flat tops. The Inka people (1000-1400 AD) used them for various ceremonies.

Triangle in Religion

Among Indian Religions, an irresistible geometry of the triangle has seen the concept to re-appear throughout cultures and religions, making it one of the most recognised symbols in the world. While in Buddhism the three-sided polygon appears as a part of the *Eye of Consciousness* (the so-called *third eye*), and as part of the *Sri Yantra* (geometrical objects) of Hinduism. Equilateral Triangle is part of various *chakras*¹⁷ and *yantras*¹⁸ in Hinduism. It is also widely used in *Tantric* rituals¹⁹.

Figure 3. a: The Hindu Triangle



Source: Drawn by the author

Hindus believe that an equilateral triangle represents the unattainable. It is the symbol of the divine – which can only be realized by a devotee who has shed ignorance. While an inverted equilateral triangle represents *Shakti* (strength), an upward pointing equilateral triangle represents *Shiva*. Creation depends on the union of the two. In Hinduism, the holy trinity is formed by *Brahma* (The Creator), *Vishnu* (The Well-wisher), and *Shiva* (The Destroyer) (See, *Figure 3. b*). The *Anja Chakra* – also known as the *Third Eye* – sits in one's forehead. It is between our eyes and is represented by a triangle. The Third Eye allows oneself, to see beyond the earthly realm to the higher planes of the world of *spirit*. It also allows us to see within our-self, to understand our-self better, and to develop spiritually.

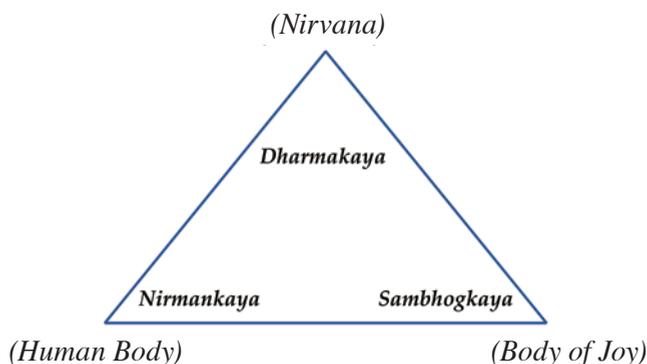
The Hindu trinity, is best illustrated by frequently used symbol – the symbol of *Chintamani* (See *Figure 17*) – in religious and philosophical descriptions, temples, individual homes. The **Hindu trinity** in religious and philosophical descriptions, temples, and individual homes is often depicted by symbol – **Om** (Sans. ॐ, Hindi ओम्).

In **Buddhism**, the triangle represents *trikaya*. Buddha manifests themselves in three bodies (*Trikaya*). These are the *body of essence*, the *body of enjoyment* and the *body of transformation*. The 3 aspects of *refuge* are: The *Buddha*, the *Sangha* and the *Dharma*. While *Dharma* refers to the teachings, lessons and commentaries on

Buddhism; *Sangha* are the group of people who follow the Buddha and his teachings. The 3 realms of existence, according to Buddhism are: the *desire realm*, the *form realm*, and the *formless realm*.

The Buddhist trinity (See, Figure 4. a) is made up of *Amitabh Buddha* (at the Centre), *Mahāsthāmaprāpta* (at the viewer's left), and *Kwan Yin* (at the viewer's right). The trinity is filled with all kinds of symbolic importance. The Chinese *Kwan Yin* is inextricably linked with *Amitabha* (she carries an image of him in her headpiece), and that *Mahāsthāmaprāpta* is one of the great mysteries of Buddhist worship (See, Figure 4. b).

Figure 4. a: The Buddhist Triangle



Source: Drawn by the author

Triangles are commonly found incorporated into Buddhist temples due to their association with number 3, which is seen as being lucky and auspicious. The meaning of triangle connects to the act of ascending into a higher state of mind. It means that one has achieved a significant level of enlightenment, and ones' *well of wisdom* has overflowed. Of course, the quest for answers is unending. It does not matter how enlightened one becomes; there is always more to learn. The triangles better, our soul and place on this planet. Insight makes all the difference, and thus, the triangular shape shows us, how vital those gains are.

According to Buddhism, some even say, that triangles hold spiritual information long after we are gone. Upon death, the shape accompanies us to another realm as we transform into a higher being. The triangle takes our journey with us unto *Nirvana*, ensuring that our experiences on Earth are not lost to ether.

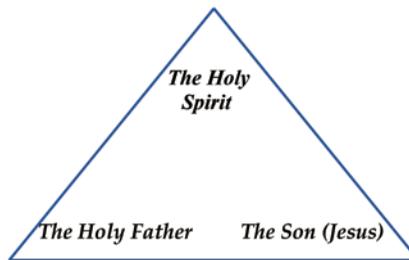
It is worth noting that both Hinduism and Buddhism believe in *Life, Death* and *Resurrection*.

