On the Development of Indian Temple Architectural Morphology and the Origin of Superstructure

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The origin of the curvilinear superstructure in the Indian temple has been the subject of inquiry in the works of Indian temple architecture and it still remains a mystery to be proven, despite a number of solutions given based on scriptures and guesses. The principal reason for this ignorance, according to Simpson, is owing to the absence of monuments representing the steps by which the Hindu temple was developed to its complete form.\(^1\) However, Chandra states that Coomaraswamy was the first to interpret the Hindu temple not only as a building providing shelter for the image and the worshippers but also as the image of the cosmos, the house of God and also his body. It represents in its parts the drama of disintegration and reintegration which is the essential theme of Indian myth and its ritual enactment in the sacrifice.\(^2\)

The architectural morphology\(^3\) and the symbolism of objects have been the two significant aspects in the study of Indian temple architecture. The origins for symbolism of structures and forms have become the source of intricacy, mainly for the reason that any given form in temple architecture can have many resemblances or associations\(^4\). It becomes, thus, a difficult task for anyone to unravel the origin of forms of Indian temples in a precise and unambiguous way. Absence of such details result the availability of interpretations of both forms of temple architectures as well as rituals surrounding the forms in a number of different ways, but each of such interpretations exhibit a plausible

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\(^1\) Simpson (1891, p. 231).
\(^2\) Chandra (1983, p. 33).
\(^3\) According to Meister (1986, p. 33) architectural morphology is a language of form through which a system of belief could be expressed.
\(^4\) A definition for symbolic reference is stated by Meister (1986, p. 33) as something that represents something else by association, resemblance, or convention, especially a material object used to represent something invisible.
and convincing definition. One of the purposes of this paper is to point out the multitude of architectural morphology surrounding temple spire. Especially, cases of interpreting and using the forms such as Śikhara and āmalaka in a number of different ways are provided here with illustrations.

It is also emphasized in this paper that any object that is to be considered of having any resemblance or significance to be treated as origin of Indian temple forms such as Spire, Śikhara, āmalaka etc., in a metaphorical sense or due to formal similarities must have a value attributed to it intrinsically to the religious practices and customs, and any object that makes a resemblance by mere coincidence must be prevented from being considered for study. For example, as we will see in detail below, Simpson makes a guess that “sacred umbrella” can be understood as a origin for the evolution of temple spire with a curvilinear shape, because it has been used within the Hindu religious system as a royal emblem, especially used by monks and kings in secular contexts. On the other hand, bāmbus when used in their combined form act as an umbrella and thus become an object for comparison, but when used as a pole with a piece of rag on it, one does not find it as relevant and popular religiously as that of sacred umbrella, except for the fact that it used in a specific ritual.

The two terms “shelter” and “sacrifice” are understood to be significant in Indian temple architecture. Rituals surrounding the making of Vedic Shelters provide a vocabulary for wood and reed construction (Renou 1998). While the term “shelter”, in general, presupposes a curvilinear shape or Kūṭu, the term “sacrifice” presupposes a square shaped altar in Hindu religious system. Slaying of dæmons on altars and shelter of divinities in temples are the two co-occurring principles that deserve mention as these
two concepts constitute the Hindu architectural morphology from Vedic time\textsuperscript{5}. On the question of origin of form, the conception and making of altar precedes the conception and making of curvilinear superstructure, and each of these shapes can very well have its own origin in history in their own independent way. However, Meister (1986 39) is of the opinion that the curvilinear shape is an extension of the maṇḍala: “the curvilinear tower of the North Indian temple forms a zone of transition between the outer dimensions of the vāstumāṇḍala, measured by the walls of the temple, the inner dimensions of the sanctum, marked at the top of the temple by the upper vedi”. On the other hand, co-occurrence of both superstructure and square shaped maṇḍapas in temples, especially in South Indian temples, makes it suspicious whether these two architectural shapes are the extensions from each other. See for example, the Śiva temple in Thanjavur (Fig. 4) holds four different main parts namely the sanctum, the ardhamāṇḍapam (sole tower), the muhamāṇḍapam (face tower) and the mahāmaṇḍapam (giant tower). The sanctum is spire shaped and the maṇḍapas are square shaped. Its towering vimānam is about 200 feet in height and is referred to as Dakṣiṇa Mēru; the octogonal Śikhara rests on a single block of granite weighing 81 tons\textsuperscript{6}. Kramrisch also notes that the Crowning High temple is an extension of High Altar (vedi): “… the Prāsāda rises bodily towards its high point, tier on tier, until diminished in its bulk it forms the High Altar (vedi) on which is placed the crowing High Temple or the Āmalaka with its finial that ends in a point”\textsuperscript{7}. Coomaraswamy (1992: 45), on the other hand illustrates the term stūpa, which was used with the connotations of ‘top’ or ‘point’; and Viṣṇo stūpo or stupa meaning ‘hair knot

