# Early Indian Architecture and Art

**Abstract:** This article deals with architecture, temple design, and art in ancient India and also with continuity between Harappan and historical art and writing. It fills in the gap in the post-Harappan, pre-Buddhist art of India by calling attention to the structures of northwest India (c. 2000 BC) that are reminiscent of late-Vedic themes, and by showing that there is preponderant evidence in support of the identity of the Harappan and the Vedic periods. Vedic ideas of sacred geometry and their transformation into the classical Hindu temple form are described. It is shown that the analysis of the "Vedic house" by Coomaraswamy and Renou, which has guided generations of Indologists and art historians, is incorrect. This structure that was taken by them to be the typical Vedic house actually deals with the temporary shed that is established in the courtyard of the house in connection with householder's ritual. The temple form and its iconography are shown as natural expansion of Vedic ideology related to recursion, change and equivalence. The centrality of recursion in Indian art is discussed.

## Introduction

Two noteworthy attempts to synthesize ideas about early Indian architecture, which have exercised great scholarly influence, are Ananda Coomaraswamy's essays on the subject that appeared in 1930 and 1931 in the annual journal *Eastern Art* and Louis Renou's article called "La maison védique" (*The Vedic house*) that appeared in *Journal Asiatique* in 1939.[1] Coomaraswamy's essays provided a textual connections for architectural forms and iconography of the period starting with the Mauryas, and Renou used the descriptions of the constructions accompanying Vedic ritual to visualize the form of the house in an earlier period.

Both Coomaraswamy and Renou start with the assumption that the beginnings of Indian architecture are to be traced to the early Sūtra texts that speak of primitive structures. For Coomaraswamy, the Jātakas and the Epics provide textual evidence of the plans of cities and city-gates, palaces, and huts and temples, but glosses over the contradiction in his starting point when he acknowledges that while "the Vedas make occasional reference to the 'cities of the Dasyus,' it is to be observed that in the Brahmanical law books, which are very nearly, if not quite contemporary with the architectural period to be discussed below, cities are despised, and there are no ceremonies for urban life; the *Baudhāyana Dharma Sūtra*, II.3.6.33, says 'It is impossible for one to obtain salvation, who lives in a town covered with dust.'"[2]

The assumption is that the Sūtra texts belong to the period of the Dasyu cities, but these cities are outside the Vedic culture. If the Dasyus are themselves an Indo-Iranian people who show up as "dahyu" in the Iranian literature, the opposition between the Vedic people and the Dasyus is a conflict between groups with kinship relations. On the other

hand, the first millennium, pre-Buddhist period of the early Mahābhārata with its description of cities does not have any account of inimical Dasyu kings. The only way to reconcile this seemingly contradictory situation is to suppose that the Vedic ritual texts describe events from the perspective of the priest families committed to an ideology of simplicity and renunciation, which is an ideology that continued in subsequent times. The Vedic world was like the age that followed, with its own complexity revealed in texts that do not deal with ritual.

Renou was acutely aware of the limitations of his study. He concluded his essay by remarking,[3] "If we rely on Vedic texts, we are in the presence of a type of a house that is extremely rudimentary, composed of an armature of posts, connected at the summit by transverse beams onto which a thatched covering is attached. The walls are woven mats. Neither stone nor brick is used." But acknowledging that bricks were an essential part of the Vedic ritual as in the building of the *Agnicayana* fire altar, he was forced to express doubt at his own conclusions by adding, "Nothing obliges us to consider that the shelters described above were the normal type of private residence; a significant amount of the details that assist us in their reconstruction are provided by descriptions of ritual "huts," the intended use of which is entirely different. And yet no other process of construction is mentioned in these sources. This appears particularly singular today, when we are able to measure [through recently discovered archaeological sources] the degree to which architectural technologies were known to certain prehistoric civilizations of northwest of India."

Renou's sources from the sūtra literature described temporary structures that were part of the ritual and, therefore, he had erred in taking that to represent the normal residence. The error is made particularly clear in Atharvaveda 9.3 where several verses speak of dismantling the rather flimsy structure, of which ritual we know from other sources (Kauśikasūtra) as well. Constituting a practice that continues to this day, the ritual-house is given to the priest who had officiated at the rite as part of his fee. To take this structure as an example of the typical residence is an obvious mistake, especially since such an interpretation is at variance with other evidence from the texts regarding the size and scale of the house that will be recounted shortly.

Renou also failed to address properly the question of why would a people not use bricks in their residence when the same bricks were a very important part of their lives in their ritual. This is especially strange given that this ritual is assigned a time when use of brick houses was very common in this geographical area.