As one of the world's oldest religions, **Jainism**, was established in India around 500 BC by *Mahavira*, though the elements of the religion, are said to have developed far before that. The focal belief is to reach *kevala* – a state of elevated or blissful

existence, comparable to Buddhist *nirvana* or Hindu *moksha* – by way of practicing non-violence. Jainism developed as a contemporary form of Buddhism. Thus, it comes as no surprise that the two religions are laced with strong similarities. One of the most evident of these similarities is the way or path to achieving an elevated state of existence i.e. *The Three Jewels* – these being the *Right Perception*, *Right Knowledge*, and *Right Conduct*.

In **Christianity**, the *triquetra* symbol is sometimes used in a religious context to represent the *trinity* (See, Figures 5. a, and 5. b). The forms of a triquetra often include a circle to emphasize the unity of the three parts of the trinity. It is sometimes called the trinity knot or the trinity circle (when a circle is included) and is most often found in areas of Celtic influence. One of the most famous trinities, in Christian beliefs, is the *Holy Trinity* and represents the Holy Spirit as taking of the things of Christ and making them real and solid in our experience. As an aside, understanding of God as being three divine persons that exist at the same time, sharing the same essence and are all God – but are not the same being. The main feature that makes triangles so important and meaningful in Christianity is the fact that they have three points – *three angles* – and the number three is considered as the number of divine fullness. It is interesting to note that in the story of Jesus' birth, the baby is visited by the *Three Wise Men*. Thus, we see the appearance of the number 3, which is surely no coincidence.

Figure 5. a: The Christian Triangle



Source: Drawn by the author

In Christianity, the *Eye of Providence* (See, Figure 16), is a symbol that is deeply associated with the faith. Triangle is depicted with an eye inside and represents the divine providence – or God keeping watch over humanity. Since the Renaissance times, it has been used in Christian art to depict the Holy Trinity, that reminds the believers that God constantly maintains the natural order of the universe.

In the **Celtic** world also, the triangle is known as the *triquetra*. The symbol is used to represent trinities in the universe (See, Figure 6). The string music instrument *Harp*, which is popular in Celtic society even today, particularly in Ireland, Scotland, and Canada, reflects the inverted triangle shape. In Pre-Christian times,

according to some authors, in Celtic society, the mother-goddess *Lugh* was the most important of all the continental deities. Often continental representations in sculpture and bas-reliefs of goddesses are in triads. Some of the symbolic associations with the Celtic mother-goddess are the cornucopia, fruit, animals seated on her knee, and a child in her arms or next to her.

Little is known about the religious beliefs of the Celts of Gaul. They believed in a life after death, for they buried food, weapons, and ornaments with the dead. The *Druids* – the early Celtic priesthood, taught the doctrine of transmigration of souls and discussed the nature and power of the gods.

As far as is known, the Celts had no temples before the Gallo-Roman period. Their ceremonies took place in forest sanctuaries. In the Gallo-Roman period temples were erected, and the trinity symbol has been found in ancient manuscripts, and sighted stones dating as far back as 1000 AD with carvings of the *triquetra*. This recognizable trinity symbol resembles other Celtic knots. It is believed to date back to 500 BC. Deeply ingrained in the heart and soul of Celtic Christian spirituality is the mystery of one God in three persons, a truth that is taught clearly in the Bible, even though the word *trinity* is not found in the Scriptures. The image of three in one is found frequently in Celtic art and poetry. It including the past, the present and the future. At the time it was used as a symbol of the triple goddess, believed to be maiden, mother, and crone. Over the years, the meaning of the symbol has changed depending upon the group of people that used it. Their ancient goddess *Brigit*, also called *Brigantia (The High One)* in their religion, was the equivalent of the Roman goddess *Minerva* (Greek *Athena*). In Ireland *Brigit* was one of three goddesses of the same name, daughters of *Dagda*, the great god of that country. Her two sisters were connected with healing and with the craft of the smith.

In **Freemasonry**, the old handbooks define the organization as “a peculiar system of morality veiled in allegory and illustrated by symbols,” “a science which is engaged in the search after the divine truth,” and “the activity of closely united men who, employing symbolical forms borrowed principally from the Mason’s trade and architecture, work for the welfare of mankind, striving morally to enable themselves and others and thereby to bring about a universal league of mankind which they aspire to exhibit even now on a small scale”.

A widely known symbol of Freemasonry is the angel with *compass*. Ancient tradition says that the letter *G* placed at the Centre of the symbol, represents God and geometry (See, *Figure 14*). The compass (to draw circles), represents the realm of the spiritual eternity. It is symbolic of the defining and limiting principle, and also of infinite boundaries. The angle measures the *square*, the symbol of earth and the realm of the material. The square represents fairness, balance, stability, giving a foundation for building upon. Together, the compass and square represent the convergence of matter and spirit and the convergence of earthly and spiritual responsibilities. As measuring instruments, the tools represent judgment and discernment.

