



# Analysis Of Mentality Of Constructing Pyramids In Ancient Civilizations

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## ABSTRACT

Pyramids are considered stable forms in visual arts and architecture, the construction of which dates back to the emergence of the first civilizations. Since the third millennium BC, when humans entered civilization and urbanism, they began constructing pyramids and stone benches for burial or temple uses. Although the civilizations may not be contemporaneous in formation, in the course of architectural evolution in most parts of the world, such as Egypt, Mesopotamia, pre-Columbian America, and Southeast Asia, by entering civilization and urbanization, the construction of pyramids and stone benches have been seen in different forms. This study aims to find out where the pyramids were constructed in the world and their similarities and differences. This study was conducted using the descriptive-analytical method. The study results indicate that the pyramid form with a square base is an archetype which was formed and developed in regions of the world that were the center of civilization and myth. The pyramid is a symbol of a myth and thought. In India, the pyramid-shaped arch of Hindu temples represents the legend of Mount Meru. Despite the geographical and chronological gap between Egyptian, Mesopotamian, Inca, and Hindu temples, the archetype has shown to be very efficient in the construction of pyramidal structures. Hence, the difference in the construction of the pyramids depends on the use, culture, and needs of the society, which caused the pyramids to be diverse in decoration, dimensions, and size.

**Keywords:** Pyramid, Egypt, Ziggurat, Inca, Khemer.

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## 1. Introduction

The mountain-like pyramids and temples are among the buildings constructed in many parts of the world and among the oldest civilizations in a region. In the ancient world, there were two types of pyramids and stone benches. A stone bench is a term that means a ridge from the ground that is open and without a roof. In Western architectural literature, a part of the wall of a building that protrudes outwards and has no roof is called a stone bench. Sometimes, a stone bench looks like a ridge from the ground that has no roof. While the pyramid is tall, flat, and mountain-like, which

sometimes has a triangular or concave shape.

The pyramid is usually taller than the stone bench and has the shape of a triangle or pyramid. The most important inner room of the pyramid is inside it, the highest floor. If we consider civilization to mean the emergence of line, seal (property), temple, government, army, social classes, and the city, at the very first stage of the human entering civilization and urbanism, the construction of pyramid-shaped temples was observed in all civilizations. The construction of pyramids and temples can be seen as tombs or

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temples in all human civilizations from Egypt, Mesopotamia, Iran, Central Asia, the Incas, and the Khmer.

Many studies on the pyramids have been conducted by various scholars who have studied some of the pyramids, but so far, the pyramids have not been studied in different civilizations and from an archetypal perspective. In this regard, this study aims to investigate in which parts of the world the pyramids were constructed and where are the similarities and differences among the pyramids. To achieve the objective of this study, library information is collected, and then the findings are reviewed, analyzed and the results are extracted.

## 2. Research Questions

This study seeks to answer the following questions:

- 2.1. pyramids in different parts of the world?
- 2.2. Is the function and structure of stepped pyramids the same?

## 3. Method

The above study is a qualitative one. The research method of this study is descriptive-analytical. Data analysis was performed by comparison, and the data collection tool of this study was library studies that reviewed and studied written national and international references to extract the theoretical principles and literature review.

## 4. Literature Review

So far, many studies on the pyramids were individually conducted, Ghodoosifar (2012), in her article, considers nature as one of the important elements of religions which was a factor in shaping architecture. The pyramids were briefly described and separately deciphered in many sources. For example, there are hundreds of books and articles about the pyramids of Egypt, Mesopotamia, and pre-Columbian America. Wolfram Kleiss (1998) wrote an article about the Central Asian plagues in AMI and compared them comparatively [1]. Regarding the ziggurats of Iran, Malek Shahmirzadi has written a book called Silk Ziggurats which has compared some cubic buildings comparatively [2].

## 5. Theoretical Foundations

### 5.1. Meaning and concept of the archetype

Archetype is sometimes misinterpreted as some form of myth or motif. These are nothing, but representations of the conscious realm. We are wrong if we believe that such changeable representations are inherited. Archetype is a propensity to construct such representations of a theme, which differs greatly from keeping the original pattern in detail. For example, there are various representations of hostile brothers, but they all have the same theme. If the archetypes were representations from our conscious realm (or were acquired through self-awareness), they would be easily understood and not surprised when they appeared in the realm of the conscious. While this process is instinctive, like the motivation of birds to build nests [3].

Some researchers categorized the archetypes based on the human character and location. For example, the human characters were described in different ways which can be summarized as follows: 1) hero, 2) Scapegoat: it is often a human or animal whose sacrifice or death during a mass ceremony avoids the calamity of that people: Arash, 3) homeless: wandering Jew, Cain, 4) evil like the evil character of Zahak, Sheghad, Jason in anger and tumult and Orhan in the symphony of the dead, 5) woman in terms of fertility, purity of love like Rudabeh, Shirin, Lily, Bears in Dante's Divine Comedy, Juliet, Zuleykha, and 6) poor lovers: Romeo and Juliet, Lily and Majnoon [4]. The point is that this human subconscious, which exists in the form of a hero or a superman, a wandering human, etc. in all races and civilizations, whether advanced or primitive, in various forms, leading to explain those differences which depend on the conscious knowledge of society or people.