\textsuperscript{5} Meister (1986, p. 37).
\textsuperscript{6} Source: http://www.templenet.com/Tamilnadu/brihtanj.html. The term Śikhara is used to refer to the entire superstructure, as opposed to the finial point as referred in Meister (1992).
\textsuperscript{7} Kramrisch (1944, p.175).
of Viṣṇu. Viṣṇu’s hair knot, for example, is an ideal candidate that can be taken to attribute something similar to Śikhara or āmalaka with curvilinear shape. Also, a completely distinct observation as Śikhara being understood as a mountain or peak like super-structure is made by Kramrisch (1944: 176). Kramrisch, who bases his ideas based on Vāstu-śāstra, notes that Śikhara is used to denote the whole super-structure including the ‘crown’ and up to the finial. Obviously, one finds here a major change in perception of understanding and interpreting the form between the times of Simpson and Kramrisch.

The other term kūṭakāra that Coomaraswamy illustrates is relevant to any discussion on “roof”, “spire” and “Śikhara” because this term refers to ‘an entire building with a peaked roof’ and this structure was used as an object of adornment, especially to adorn monks, and other sacred places, according to Coomaraswamy. The plates that Coomaraswamy cites to emphasize the sacred nature of kūṭagāra can not be ignored in any context of determining the origins of Śikharas: “..the kūṭagāra is a self-contained and separately roofed pavilion on any storey of a pāsāda, either a gabled pent-house on the roof; …. where a vimāna is adorned with “countless kūṭagāras; …where a three storeyed pāsāda has seven hundred kūṭagāras on each niyyāha of the pāsāda.” Coomaraswamy’s investigation, thus, is mainly based on the inner meaning of temple and its very reason for being, as opposed to be based on the form itself. Simpson’s investigation, on the other hand, concentrates on the form, especially the curvilinear shape, its origin and the source of thoughts that preceded its formation. It may be appropriate to note in this context that the observation made by Fergusson, whose belief

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8 Meister (1992, p. 44).
9 Meister (1989, p.85), for example, discusses that something that represents, something else by association, resemblance, or convention, especially a material object used to represent something invisible. He rejects the idea of using metaphors and similes as tools for resolving the origins in archeology.
was that it was Indian architecture that illustrated Indian ethnography, it fixed the ever-varying forms of Indian religion, and it reconstructed history, \(^\text{10}\) raises a fundamental question of whether it was the belief-patterns or the architectural-forms that became the point of origin.

In other words, one ends up in a “chicken” or the “egg” situation, where the inquiry is the point of departure, whether it was the ideas that sprung first in the minds of the architects through religion that led to the forms we have now, or whether it was the other way around that the architecture gave a shape to the ideas of Hindu mythology – a point taken by Fergusson. This paper takes the latter stand in that it was the ideas and concepts of Hindu folk tradition that gave shape to Indian archeology in the beginning of the century, rather than the other observation that the archeology gave the ideas for Hindu mythology. Support for the latter view is mainly derived based on a study conducted on the procedures followed in building of a Vaiṣṇava temple’s tower in South India in the latter part of the last century.

**Bāmbu and Umbrella theory**

Simpson makes an interesting analogy between the elevated temple spire and the use of bāmbu in Bengal. According to him, the popular use a long piece of bāmbu in Bengal, with a bit of rag at the end of it, projecting high in the air from a tree serves a purpose of a sign indicating the neighborhood a small shrine or the abode of a holy man.\(^\text{11}\) His further reference to the use of sacred umbrella and the use of bāmbus binding together to form earlier form of temple have a symbolic connection to the origin

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\(^{10}\) Quoted from Chandra (1983, p. 16).