The *Blazing Star* in Mason Lodges represent Sirius, Anubis, or Mercury – Guardian and Guide of Souls. The Ancient English brethren also considered it an emblem of the Sun. The Blazing Star in the Centre is said to be “an emblem of Divine Providence”, and commemorative of the star which appeared to guide the wise men of the East to the place of our Saviour’s nativity. *All Seeing Eye* in Freemasonry (See, *Figure 14*), evidently, symbolizes the Egyptian *Eye of the Providence* (See, *Figure 16*).

In Freemasonry, although, 3 may appear to be a simple number, a bit useful for a quick mental arithmetic, but in fact, its historical importance remains all around in the form of triangles and triglyphs.

In Speculative Freemasonry, the 47th Problem of Euclid stands for Masons’ importance to *square their square*. In other words, members of the craft are required to align their lives in order. Operative Freemasons also use the symbol to lay out strong foundations in construction²⁰.

Although **Judaism** does not believe in trinity, however, in the Jewish flag, the star consists of two equilateral triangles – i.e. a hexagram (See, *Figure 12. a*). In Hebrew, it is called the *Magen David* (מגן דָּוִד), which means the *Shield of David*. Although, it does not have any religious significance in Judaism, but is one of the symbols that is most commonly associated with the Jewish people. According to some experts, the star symbol represents the unity between *God* and the *real world*. It is worth noting, that top 3 points towards God and the lower ones towards the real world. However, triangles can be found in some pictures (See, *Figure 12. b*). In the middle Ages it became deeply associated with the Jews. In Judaism, the significance of number 3 is evident in three things that are considered important. i.e., *Right Perception* – the process of facing and dispelling doubts about the reality of existence; *Right Knowledge* – the process of learning about the elements of existence and how they function together; and *Right Conduct* – a collection of vows and discipline one undertakes on the path to spiritual liberation. Jews try to observe these three dictums.

In **Islam**, the main theme is *Taqwa*²¹ (God-consciousness) – a theme that has a triangular connection in terms of ethical and moral system. According to the Islamic beliefs, *first*, the God has sent the final revelation – the *Quran* – for the guidance of humankind. Hence, the Quran is the guidance (*Huda*) for humans. It is not merely for accumulating bits of rewards (*thawab*), but for using as comprehensive guidance for human life and for solving the problems in *Aakhirah* – end bound life in this world. That is why the Quran is the guidance, but effectively only for those who are (*Mut-toqoon*) (God-conscious). *Second*, God has not only revealed His expectation about us, but has also informed us about how to fulfil His expectations. It is for this reason that God has not only required a minimum level of *Taqwa*, but has also shown us the way to attain and improve our *Taqwa*. The *third* of the triangular link of ethical/moral system is the special month of Ramadan – the month of fasting. The significance of this link has been clearly identified in Quran.

Triangle in Philosophy

Practically in every ancient civilization, the dominant questions posed in philosophy, had usually been: (i) the existence of God, (ii) I-consciousness, (iii) the matter, the spirit, the self, and the moral values²².

An early Egyptian philosopher Ptahhotep (25th, early 24th century BC), probably the world's first and oldest (for it is said that he started writing at the age of 110 yrs.) philosopher. He is known for his comprehensive work on ethical behaviour and moral philosophy, called *The Maxims of Ptahhotep*.

Egypt was considered by Greek philosophers (Pythagoras, Plato, and Aristotle) as the birth place of wisdom and philosophy. All of them confirm that Egyptians were the “*first to bring to the Greeks all the philosophy*”; that the Egyptian Thoth “*invented numbers, arithmetic... and, letters*”; and that Egypt was “*the original land of wisdom*”.

The principle on which the ancient **Egyptian** moral philosophy was based was also called *Ma'at*²³. *Ma'at* was personified as a goddess. The *feather* was her symbol. She represented the universal order of the Cosmos, the law of life. She personified ancient Egyptian concepts of truth, balance, order, harmony, law, morality, and justice; regulated the stars, seasons, and the actions of mortals and the deities who had brought order from chaos at the moment of creation. Human beings were also subject to this law, i.e. they must learn to live in accordance with the dictates of higher intelligence, what the Greeks called *Nous* and the Egyptians *Ba*. This principle of *Ma'at* resulted in a strong ethics of public service and responsibility, flavoured with an attitude of benevolence.

The Pharaoh played the role of the sun god, the god with the closest links to goddess *Ma'at*, who is at the head of the Sun God's bark as it travels through the sky and the underworld. Although, in its abstract sense, the aspects of kingship and of *Ma'at* were, at times, subjected to criticism and reformulation, however, the principles underlying these two institutions were fundamental to ancient Egyptian life and thought.