"The origin of the archetypes is unknown, they can be expressed at anytime and anywhere in the world, even if the direct transmission of human descent or racial mixing via the migration is ignored [3]. Archetypes are not fixed and static patterns, but are dynamic factors that act against impulses like spontaneous instincts. Some dreams, ideas or thoughts suddenly appear, and no matter how hard we try to trace their cause, we will not succeed [3]. The archetype comes from the three sources of universal myth, symbol, and dream, which reside in the collective unconscious. According to Jung, all human beings share a psychological layer called the archetype, which is higher than the individual and cultural levels. This layer is instinctively institutionalized in each individual and is a common similarity among human beings around the world [5].

Archetypal concepts are manifested in the great works of different civilizations and cultures worldwide with various physical structures, which form the mental images of various symbols in the collective unconscious. According to Jung, the collective unconscious, which contains the archetype, is a legacy from the first period of human life recorded in his historical memory [6]. She calls this archetype, which is in the collective subconscious of human beings, one's archetype is his archetype, and the central archetype is to unite other archetypes.

Sometimes the term "archetype" is used incorrectly to refer to a tale or pattern. These are nothing more than images of the world of consciousness. We are mistaken if we believe that these changeable representations are inherited [3].

### 5.2. Definition Of Pyramid:

The pyramid is derived from the Latin word pyramid, which is composed of two Greek words of pira, meaning fire, and another mid meaning middle. The pyramid was said to be the place where the royal tomb was constructed to create the eternal tomb of their body, which was based on their belief that the body inside the pyramids reaches eternal life [7]. In geometric terms, it is a conical volume whose base is a triangle or square and whose side faces are formed by triangles, and all reach a common point at the top of the pyramid. One of the four elements found in nature, fire represents energy in the cosmological system and serves as the primary building block for both creation and life [8]. At a height that is one-third of the base, mid is where all waves carrying energy concentrate [9]. The Latin word temple, which is synonymous with a shrine, is derived from the word templum, which means a large, open space on all sides (with a peripheral view). This word means the realm of the sky, and sanctity refers to the place of divine presence and the place of observation [8]. Ritually, in all cultures, pyramids were constructed in the shape of a pointed mountain because the earthly spirits reached the sky through it [9, 10]

#### 5.2.1. Pyramids And Temples Of Egypt:

There are various pyramids and cubic in Egypt. The Egyptians had a polytheistic religion, and Pharaoh was the center of all their rituals [11]. The construction of the pyramids of Egypt was based on the science of cosmology and had a kind of sanctity [12]. The temples were used in Egyptian civilization as an allegory of the origin of life, which rises like a mound from the Nile River. The pyramids were first stepped to reach

the stars by the kings and later angled to worship the sun [7]. The materials used to construct these temples were stone and sometimes brick [12]. It is an example of a pyramid.

One of the first pyramid-shaped buildings in Egypt is the Pyramid of Djoser, an evolved form of the cubic tombs. Pyramid of Djoser 2650 BC (Figs. 1-3). This pyramid is one of the stepped pyramids of Egypt, which is located in Saqqara [13]. This building is based on ancient cubes and consists of six rectangular stone volumes placed on top of each other [14-16]. Its orientation is such that the corner of the pyramid corresponds to the four main directions [17] with an entrance from the north [18], and its façade is made of polished limestone, murals with the theme of everyday human work. These six volumes consist of two cubic floors and two floors built on, and two additional floors [7].

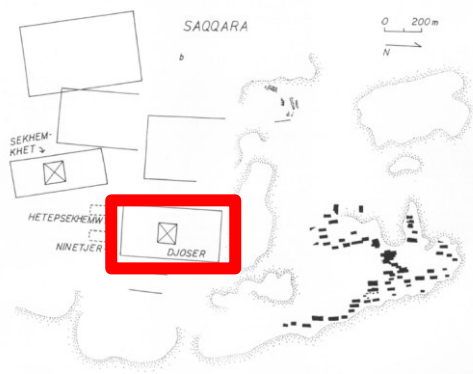


Fig. 1: Location of the Pyramid of Djoser in the historical site [17]

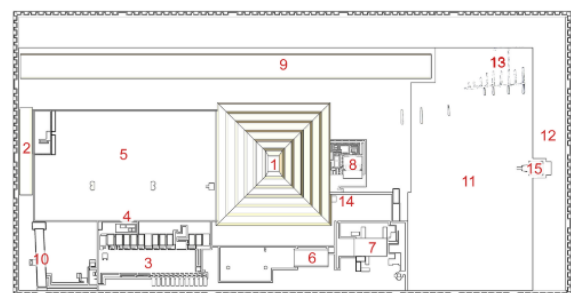
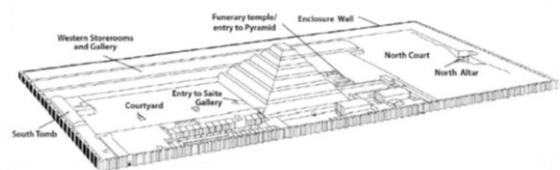
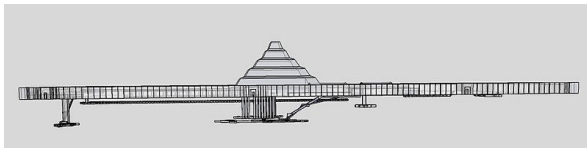