**Sacred Geometry in the Harappan Period**

Important new evidence has emerged in the period since the Coomaraswamy and Renou essays were written that demands revisiting both the early historic period and the Vedic period for their architecture. In particular, we have evidence of archaeological forms from the Harappan period that appear to be according to Vedic norms. A significant building has been found in Mohenjo-Daro (Figure 1i) that has a central courtyard and a symmetric arrangement of rooms.[4] Every other room has a low brick platform that was apparently

used for ritual. It also appears that a fire altar was placed in the courtyard. More evidence regarding fire altars comes from Lothal (Figure 1ii). Both these cases represent apparent Vedic ritual in an urban setting.

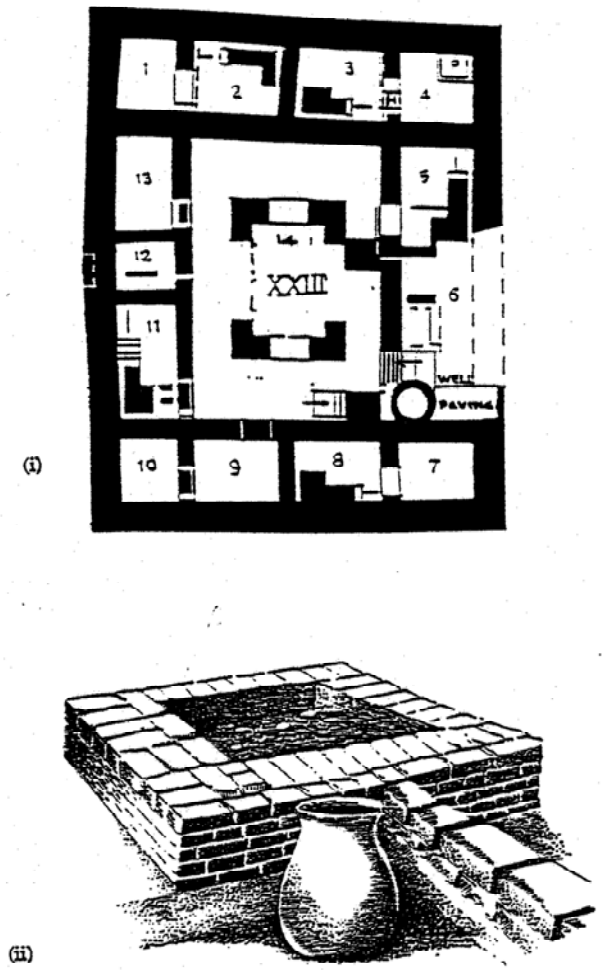


**Figure 1.** (i) Fire temple from Mohenjo-Daro; (ii) Fire-altar from Lothal

This evidence may however not be considered conclusive regarding its relationship with the ritual described in the Sūtra texts. But our objective is not to furnish proof for such a relationship; it is only to demonstrate that continuity exists between the Harappan culture and the period of the Sūtra texts. As they claim themselves, the authors of these texts were aware of cities.

There is additional evidence from the palace in Dashli-3 in North Afghanistan of 2000 B.C. (Figures 2 and 3) that uses yantric forms that have traditionally been considered to be late.[5] Since these forms are obviously in the Vedic tradition (although they would be correctly called post-Vedic), it is clear that palace building was a part of the tradition as early as 2000 B.C., if not earlier.