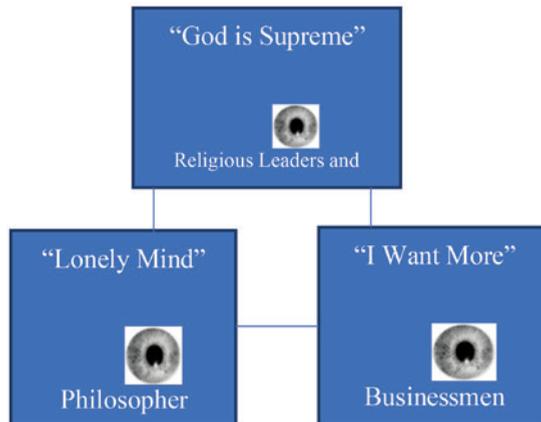
In ancient **Greek** philosophy, the triangle described a simplified form of relationship between the speaker as the *subject*, a concept as an *object* or *referent*, and its designation (*sign*). Plato speaks of a perfect triangle. It would, according to him, be a description of the *Form* or *Idea of Triangle*. Plato says that such *Forms* exist in an abstract state but are independent of minds in their own *realm*. To explain human relationship to the world of the Forms, in his book, *The Republic*, he uses the analogy of people who spend their whole lives living in a cave, who ever see are their shadows on the walls created by their own campfire.

In India, in **Hindu** philosophy the symbols that are used as a mark to faith in God, power and peace. These are *Om*; *Swastika* and *Sri Yantra*. Everywhere, numeral 3, i.e. the trinity is evident.

In three dominant **Chinese** faith systems, i.e. *Confucianism*, *Taoism*, and *Buddhism*, religion and philosophy in their specific dimensions coinciding with each other, exhibits a unity between being inner saint and outer king in human endeavours. These, have been commonly accepted as the mainstay of Chinese culture and their religious and philosophical essentials constitute the main core.

Christian philosophy emerged with the help of Christian revelation, primarily with the aim of reconciling science and faith. It, basically, developed from the ancient Greek philosophy, in the tradition of Judaism, the *Old Testament* and the *Gospel* message. Note that the starting point of Christian philosophy is logic, not excluding its theology, to sort out disputes and sanction the offenders. It should be noted that religious leaders (either the kings themselves or the priests) have tried to establish theocratic states and considered themselves as the representatives of god on earth (e.g. in Egypt, Sumer and Babylon, there were the regional and local gods). Mostly, the priests had declared themselves as the gods, and in reality, they were the kings (moreover, the tradition of kings declaring themselves as gods had continued long). For example, in the 4th century, Roman Emperor Constantine I., 306-337 AD, started appointing the Popes²⁴. During the Holy Roman Empire (539-638 AD), the European Kings participated in the appointment of the Pope. Later, the trend was reversed such that the confirmation of kingships by Pope became mandatory (since 1059 AD)²⁵.

Figure 7: “The Struggle for Dominance” in The so called “holy” Trinity



Source: Drawn by the author

One can assume that in the interest of preserving and smooth functioning of the socio-economic order, both – the philosophers and the priests – have approached these themes scientifically and with reason. Rulers and businessmen have frequently joined them (See, Figure 7). People were supposed to follow the rules. Codes of conduct, courts, and judges were appointed by the rulers.

Forced labour, levies, land or crop ownership, high interest rates, wide spread temple prostitution, and merciless punishments for crimes were not uncommon as instruments of repression. Egyptian, Sumerian, and Chinese history is full of such examples. Naturally, a jumble must have existed in the centre, and all the subjects must have participated in struggle for dominance, at least marginally.

It is also logical to assume that the above-mentioned aspects must have had in focus the common human socio-economic behaviour, and thus easy to further assume, that it should be made mandatory to preserve the moral, ethical and social standards, that were vital for the progress of the societies. To make it possible, the philosophers and rulers, in Christianity and other faiths, must have also sought the help of religious leaders to convince the masses, because they usually have always commanded immense influence and respect among the masses. Thus, moral, ethical, socio-economic and legal issues must have become a fertile breeding ground for promoting the desire for dominance eventually leading to struggle for power.

Triangle in Economics

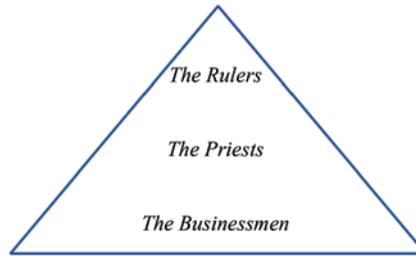
Right from the beginning of civilization, a vital aspect of creative human desire was intensively manifested in modelling objects and inventing solutions for the necessities in the ordinary daily life of people. In this process, usually involved was the primitive or indigenous technology that could easily be called as engineering or science of the time. Because, for the economy to function properly, it is important that policies of the leaders and nations, are conducted properly. Economists concerned themselves with the economic grounds and social role of what they have accepted as knowledge. In ancient times, as a science, Economics did not exist due to the absence of market and competition (in modern sense); lack of transport and communication; limited spread of knowledge, etc. Since, farming, animal husbandry, fishing, hunting and barter were the main activities of most societies, presumably, no sophisticated scientific knowledge was required. Wars of invasion and conquest of territories were a frequent source of accumulation of riches and wealth of nations. Thus, the economics of the time, if at all it existed, was imperialistic and without a human face.