Fig. 2: Plan and volume of Pyramid of Djoser [15, 18]

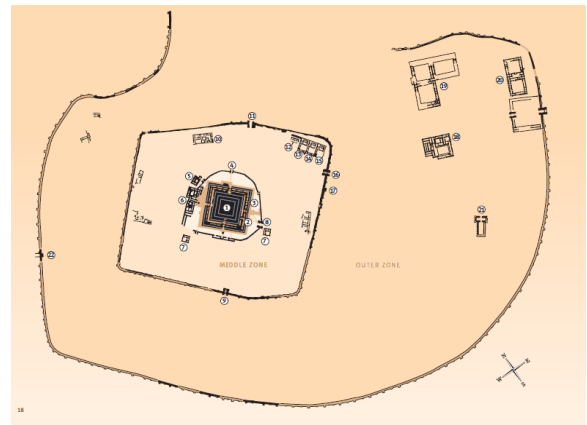


**Fig. 3:** Vertical section of Pyramid of Djoser  
<https://images.app.goo.gl/f8RNqJ4GxamWr1L6>  
 (Found on 08/28/2020)

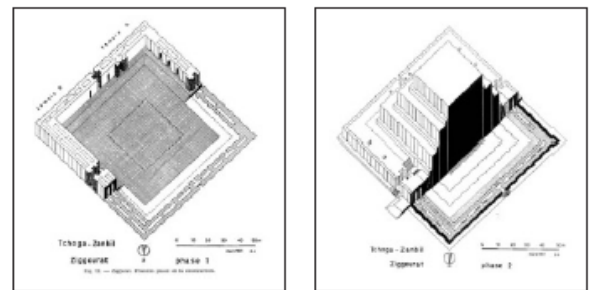
### 5.2.2. Ziggurats (Mesopotamia)

The flat, tall, and mountain-like buildings of Mesopotamia are called ziggurats. Ziggurat was common in Sumerian, Ilam, and Babylonian civilizations. Mesopotamian civilization had a multi-layered and deep religion that was dominated by polytheism in ancient times [19]. Ziggurats are the residence of the gods and their tombs, and the ascending form is pyramidal to create an artificial mountain and the existence of stairs to ascend to the holy place [20]. These people thought spirits were in the sun and stars. Only priests and kings were permitted inside the structure. These structures were stepped temples with three to seven stories. This structure's foundation was square. The decorative element in these temples was the horns and statues of cows that had a sacred relationship. The horn is a sign of fertility [21]. The temple or holy room was located on top of this pyramid [19]. The pyramid corresponds to four main directions and is surrounded by a square fence and a circular inner fence, the entrance of which is located on the northwest side [22]. In ziggurats, the starting point of orientation is formed from the entrance [23].

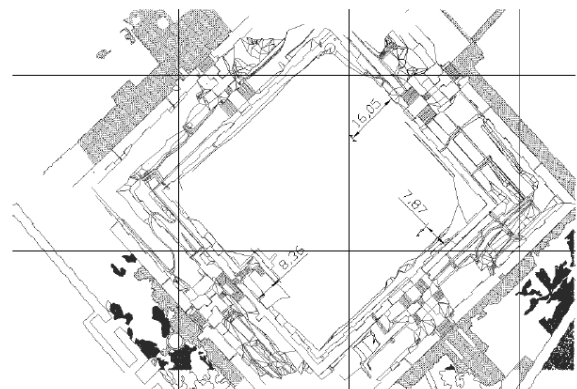
Hence, Chogha Zanbil ziggurat is briefly described, for example. A religious center in southeastern Iran [24]. A five-floor stepped and pyramidal building (Pictures 4 to 7). The materials used were raw clay or baked bricks. Its plan form is square in shape and enclosed in a circular fence. [25]. For the construction of this building, four main directions are considered, and they correspond to the four sides of the building. Among these aspects, a series of stairs were installed to reach the holy room. The important point is the nested and complex corridors that do not allow anyone to enter [21].



**Fig. 4:** Location plan of Chogha Zanbil ziggurat [26]



**Fig. 5:** Chogha Zanbil Ziggurat Volume [26]



**Fig. 6:** Orientation of Chogha Zanbil Ziggurat (Russian pyramid corresponding to the main directions) [27]

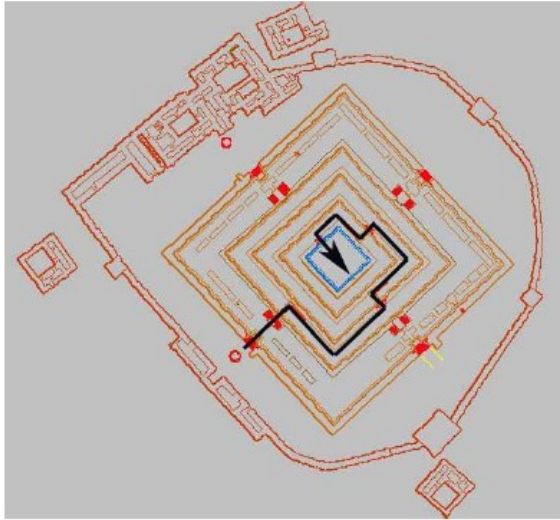


Fig. 7: Plan and access to Chogha Zanbil temple [27]