\(^{11}\) Simpson(1891, p. 233.)
of Śikhara, according to Simpson.\textsuperscript{12} This is something similar to the wooden structure in Bhaja: Chaitya Hall. int: wooden ribs in nave ceiling 1c BC Sunga, Bhaja (Fig. 3). Simpson also bases this observation with a claim that the wooden architecture precedes the stone architecture. Because wood is vulnerable to destruction more easily than the stone, there is a period of time in the history, when there was no record for development of Indian architecture, according to Simpson. The use of bāmbū with an yellow rag tied on the top continues to be a tradition not only in the construction of temples, but also any building as a case of inauguration ceremony, which is popularly called pandal kāl nāṭṭu vilā ‘ceremony for the erection of pillar for hut’ in Tamil. According to the custom, this bāmbu remains in the construction site until the temple is constructed fully. If the custom that Simpson refers to in Bengal is identical to that of the one in Tamil Nadu, then it obviously contradicts the guess that Simpson makes about the purpose of bāmbu with a bit of rag at the top meant for attracting the devotees. However, his analogy that the bāmbus binding together to form a shape that is similar to temple spire seems plausible, but lacks any authenticity.

This does not entirely explain neither the curvilinear superstructure nor the square plan with cardinal offsets with projecting vertical bands over the wall’s offsets. Presumably the bāmbu theory does not propose any basis to elucidate the connection between the curvilinear shape and the square altar base, which is understood under the topic of maṇḍala that the scholars have attempted to illustrate in square grids. Meister, for example, emphasizes the need to find the belief-patterns that underlie the Hindu

\textsuperscript{12} Ibid. p. 234.
Simpson’s guess that the origin of spire with curvilinear shape is a case of mutation from the use of bāmbu in high-rise form for attracting the devotees sounds more as a matter of coincidence than of having any religious significance.

The umbrella theory that Simpson proposes is more convincing than the bāmbu theory mainly for the presence of symbolic content in it that umbrellas were used as a royal symbol, and that a sense of dignity is preserved in their “form”, which is “curvilinear” as opposed to any square shaped roof. Thus, his claim that the umbrella being a royal emblem (Fig. A), it became sacred one, and was placed over figures of Buddha and stūpas, and thus changed into regularly constructed roofs is more appealing than the bāmbu theory. Simpson’s view can also be substantiated by the presence of images with curvilinear umbrellas as adornment (Fig. B). Thus, it gives us the reason to believe that spire and sacred umbrella are identical in form and function – form being the curvilinear shape and function being ‘adornment’ and a sense of ‘dignity’. It can also be termed that the “mutation” from “non-sacred” to “sacred behavior” takes place by placing this curvilinear shaped object above a human.

This can also be substantiated by Coomaraswamy’s illustration of the term kūṭagāra, as discussed elsewhere, that a roofed pavilion is used as “adornment” and “foremost”. Noticeably, there are thirteen circular shaped umbrellas in the sculptured Tope at Dras in the Himalayas and they are identical to the same number of umbrellas in Chinese Pagodas but in octagonal shape. Note that the towers in South Indian

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13 Meister (1986, p. 33).
14 Simpson (1891, p. 230).
15 Coomaraswamy (1992, p. 45) emphasizes its significance as: “As the kaṇnikā of a kūṭagāra, because it binds together the other parts of the construction, is foremost (pamukha).
16 Ibid, p. 227 (Fig. 107).
17 Ibid, p. 229 (Fig. 108).
temples such as the one in Sri Rangam Vaiṣṇava temple (Fig. 1) and the Śiva temple (Fig. 5) also contain thirteen terraces.

Thus, the question that is posed before us is not only the origin of the spire, but also the origin of the symbolic relevance to the thirteen umbrellas that constitute the spire. Before we proceed further to explore the origin of the shape of the roof and also the architectural morphology in the early part of the history, it may be worth looking at how the traditional values are pursued at the modern contemporary time in constructing a new temple or temple tower. Despite the fact that there could be much of degeneration in beliefs and practices over the course of long history, there can be reasons to believe that certain fundamental ideas and practices are still retained from the time of their origin. Such ideas and practices may throw some light toward the discussion of their origin. Along this line of thought, an attempt is made here to describe the steps undertaken in
constructing an unfinished tower of the Sri Vaishnava temple in Sri Rangam, Tamil Nadu (Fig. 1). The Sri Rangam Vaishnava temple that was built between 9th and 10th century underwent many invasions and destructions. One of the towers which remained unfinished until the last century was finished between 1979 and 1986 by the then government of Tamil Nadu under the supervision of the saint Jiiyar and the architect Sivaprahasam, a disciple of Ganapathi Stapanthi. Subramaniyan (1987) provides not only the rituals behind constructing this temple tower, but also sketches elaborately the belief-patterns that underlie in each of the stages in the construction process.