While the **Egyptian** economy for over 3500 years remained a tightly controlled command economy run by public servants and bureaucrats, the Sumerians developed a model of a free economy based on international trade around 3100 BC. They were the first to develop a system of economic rules. **Chinese** philosopher Confucius (551-479 BC) is supposed to be credited for being the first to create some basic economic notions (e.g. national output, high quality labour force through education, the importance of technology for national prosperity etc.), and to write the first compendium of economics²⁶. It is rather easy to imagine that at one time, in all civilizations, in principle, at least theoretically, an ideal cooperative relationship between the three

pillars of economic system – i.e. political system, religious beliefs, and business practices – would have existed.

In **India**, famous philosopher, political strategist Chanakya (also known as *Kautilya*) wrote his *Arthashastra* (tr. a compendium on economics) in 321 BC.

Figure 8: The Holy Trinity in Economics



Source: Drawn by the author

However, in Economics, for long, the triangle was present as trinity of rulers, priests, and business leaders. There had been a close relationship and the political-economic system seem to have worked well²⁷.

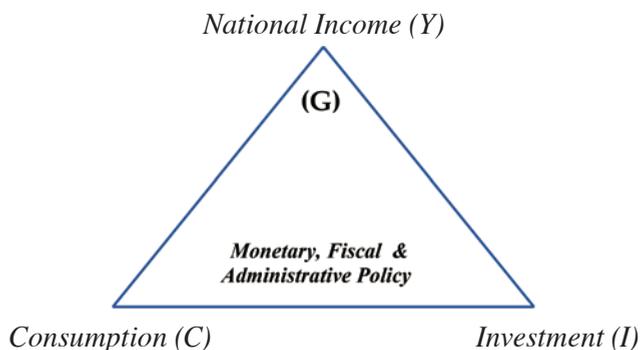
From the late 19th century till this date, economists have learnt to manage the economic system by keeping the triangle forces in equilibrium through an active play of national macro-economic policies (monetary, fiscal, and administrative) implemented by the respective governments.

Keynes (1936), in his *General theory*²⁸, has strongly emphasized the active role of *fiscal* and *monetary* policies to maintain an equilibrium to preserve the level of *full employment*, and maximise economic growth (GDP), through managing consumption and investment expenditures. The Keynesian theory states that Full Employment (E) = National Income (Y) = Consumption (C) + Investment (I) + Govt. Expenditure (G); are managed such that

$$\begin{aligned} C + I + G &= Y \\ Y - C &= I \\ G &= C + I \end{aligned}$$

Although, Keynes does not talk explicitly about the trinity of closely related elements of full employment for reaching an equilibrium; but we can think of such an imaginary triangular relationship that exists in the three fundamental elements: national income (Y), investments (I), and consumption (C). According to him, achieving the level of full employment is the major target of government policies i.e. fiscal, monetary, and administrative policies. This can best be illustrated in a triangular form as above (See, *Figure 9*).

Figure 9: The Keynesian Equilibrium



Source: Drawn by the author

The historical evidence suggests that this trinity did function fairly well for millenniums. Occasionally, the disturbances did crop-up, but the equilibrium was always re-established over time. However, we should not forget that this fundamental harmony that was supposed to exist, was not of a *triad* character, but a *quad* relationship. The fourth pillar, to our mind, was definitely the existence of a spirit to produce. This did involve the then available technology. Since, this fourth pillar ensured the stability of the economic mechanism it must be given its due importance (See, Figures 10 and 11).

Figure 10: The Quad Relationship

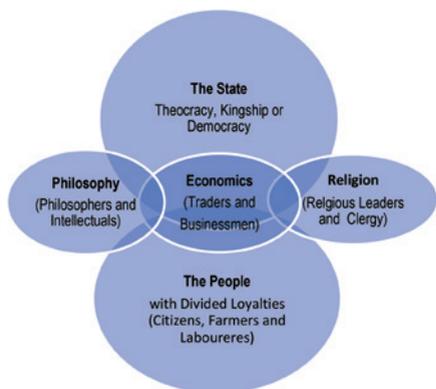
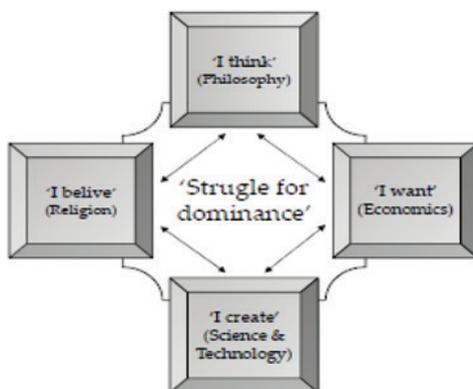


Figure 11: Inter-link in Philosophy, Religion, Economics, and Technology



Source: Sharma, 2019

In past history, there had existed many variations of this above model of close relationship of intellectuals, rulers, priests and business oligarchs. Historical proofs sug-

gest that these forms varied from intense collusion, to intense competition or enmity to the extent of wars, or bureaucratic tyranny. Philosophers (intellectuals, advisers) in rivalry with the priests, for their security, usually stood by the rulers, who had large armies at their disposal. It is also noticeable that at times, priests having the support of the masses declared themselves as rulers. In such cases a conflict was imminent²⁹.