### 5.2.3 Aztec Pyramids And Temples (Middle America In The 12<sup>th</sup> Century AD)

The first city of the Aztecs was constructed according to their beliefs in Tenochtitlan in 1345 AD [28, 29]. Aztecs believed in polytheism [30]. The people had their architecture of temples, and it was a double temple that had been never seen before. The step pyramids are stacked on top of each other, with a square base that is set based on the sun at different times, and another feature of these buildings is the existence of a double step, and this duality takes a look at the cosmology of these people to represent a dual world. During this period, there were a limited number of circular and rocky temples, but the predominant form of the pyramid base was square. These buildings' orientation and their axis were based on the observation angle of stars and planets [32]. The four directions of the temple correspond to the north direction (black color-black god), south direction (blue color-god of war), east direction (red color-sun god) and west direction (white god-women god), and in general, the sacred elements; they are sunlight, water, earth, man, death and time. The mountain was one of their important elements, which was a symbol of water and fertility. The pyramids are often placed at the top of the pyramid as an allegory of the mountain and its temple [30]. This group's symbol was the eagle, jaguar, and wolf. These people believed that immortality depended on the sun and made human sacrifices to it. The color and emblem of each god determined the ornamentation of temples [32]. Tenochtitlan temple

This is the main temple of the sacred center and capital of the Aztecs, with twin pyramids

symmetrically on the right corner [31], which has access to the sacred room via two parallel stairs (Figs. 8-11). These stairs are decorated with carvings of snake heads [32]. Regarding the interior decorations, it can be said that each temple was decorated with its own features. In this temple, the left pyramid represents rain, sky, and day with vertical blue and white lines, and the pyramid on the right is a collection of prominent white circles on a dark black background representing the stars in the night sky. In the interior of temples, in addition to wall decorations, we see oyster ceiling decorations that are a symbol of water and butterflies, which are also a symbol of the sun god [33]. There are three sacred stone platforms for games outside the building and among the fences leading to the water dam and the temples [29].

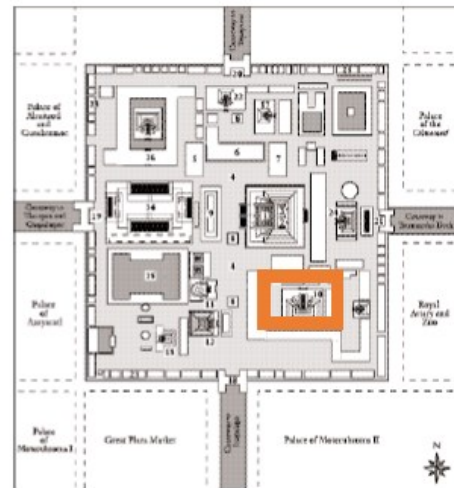


Fig. 8: Temple of Tenochtitlan, Aztec, [30]

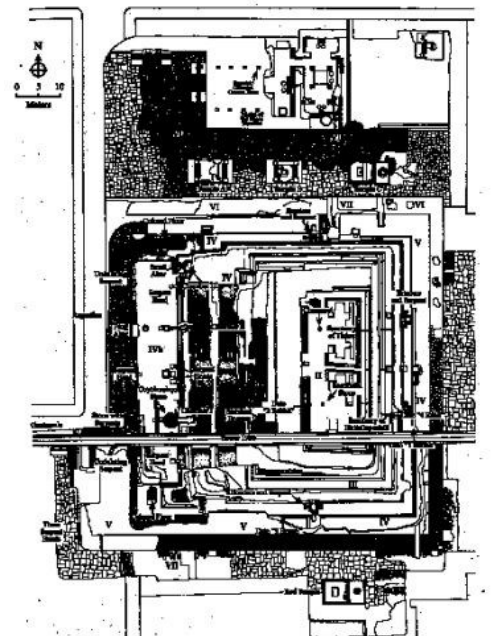


Fig. 9: Temple of Tenochtitlan, Aztec, [30]

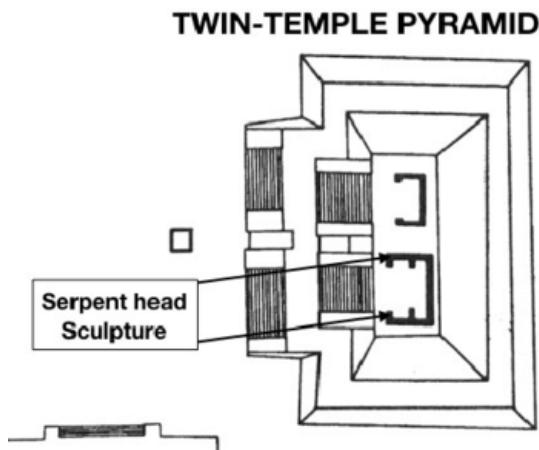


Fig. 10: Plan of Tenochtitlan Twin Temple, [30]