Similar to what Meister (1986: 39) opines about South Indian temples that they contain terraced palaces, this tower consists of a spire with thirteen square terraces and thirteen Stūpis on the top (Fig. 1). According to Subramaniyan, all the thirteen terraces constitute the Šikhara, that is the entire tower. Each of the thirteen terraces holds images of thirteen celestial gods, pūtas (demons) and yālis (Fig. 1a). (yāli: a mythical animal with the face of a lion and with the trunk and tusks of an elephant.). See Meister (2003) for a description of how demons and celestial gods form a belief-pattern in Hindu mythology.

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19 Contrary to what is assumed in the North, Subramaniyan (1987. P. 41) treats the entire spire as Šikhara as opposed to just the tower top.
20 Ibid p. 64.
Figure 1a. Picture of Yāḷi on the top of a temple tower in front of the Kalasā.

The first terrace holds images of the main deity and the goddess in a giant form, where as the thirteenth terrace contains a niche called ‘mahānāci’ where the image of daemon called artta nāsi in its scary giant form is kept. The presence of imageries on the tower with a combination of both dæmons and celestial gods clearly constitute an architectural morphology, whose origin may be found from vāstupuruṣamaṇḍala, that represents the figure of a dæmon pinned down on the tips on a sacrificial grounds by the presence of divinities distributed in grids.21

Thus, there is a reason to believe that the thirteen terraces constituting the Śikhara in South Indian temples and the thirteen octagonal umbrellas that constitute the Chinese Bagoda must have a common origin in terms of their symbolizing an idea that evolved as the architectural morphology of that time.22 But, we find no explicit reference for this either in Simpson’s observations or from Subramaniyan’s account of constructing this tower.

22 Kramrisch (1944, p. 190) based on Vāstu-śastrā, notes that a fully developed superstructure of the highest kind has not more than 16 Bhūmīs, and each of these may contain a number of roof-edge mouldings, six for example, the number remaining the same in all the Bhūmīs.
Another dubious nature of belief system may be noted in the context of Toda tribes’ use of stones on the top of the roof on the one hand and the kalasas that occupy the top of Śikhara in Vaiṣṇava temple on the other hand. From what Simpson observes through the custom and practices of Todas, it may be understood that there is a chamber on the top of the roof that contains either relics or a vessel of water used at the funeral ceremonies referring to the slaying. But, the thirteen Kalasās on the top of the Vaiṣṇava temple, each measuring about 10.5 feet in diameter and five feet in height are filled with about hundred bags (about hundred pounds) of seeds of millet, according to Subramanian (1987, p. 57). Although Subramanian makes no explicit reference for its reason, one may tend to think that this is akin to what Meister refers to as “the germinating presence of the manifest”23. Thus, any architectural form, in our case the āmalakā, can symbolize distinct religious beliefs. Toda’s use of āmalakā (made of stone) containing a substance that symbolizes the “slaying of dæmons”; and the use of kalasā in Vaiṣṇava temples containing a substance that symbolizes a quite contrasting meaning, which is “point of creation”.

**Kalasa, Āmalaka, Vase and Seed of Creation**

The imageries constituting Kalasa, Āmalaka and vase have always been interpreted in a number of different ways, and there is no precise definition either to define its origin or its function within the Hindu religious system. Meister (1992: xxi) who, based on the observations of Fergusson and Coomaraswamy, reiterates the fact that the Nāgara and Drāviḍa towers both originate in the same way, states that the spire represents a piling up of many superimposed storeys or roofs, much compressed. He

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23 Meister (1986, p. 86)
further suggests that the key to this origin is āmalaka, the crowning element of a tower, whose appearance at the angles of successive courses shows that each of these corresponds in nature to a roof.