To qualify for a *great* ancient civilization, there must be a successful, flourishing and well-organized economy. Although, every economy functions by its own laws, it is also governed by social and moral codes (e.g. tax and property laws), and religious beliefs (e.g. charity, rejection of the rate of interest by Islam), and target goals of the society. Accordingly, it has to devise a particular economic model. For any civilization, the symbol of its prosperity, among others, is its portfolio of gross monetary and real assets, and the income-wealth structure of the population. In ancient civilizations, money (bullion, coins and jewels) had been a synthetic indicator of the wealth of a nation. While, its growth was measured in terms of output of the primary sector, and its extensive international trade, its sustainability over a long period of time showed its robustness and strength. The quality of life, occupational structure, level of poverty and income distribution, infrastructure, trade, organization of bureaucracy, urbanization etc. are some of the *litmus test* indicators of the level of advancement of any society.

Unfortunately, since, very little economic data is available on these mentioned issues, it is rather difficult, to make any reliable comparative study. A simple fact, however, can be learnt from the history, i.e. the achieved annual rates of economic growth of these societies were constantly low and fluctuated around zero. Farming, animal husbandry, carpentry, smithy, fishing, and international trade usually contributed to the major share of national incomes. Economies were mostly controlled by the State. Riches were shared among rulers, bureaucrats and traders who commanded the wealth, property and trade of any economy. Common people (farmers, labourers and slaves) toiled and suffered from hunger, disease and widespread poverty, low living standard, exploitation, high interest rates on loans, and high taxes.

Triangle in the Human Body

In human body there are some 30 triangles of anatomical or surgical importance. Within them, their size, contents (arteries, veins, nerves, and lipoids) varies. Some are of marked importance e.g. Scarpa's femoral triangle, Hesselbach's inguinal triangle, and Petit's lumbar triangles etc. The inter-scalene triangle is fairly important as it is a region of the neck which is base and integral part for upper extremity, i.e. anesthesia (brachial plexus)³⁰.

Sometimes triangles, in scientific literature are used to represent feminine and masculine traits. Usually, a triangle pointed up represents a masculine, and with a

point down a feminine. Note, that in human body the abdomen is in a triangular form. It is the source of discharging body wastes and human reproduction.

Many in **Buddhist** philosophy believe that in human body there exist two inverted triangles – upper (point up) and lower (point down). While the upper embraces heart and mind, the lower regulates the function of body. For achieving the state of *Nirvana*, the believers must concentrate on the proper functioning of the upper triangles.

In **Hinduism**, *lingam* (the male organ) and *yoni* (the female organ) are frequently worshiped in Hindu temples, and in individual homes. These represent *Lord Shiva* and his consort goddess *Parvati*.

Conclusion

From the above brief discussion, some main conclusions can be drawn:

Firstly, these concepts of triangle, numeral 3, and trinity have been interchangeably used in history, philosophy, religion, politics, economics and social life of the human beings throughout the world.

Secondly, it had always been the desire of world leaders in various fields to maintain a balance in the day-to-day running of the socio-economic life of the people. It is known that existing balance used to be disturbed occasionally by wars, epidemics, hunger, climate disasters, civil unrest, etc. History of civilizations records that in such cases, the driving forces – in politics, religion and economics, have succeeded in re-establishment of an equilibrium.

Thirdly, an equilibrium in trinity of socio-politico-economic life, was key of the progress of human civilization.

Fourthly, the role of the then existing technologies of the Bronze Age, sophisticated technology of the medieval times, and that of the post-industrial revolutionary age created the modern world. Thus, to our mind, this was the fourth pillar of human civilization. It strengthened the foundations of existing trinity.

Fifthly, in the domain of modern economics, a trinity had always existed, and it exists even today, which is in between the governments, democratic institutions (parliaments, labour organizations, financial institutions etc.), social policies (religious charities, red-cross, human-rights institutions, etc.) at local, national, and international levels³¹. At all levels, the effort is made to maintain an equilibrium. In the specialised field of economic measures, fiscal, monetary and administrative tools dominate, and

Finally, one must say that an essential condition to keep the socio-economic equilibrium in balance, all the actors in society, must rightly discharge their obligations since maintenance of an equilibrium among conflicting forces is the key to the progress of human civilization.

Declarations

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Conflicts of interest/Competing interests

There is no conflict of interest/Competing interests

Availability of data and material

Data will be available upon request.

Code Availability

Not applicable.

Authors' Contributions

Not applicable.