Fig. 11: Volumetric replica of Tenochtitlan Temple [30]

#### 5.2.4. Pyramids And Temples Of Khmer (Southeast Asia In The 13<sup>th</sup> Century AD)

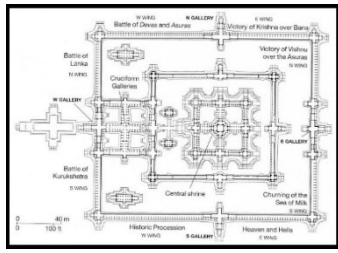
The history of the Khmer and their religious beliefs are very different during the 500 years of the Khmer Empire. [34]. Despite the ambiguity in existence and definite influence of Khmer temples in Cambodia of Buddhism [35]. Literature of this people has a Buddhist religion that the effects of this religion in architecture introduced them as a separate ethnic group from the Cambodians [36]. This architecture is differentiated from others by the theological concept that the king of man-god is the monarch of God on earth, and this belief has led to the development of mountain-like temples that have solidified as the center of the universe. Khmer cosmological belief and worldview led to the placement of the living Khmer king in these temples, whose physical presence symbolized his royal role. In general, Khmer temples were the residence of kings (earthly palace, worthy of the heavenly gods) [37]. Large stone temples and statues of God with stone ornaments and motifs are the prominent features of this ritual [36]. During this period, the main element of cities was the issue of irrigation, which is a reflection of respect for water in

temples and palaces [38]. Khmer temples, tower-shaped multiple monasteries were built of stone, corresponding to the north and south axes. In these temples, little attention was paid to the foundation. The decorations of the temples did not have a decorative aspect and had more of a narrative purpose, and the human body and the protome were used extensively [38, 39]. The roof according to the addition of the base cube probably goes back to the Buddha's eight ways to get rid of suffering, and we can also point to the three signs of the Buddha's existence, the main of which is instability [40].

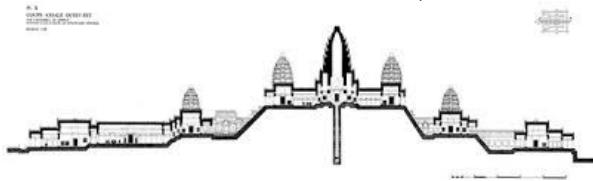
The Temple of Angkor Wat was built in the Khmer land (Cambodia) in the 12<sup>th</sup> century AD [41]. This temple is the culmination of Khmer architecture, a combination of all previous architectural styles (Figs. 12-16). The materials used are made of cut stones with many decorations and carvings. A rectangular wall also surrounds the temple. The orientation of this building corresponds to the four main directions, which are accessed from the west by a paved passage around which the guard lions can be seen. The building has a triple nave (an allegory of the Buddha's three ontological principles) and three beds up to the highest point of the mountain. The pyramidal minarets of the towers have eight floors (Buddha octagonal). Free standing statues decorate this temple. Narrative decorations are also seen in the form of reliefs in the temple [38]. Recent studies showed that the Temple of Angkor Wat is essentially an observatory where the sun rise on the day of the equinox (when day and night are equal in time, and the annual revolution occurs when the shortest day or night of the year occurs) is adjacent to the western entrance of the temple and many lines of view for seasonal observation of the sun and the moon were marked in it [42].



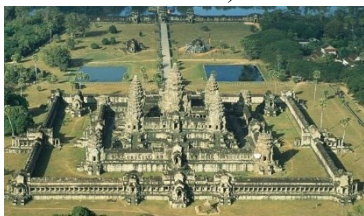
Fig. 12: Location of Angkor Wat temple in Khmer religious site (<https://angkorwat.de/rundgaengedurch-die-angkor-wat-tempel-touren-karten>, found on 08/28/2020)



**Fig. 13:** Angkor Wat plan, <https://images.app.goo.gl/9xt2qg7Kkeu52YQs5>, found on 2020/08/28)



**Fig. 14:** Cross section of Angkor Wat temple (<https://www.behance.net/gallery/4296699/Angkor-Wat-Architectural-Drawings-Orthophotos>, found on 08/28/2020)



**Fig. 15:** 5-tower Angkor Wat Temple <https://images.app.goo.gl/xx7in79hYSVePqQL6>, found on 2020/08/28)







**Fig. 16:** Fence (ditch filled with water) <https://images.app.goo.gl/tXNdnUQyVnnN3LBEA> (Found on 08/28/2020)

**6. Discussion**

A. Stepped or flat form: In most religions, intermediate stairs have been introduced as gradual passages from the physical world to the spiritual and abstract world to reach the cosmic position of temples, the area connecting the earth to the sky and meeting with the gods and the symbol of the ascent from the earth to the throne [21]. In the studied samples, the stepped form of temples was observed. In Egypt, we also see the form of step, which is the origin of angular pyramids. In Khmer temples, a stepped shape is observed on the roofs of temples and their topology (Table 1).