**Fruit, Flower and Pollen Grain**

Like the origin of spire is too complicated to resolve, the origin of āmalaka has also been an object of wider discussion in the literature, especially in the context of identifying its resemblances and comparable objects. Usually, the crown of any spire is assumed to be consisting of two primary objects namely the āmalaka and the top vase, located above the āmalaka. Meister notes that Āmalaka resembles a purifying medicinal fruit: “From Vedic times to now, the lobed myrobalan (āmala) has been recognized as a significant and purifying medicinal fruit.” Contrary to this, however, Subramaniyan describes āmalaka of the Sri Rangam Vaiṣṇava temple as a sacred flower called katali (Fig. 2), with the Vase being compared to the bud of the flower. As noted elsewhere, the pot is filled with the grains of millet - symbolizing the seed of creation – symbolically referring to the middle of the flower where pollen grain is present.

Thus, the belief-patterns associated with temples, images and rituals form an architectural morphology and determining such a system has always been a tedious task for the architects. “.. the task facing architects in the formative period for Hindu temple architecture (from ca. A.D. 400 to 700) was to find means to develop an architectural morphology capable of expressing the complexities of a long religious tradition”. Information contained in architectural literatures like Vāstu puṣṭa, Vedic sources such

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as Rg veda keep the Hindu architectural morphology alive throughout the history of Hindu religion.

Yet, one finds a multitude of interpretations and guesses from the early times in their attempt to identify the underlying architectural morphology, as is evident from Simpson (1891) where the curvilinear shape of the spire was an object of inquiry. This is mainly because of lack of understanding of the scriptural evidences including Vāstu-puṛāṇa, Rg veda and so on at his time. Ability to decipher information from these scriptures gave a new dimension to the understanding of Indian temple architecture, as is evident form Kramrisch (1944). Kramrisch’s work is especially significant in interpreting the architectural forms with metaphysical meanings. His description of the curvilinear shape is made based on Vāstu-puṛāṇa. According to him, it comprises of a curvilinear and truncated body, a neck (kaṇṭha, gala, grīvā) and crowning part (āmalaka) or a pyramidal truncated body and on it a small High Temple (vimāṇa) whose walls form the solid neck of its massive dome-shape as the crowning part. Only after Meister (1986) and Coomaraswamy (1992) the morphological vocabulary providing a more comprehensive account of both forms and functions of Hindu temple architecture emerge.

Meister (2003) accounts for the architectural morphology surrounding the concept of Vāstupuruṣamaṇḍala, which led to a clear understanding of the role of the spire in Hindu temples. Especially, meaning for the presence of both demons and gods along side on the temple spires is understood only from the study of Meister (2003). However, as noted in this paper that all the temple objects don’t carry a single message to the devotee,

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26 Kramrisch (1944, p.176).
instead one finds a multitude of definitions and belief-patterns based on each of those objects. This is especially true in the way the objects such as āmalaka, spire and Śikhara are understood and interpreted in both Drāviḍa and Nāgara styles. Is āmalaka and Vase constitute together to form a single entity that is metaphorically and aesthetically related to a flower, or whether they are associated with two different symbols such as medicinal fruit and a vase? Does the curvilinear shaped spire that constitutes the superstructure, a symbol that is evolved from the image of royal emblem of umbrella, or does it represent a pyramidal truncated body representing the neck (kaṇṭa, gala, grivā)? Further, co-occurrence of both curvilinear shaped spire and square shaped maṇḍapas in both Nāgara and Drāviḍa temples make one to wonder whether they could be two different shapes developed on their own way with two different symbolic meanings – despite the fact that both Kramrisch and Meister are of the opinion that these two structures are superimposed to each other. Like Simpson puts it, due to absence of any monuments with step-by-step developmental paradigms, the questions raised here render multitude of answers, and thus defining architectural morphology of Indian temples becomes a complex endeavor.

**References:**


Artta naasi
Stupis
Giant Naasi
Mandiyal
Panjara naasi
Neck of the Madiyal

Leg height
KanDa

Panjara

Front entrance
Tadumam

Thirteen storeyed King tower - parts. Fig. 1. (Subramaniyan 1987)
Fig. 2. Kalasa in Vaishnava Temple tower, Tamil Nadu
Figure 3. *int: wooden ribs in nave ceiling 1c BC Sunga, Bhaja.*

(Source: [http://dept.arth.upenn.edu/104/images/10403009.htm](http://dept.arth.upenn.edu/104/images/10403009.htm))
Figure 4. Thanjavur Briheeswarar temple built in 11th Century by a Cola King. Square shaped Maṇḍapas and Curvilinear spire co-occur.
Figure 5. Thanjore Brihadiswarar temple, South India with 13 terraces