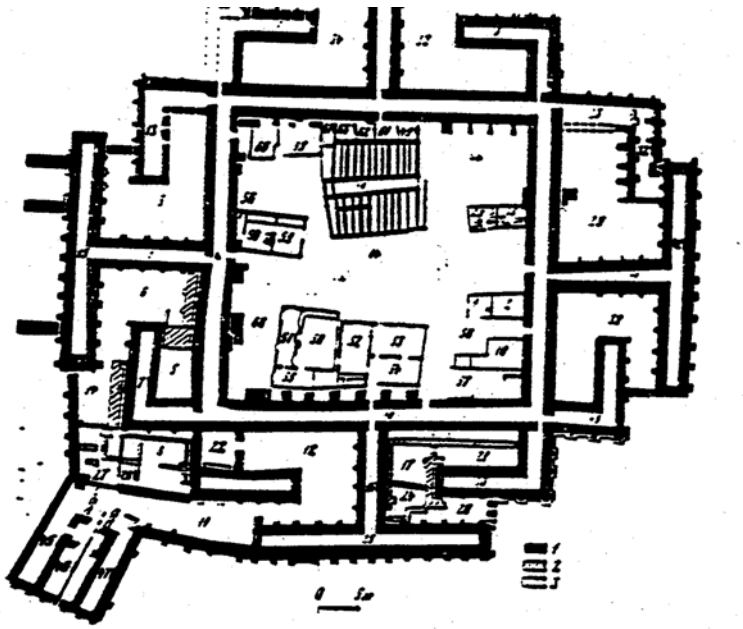

**Figure 2.** The yantric palace at Dashli-3 in North Afghanistan, 2000 BC

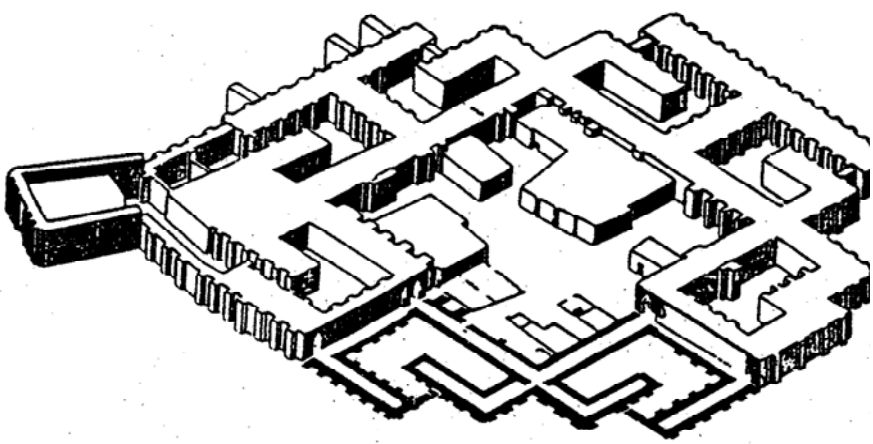

**Figure 3.** Another view of the Dashli-3 palace

If one were to claim that these structures are the footprints of the immigrating Vedic people into India, one is confronted by the paradox that whereas the Vedic people knew palaces and presumably cities on their way to India, they have no memory of it when they actually arrive there. Since this is impossible, one is left with the alternative that these represent the culture of the Vedic people at a later period in their history.

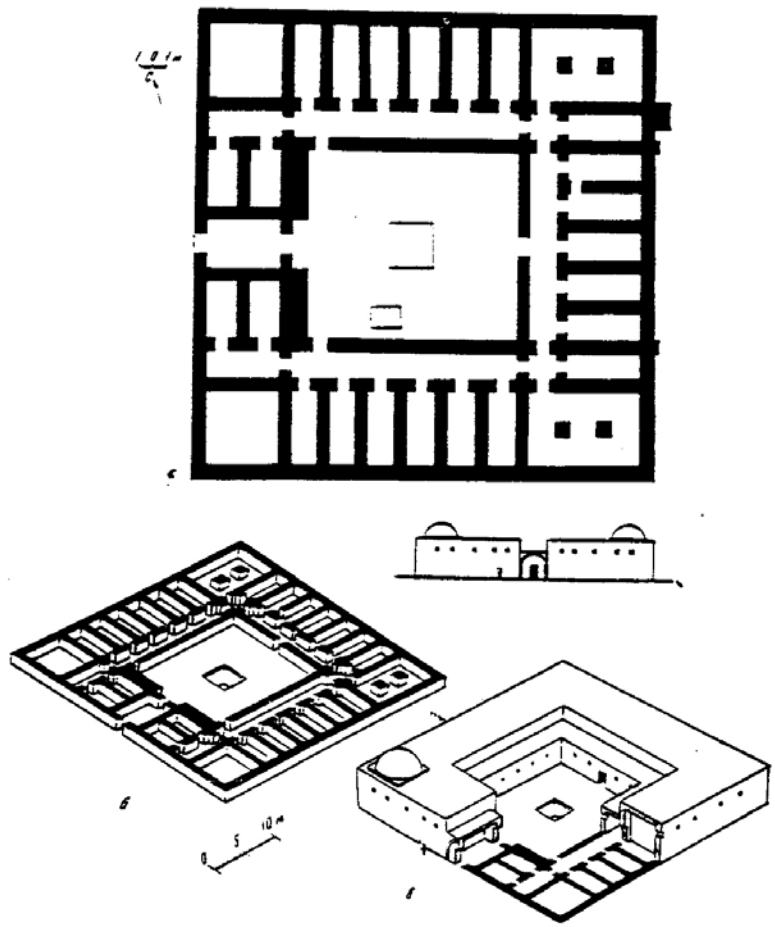

**Figure 4.** Building plan at Kutlug Tepe, Bactria c 1st millennium BC

Figure 4 presents the building plan of a palace in Bactria dated to 1st millennium BC. Its open central courtyard and the altar in the middle are remarkably similar to the plan for sacred and royal structure as provided in the Vāstu texts as shown in Figure 5, confirming continuity with older ideas separated in time and space.