**Table 1:** Comparison of the four logic pyramids studied in terms of form of façade

Khmer temples – 13 <sup>th</sup> century AD	Aztec temples – 12 <sup>th</sup> century AD	<i>Chogha Zanbil</i> Ziggurat 1250 BC	Pyramids of Egypt - 2650 BC
 <p>a stepped shape in the roofs</p>	 <p>a stepped shape from the base to the top</p>	 <p>Flat and stepped form</p>	 <p>Initial form of a staircase from the base to the top of the pyramid</p>

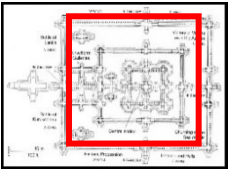
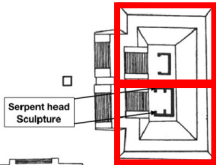
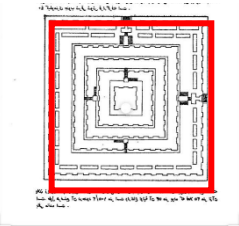
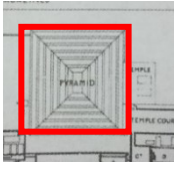
B. Plan or base of the right corner and square: The square plan is a manifestation of the world, and its corresponding space has a form of earth and sky. The quadrangular form symbolizes stability; in historical literature, it means luck. This is the basis of the numerical and formal cosmology of Pythagoras. From Pythagoras' point of view, the square is a symbol of life, and from Plato's point of view, the square represents harmony, which is

the highest virtue. On the other hand, the square is a symbol of limitation, and in sacred architecture it means transcendent knowledge. The square is the formal example of the number four, the figure of divine perfection and the completion of embodiment. Its square concepts refer to the physical, natural and elemental forms of the human, angels and the four divine beings, and the four divine boats [21]. Stability is one of

the inherent features of cubes and squares, which introduces them as the most suitable geometry for constructing buildings. The cube is an allegory of the earth and the representation of the human [43]. All the shapes used as the foundation, the main area or ground, are square, and it is better to say quadrangle because it includes the rectangle. When measuring beauty, the human eye subconsciously compares and measures, the measure of which is the smallest element. In the square, this analogy is established in a neutral way that by cutting two squares, two tangent rectangles can be achieved and its beauty can be

measured [44]. The feature of a square is horizontal and vertical states [45]. A quadrangle includes four directions of the sky and four seasons, so it is a cosmic number. The square has two axes of symmetry with the same diameter. Its right angle creates a simple excitatory composition for the observer [46]. In temple plans, the right-angled and square form has been the dominant form. In the temples of the Khmer and ziggurats, we have a square, in the Aztecs, we see a combination of two squares, and in Egypt, and we see a rectangular shape that finally reaches the right-angled form (Table 2).

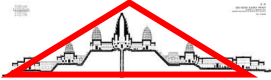
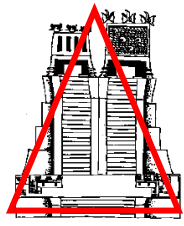
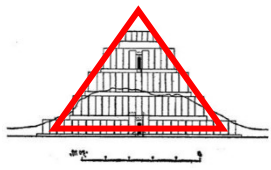
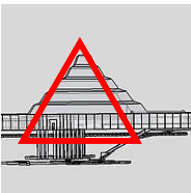
**Table 2:** Comparison of the four logic pyramids studied, in terms of square plan

Khmer	Aztec	Ziggurats	Pyramids in Egypt
 <p>Khmer temple in the shape of a square</p>	<p>TWIN-TEMPLE PYRAMID</p>  <p>Serpent head Sculpture</p> <p>Rectangular plan of the Aztec twin temples</p>	 <p>Square plan of ziggurats</p>	 <p>Square plan of the pyramids of Egypt</p>

C. Facade and profile of the pyramids: In the Aztec temples, ziggurats, and stepped pyramids of ancient Egypt, skyline is completely stepped based on the belief in the ascension and common wisdom of different people, and in the Khmer temples, a linear form that rises from the roof of

the stepped form and continues to the top of the pyramid. Moreover, a stepped form is considered in the topology and foundation of the building. The stepped ascent to the upper levels is observed in the stepped pyramids of Egypt and the ziggurats (Table 3).

**Table 3:** Comparison of the four logic pyramids studied in terms of form of façade and profile

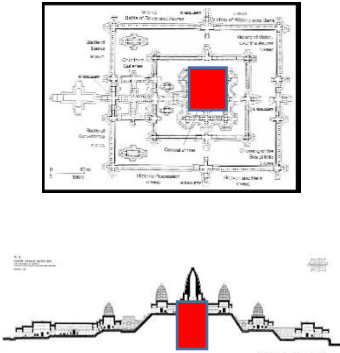
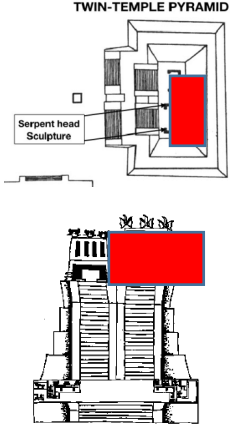
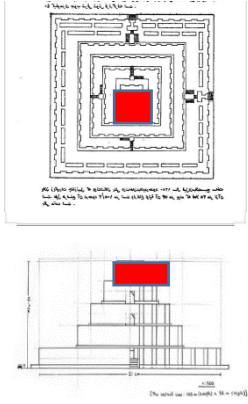
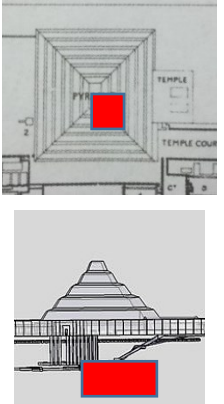
Khmer	Aztec	ziggurats	Egypt
			