NOTES

- ¹ The capital version of the Greek letter delta is written as a triangle (Δ). A triangle is a polygon with three edges and three vertices. It is one of the basic shapes in geometry. In mathematics, it states that the area of the square whose side is the hypotenuse (the side opposite the right-angle) is equal to the sum of the areas of the squares on the other two sides. In physics, it is used as a symbol to represent change (δ). Thus, the triangle can also mean change. It also represents harmony and balance. When the three sides are balanced, a conditions necessary for change is created thus evolution needs to take place.
- ² Three (3) is the first number to which the meaning all was given. It is the triad, being the number of the whole as it contains the beginning, a middle and an end. The power of numeral 3 is universal and is the tripartite nature of the world as heaven, earth, and waters. It is human as body, soul and spirit. In the first three numbers, all of the others are synthesized. From the union of oneness and duality (which is its reflection), i.e., from triad, proceed all of the other numbers, and from this primordial triangle all figures derive.
- ³ This Threeness or triad, has always been considered sacred-like oneness, duality, and all numbers – by virtue of its very properties and particular attributes. These properties and attributes are manifested in its threefold nature, which of itself is the inevitable expression of a principle, an archetypal fact, that solidifies in a series, as a representation of ideas and energies that materialise in magical,

mysterious fashion while obeying precise, universal laws, which the numerical codes and the geometrical correspondences symbolise.

- ⁴ See, Sharma, S (2017) 'Some thoughts on ancient civilizations' trinity of philosophy, religion and economics', *The Journal of Philosophical Economics: Reflections on Economic and Social Issues*, Vol XI, Issue 1, Autumn 2017, pp 83-102.
- ⁵ (2013), *Pythagoras Selections*, Theophania Publishing: London.
- ⁶ In Euclidean geometry, any three points, when non-collinear, determine a unique triangle and simultaneously, a unique plane (i.e. a two-dimensional Euclidean space). In other words, there is only one plane that contains that triangle, and every triangle is contained in some plane.
- ⁷ Lawlor, R (2018) *Sacred Geometry, Philosophy and Practice*, London: Thames and Hudson.
- ⁸ The triangular law of forces states that if there are two forces which are congregation or transient through a point then the third or enclosing side of a triangle. So, this law explains, if two forces stand-in at a point is represented in scale and direction by the two adjacent sides of a triangle taken in order, then the closing side of the triangle taken in the reversed order represents the consequential of the forces in magnitude and direction.
- ⁹ Škare, M (2010), Can there be a 'golden triangle' of internal equilibrium ?, *Journal of Policy Modelling*, Vol. 32, Issue 4, July–August, pp 562-57.
- ¹⁰ In hieroglyphic scrolls there are pictures of animals or objects that are used to represent sounds or meanings ancient Egyptian history. The first use of hieroglyphics may date from as long ago as the Early Bronze Age (around 3200 BC).
- ¹¹ A cartouche is an oval with a line at one end tangent to the oval, indicating that the text enclosed is a royal name.
- ¹² The tradition of Pharaohs declaring themselves as gods had continued up to the middle Ages. For example, the Roman Emperor Augustus (BC 27-14 AD) declared himself as god and ordered his own worships in temples specially constructed throughout the empire.
- ¹³ The Egyptian Triangle – The Book of Threes, bookofthrees.com
- ¹⁴ *ibid.*
- ¹⁵ Triglyph is an architectural term for the vertically channeled tablets of the Doric frieze in classical architecture, so called because of the angular channels in them.
- ¹⁶ Pediments are found in ancient Greek architecture as early as 600 BC (e.g. the archaic Temple of Artemis). Note, that variations of the pediment occur in later architectural styles that were common in ancient Greek temples with a low pitch (angle of 12.5° to 16°).
- ¹⁷ In Sanskrit, the word chakra (चक्र), means disk or wheel and refers to the energy centres in our body. These wheels or disks of spinning energy correspond to certain nerve bundles and major organs. To function at their best, one's chakras need to stay open, or balanced. If they get blocked, our experience physical or emotional symptoms related to a particular chakra is disturbed. There are 7 main chakras that run along our spine. They start at the root, or base, of our spine and extend to the crown of our head.
- ¹⁸ Yantra (यन्त्र), is a geometrical diagram, mainly from the Tantric traditions of the Indian religions. Yantras are used for the worship of deities in temples or at home; as an aid in meditation; used for the benefits given by their supposed occult powers based on Hindu astrology and tantric texts. They are also used for adornment of temple floors, due mainly to their aesthetic and symmetric qualities. Specific yantras are traditionally associated with specific deities and/or certain types of energies used for accomplishment of certain tasks, vows that may be materialistic or spiritual in nature. It becomes a prime tool in certain sadhanas performed by the sadhaka (the spiritual seeker). Yantras hold great importance in Hinduism, Jainism and Buddhism.
- ¹⁹ Tantra (तन्त्र) are the esoteric traditions of Hinduism and Buddhism that developed in India from the middle of the 1st millennium CE onwards. The term also means any systematic broadly applicable "text, theory, system, method, instrument, and technique". A key feature of these tradi-