D. The holy room of the temples: In the studies, the holy room of the burial place of the Aztecs was located in the form of twins at the top of the pyramid. This is underground as cubic. This is also at the top of the pyramid in ziggurats. In the

Khmer temples, the central tower was the holy place of residence of the king-god. In terms of plan, in all four temples or pyramids, the holy room was located in the center of the pyramid (Table 4).



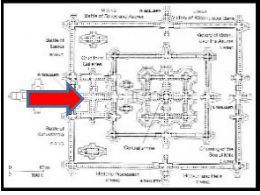
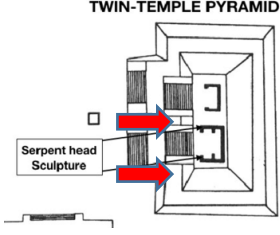
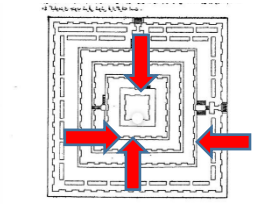
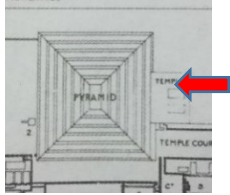
**Table 4:** Comparison of the four logic pyramids studied in terms of the location of the holy place or burial

Khmer	Aztec	ziggurats	Egypt
	<p>TWIN-TEMPLE PYRAMID</p> 		

E. Circulation of pyramidal temples: In the Aztec pyramids, access to the temple or sacred room is possible through two rows of parallel planes that extend to the top of the pyramid; in the Khmer, through the four openings of the temple in the four main directions that level the ground; in the

pyramids of Egypt, it is through round corridors because in these temples there was the filtering of people and in the ziggurats, it is in four main directions through 4 rows of stairs in different floors (Table 5)



**Table 5:** Comparison of the four logic pyramids studied in terms of access

Khmer	Aztec	ziggurats	Egypt
	<p>TWIN-TEMPLE PYRAMID</p> 		

F. Decorations of pyramidal temples: In Aztec temples, most of the decorations were eagles, jaguars, and snakes, and in some buildings, the skeleton of a human head was used, and the interior decorations were abstract and always had

a meaning. In the temples of the Khmer, we see human protome, figures, reliefs, and decorative narratives. In the pyramids of Egypt, there is no decoration, and in the ziggurats, except for glazed tiles, no decoration is seen (Table 6).

**Table 6:** Comparison of the four logic pyramids studied in terms of facade decorations

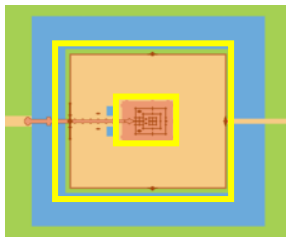
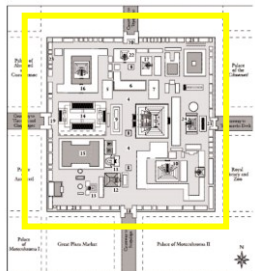
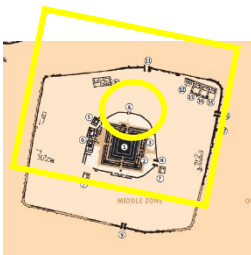
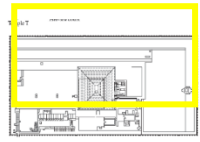
Khmer	Aztec	ziggurats	Egypt
		<p>The decorative element was very limited and in some places it was cow horn.</p>	<p>It had no decoration in the facade of the pyramid. But there were many murals inside the burial room</p>

Narrative decorations of everyday events, reliefs and murals and human figures in the pyramid facade	Decorations of human skeletons and a narrative in the facade of the pyramid		
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G. Temple fencing: Each of the studied temples have one or two fences that separate the holy place from the public space, which is described in the table below (). In the Khmer temples, there was no fence and the temples were located next

to each other. There was a water channel around each pyramid that defined its boundary. In the pyramids of Egypt, there is no fence, but in the ziggurats, there are one to three fences that surround the ziggurat (Table 7).