- tions is the use of mantras, and thus they are commonly referred to as Mantramārga (Path of Mantra) in Hinduism; or Mantrayāna (Mantra Vehicle) and Guhyamantra (Secret Mantra) in Buddhism.
- ²⁰ The problem is known as the 47th Proposition of Euclid or the Pythagorean Theorem. The name originated from Euclid, famously recognized as the father of geometry. The mathematical representation of the symbol is in the ratio 3:4:5.
- ²¹ Taqwa is an Islamic term for being conscious and cognizant of God, of truth, piety, fear of God. It is often found in the Quran. Those who practice taqwa — “believers who avoid Shirk with Allah and who work in His obedience” — are called *muttaqin*.
- ²² For a detailed discussion on some of the issues, one could recommend an excellent book by P. T. Raju, (1982), *Spirit, Being, and Self: Studies in Indian and Western Philosophy*, New Delhi-Madras: South Asian Publishers.
- ²³ Ma’at in paintings, was depicted as a woman who is either sitting or standing with an ostrich feather on her head and, in some cases, she was depicted with wings. According to the Egyptian mythological creation myths, Ma’at was created when Ra arose from the waters of Nun (chaos). She was considered to be the daughter of Ra and was married to Thoth, god of wisdom.
- ²⁴ Occasionally, conflicts or dissent among rulers and philosophers did emerge, since the philosophers were never taken seriously, and often branded as crazy, and even sentenced to death for their noble ideas, it is natural to expect that the philosophers must have tried to win over and convince the rulers in support of their ideas. This must have made possible that in some great civilization’s philosophers (intellectuals) became close advisers to the rulers (e.g. to the kings of VI Egyptian dynasty, Ptahhotep, 2200 BC; Confucius, to Prince of Lu, 503 BC; Kautilya to Emperor Chandragupta, 321 BC), and some basic ideas of these intellectual minds must have been tried (may be with limited success only).
- ²⁵ Note that XV century Italy was a highly unstable place of shifting allegiances and ferociously contending states led by ruthlessly self-aggrandizing families – the Medici of Florence, the Sforza of Milan, the Maltster of Rimini. After the French invasion of Charles VIII (in 1494) and Louis XII (in 1499), Italy became the cockpit for a larger European struggle between contending powers. In modern times too, this tradition continues (e.g. The king of Thailand, Her Majesty the late Queen of Britain, and His Holiness Dalai Lama (although currently in exile) are secular and political heads at the same time.
- ²⁶ See, Sharma, S (2002) *Economics Does Matter: About Economics and Economists*, Zagreb: Mikro-rad.
- ²⁷ See, Sharma, S (2002) *Economics Does Matter: About Economics and Economists*, Zagreb: Mikro-rad.
- ²⁸ Keynes, J M (1936) *A General Theory of Employment, Interest and Money*, London: Macmillan.
- ²⁹ Note that in 399 BC, the enemies and detractors of crimes against the state in the Athenian court of king Archon, among them impiety and corruption of the young accused Socrates. Plato in his *Death of Socrates* narrates through dialogues the entire incident. In *Euthyphro*, Socrates explores the concepts and aims of piety and religion; in *Apology*, he courageously defends the integrity of his teachings; in *Crita*, he demonstrates his respect for law in his refusal to flee his death sentence; and in *Phaedo* embraces death and discusses the immortality of soul.
- ³⁰ Pace, J L (1966) *Anatomical Triangles, Human Anatomy*, pp. 43-49.
- ³¹ Lately, a burning example a trinity, in my view purely unholy, has come to light in Russia: The Kremlin Trinity, where the Russian President, the Russian Oligarchs, and the Russian Patriarch of the Orthodox Church, have joined hands in war against Ukraine.

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Appendix: Symbols Related to the Above Text

Figure 2. a: The Harp



Figure 3. b: The Hindu Trinity



Brahma

Vishnu

Shiva

Figure 4. b: The Buddhist Trinity



Figure 5. b: The Christian Trinity



Figure 6: The Celtic Knot



Figure 12. a: The Shield of David



Figure 12. b: The Jewish Triangle



“The Name of God”, YHWH
in triangle detail from fresco –
Adoration of the Name of God, 1772.

Figure 13: The Egyptian Trinity

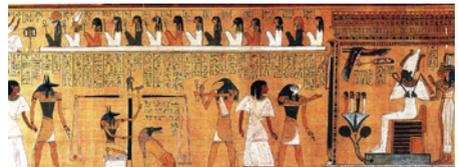


Figure 14: Three Symbols of Freemasons

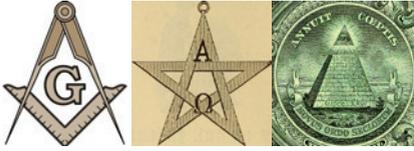


Figure 16: The Eye of Providence/ Endurance



Figure 15: Greek Parthenon



Figure 17: Vedic Symbol – ‘Chintamani’



Some Egyptian Images

Tutankhamun Mask



Cleopatra at Dendera



Tutankhamun at Battlefield



Nefertiti



The Grand Pyramids



The Sphinx



Some Mesopotamian Images

Hammurabi receiving Code
from God Marduk



The God Ashur



Ashurbanipal (r. 669-631 BC)



Giant Lamassu, 8th cca BC