**Table 7:** Comparison of the four logic pyramids studied in terms of fences

Khmer	Aztec	ziggurats	Egypt
 <p>Khmer temples have two square fences, the first fence or retaining wall which is located near the pyramid and the second fence are tangential to the water ditches (temples surrounded by water)</p>	 <p>Aztec Temple is located in the besieged city of <i>Tenochtitlan</i> and is surrounded by a square wall leading to the water dam.</p>	 <p>Ziggurats have several fences with special hierarchies and areas.</p>	 <p>The pyramids of Egypt had a rectangular fence that allowed religious and cultural spaces from other spaces.</p>

**7. Conclusion**

- With the advent of the first civilizations, the construction of the pyramid began, in many areas of the planet and near the civilizations formed in a region, the above buildings were constructed. The study results showed that:
- The square-base pyramid was constructed as a basic and static form in many parts of the world that have passed the urbanization stage and are rich in literature and myths, such as Egypt, Mesopotamia, Inca, and Aztec. India is one of the regions where the construction of pyramidal temples occurred. In India, the pyramid-shaped temples are called garbha griha, which have a square plan and then a mountain-like roof called Sikhara. This pyramidal form is in a beautiful and complete type in Angkor Wat temple in Khmer, a temple based on Hindu principles with astronomical and astronomical functions. The pyramids were shown in the order of time: Pyramid of Giza

(Egypt, third millennium BC), Ornamo ziggurat (Mesopotamia, late third millennium, Sumer), Chogha Zanbil (Iran, late second millennium BC), Ainka and Aztec (central and south America, 12<sup>th</sup> and 13<sup>th</sup> centuries AD) and the Khmer (12<sup>th</sup> century AD). All these pyramids have arisen in the lowlands and plains; and made without adaptation and imitation of each other and in a land that passed the stage of urbanization and owns calligraphy and literature. It is as if the human subconscious has been looking for high buildings on the plains. The base of all the pyramids was square. The square form represents squaring and is one of the solid and non-fluid forms.

- The step form, which symbolizes the mountain, ascension to the sky and separation from the world of sensations, has been crystallized in temples for centuries, and the element of water was considered the axis for temple design in most temples. These two elements can relate the stepped

34 form to wisdom. Besides, in all pyramids-temples, attention has been paid to the presence of human beings, both physical and spiritual.

- The evolution of stepped temples from ancient Egypt to the 12<sup>th</sup> century AD was studied by selecting four types of pyramids in different parts of the world. Hence, there are differences in using the pyramids. Some of the pyramids, such as the pyramids of Egypt, were mostly used as graves and were constructed to preserve the body or soul of the deceased. Although they had a ritual and sacred function, in Central America in the 12<sup>th</sup> century, religion was polytheistic. In the case of the Khmer pyramids (which were Buddhist) in the 12<sup>th</sup> century AD, we see changes in the stepped form. In general, the stepped form is an allegory of the mountain and the wisdom of the rituals and religions of that time indicating ascension to heaven and separation from this earth. The form of the base has been right-angled in all temples, which is a symbol of stability and the material world, which in the ancient pyramids, with the process of shrinking these squares towards behavior, reaches fluidity and style, and in Khmer, despite Buddhism, the square form of the base is to emphasize the sufferings of the material world with a higher height than the ascending stairs to the sky.
- Another important point is that in the pyramids of Egypt, the pharaoh was the axis of existence and was buried underground, and there was no place for the entry of the general public into the pyramid. In the ziggurats, the room on the top floor was dedicated to the goddess of the city. The ziggurat was merely a temple and shrine. To control the entry and exit and prevent the entry of the general public, by constructing floors on entering the floor spaces, filtering was done. The same trend has continued in the Pyramid of Aztecs, but in the form of twins, representing a dual world. In Hindu temples, there was a set of facilities where music, singing, feeding, etc. were performed. Angkor Wat Temple in Khmer is an example of a Buddhist temple based on the structure of Hindu temples. This pyramid-shaped temple was also the residence of the king and his family.
- For the orientation of the temples, in Egypt, there is an adaptation of each side of the

pyramid to the four main directions. Ziggurats use orientation based on another mental pattern, such as a celestial element. But, in any case, the Aztec and Khmer pyramids, like the pyramids of Egypt, are exactly consistent with the four main directions.

- In all the pyramids, there is a pure or holy place and an impure place. The elements such as water, a hierarchy of movement through the walls that have created special areas for the building; indicate that a ritual was performed on horizontal and vertical axes. The horizontal axis is the walls or signs that are marked on the entrance and exit of people, and the vertical axis is seen by constructing multiple floors and ritual ascent. This process is a kind of visit to the place or upper room reserved for the goddess of the city (especially in ziggurats).
- In Egypt, the pyramid is surrounded by a rectangular wall, and after passing through it, it reaches the pyramid and its main entrance. In ziggurats, sometimes up to several fences and walls that determine the different boundaries of the building can be seen. To climb to the upper floor of the ziggurat, which is the residence of the goddess of the city, sometimes (like Chogha Zanbil ziggurat) you have to take a spiral path; sometimes, like Ornamo Ziggurat in Ur, it leads to the upper room via an outer ramp. In the pyramids of Aztec, after passing through the city wall, it directly reached to the twin steps of the temple, which led up to the inside of the temple. In the Khmer temple, after entering the city fence, one reaches water fence around the pyramid, which passes through its stairs to the wall or the fence adjacent to the pyramid, and then to the entrance of the pyramid, which is the temple and residence of the king. All these elements show that the human desire at the stage of urbanization and the development of literature to construct pyramids and mountain-like buildings with a square base, in any region of the world follows a mental process that Jung calls archetype is seen in separate civilizations and unaffected by each other.

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