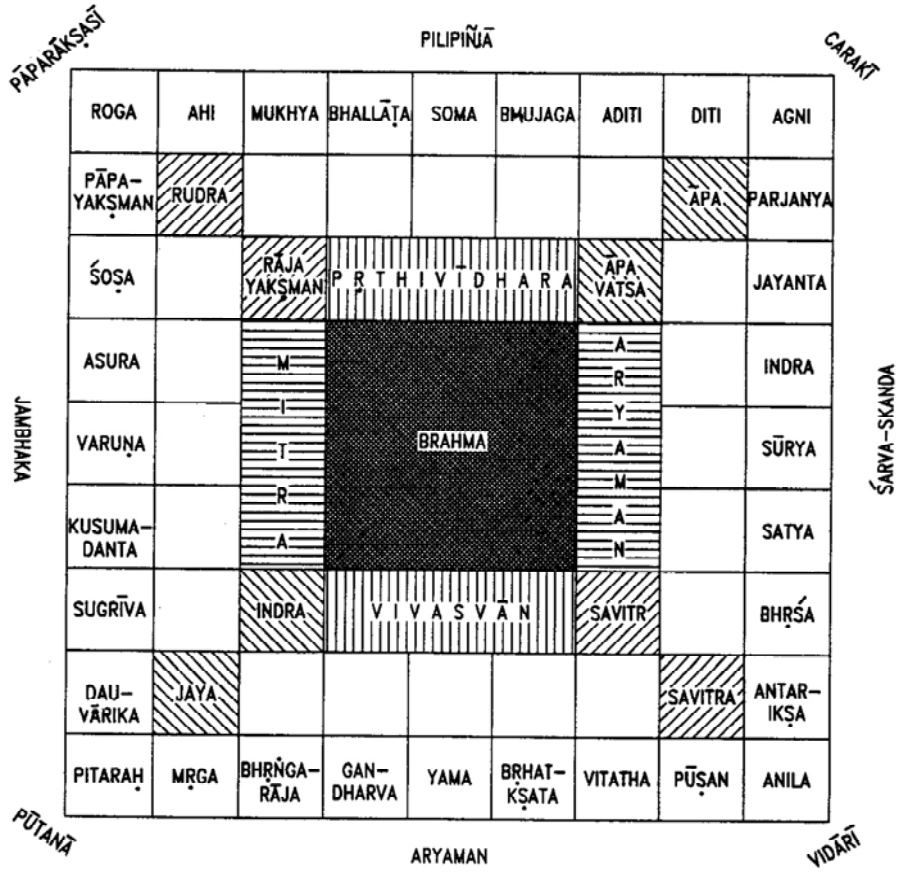


Figure 5. Plan for a sacred structure or house according to Vāstu texts

## The Vedic House

The Ṛgveda speaks of settled space as *grāma* in opposition to the forest as *aranya* (RV 10.90). But within the grāma could be a fort or high town (*pur*). The *pur* made of stone is mentioned in RV 4.30.20. *Pur*s made of metal (iron) are mentioned several places such as 1.58.8, 7.3.7, 7.95.1, 10.101.8.

The place of residence of the individual or joint family was *gṛha*, and *grāma* was a collection of *grhas*. The devatā presiding over each house was called *vāstospati*. Among the many names for residence are *grham, gayah, pastyam, duronam, duryah, damah, okah, yonih, dhāman, niveśanam, chardis, vartih, veśman, varutham, śaranam, vāstuh, śarman, sadanam, sadas, harmyam, vidatham, guhā, astam, ksayah, amā, svasram, ajman, chāyā*, and so on. From a cognitive point of view, the fact of so many different names being used for a dwelling indicates a wide variety of styles and sizes.

An ordinary house with roof was *chardis* (RV 6.15.3); a mansion was called *harmyam,* which would have several rooms, parents, many women, and even a guard dog at the door (RV 1.166.4, 7.55.6, 10.55.6); and a multi-residence complex, together with halls for animals, was called *gotra*. The description of *harmyam* suggests that it had an open

courtyard in the middle and quarters for women at the back. This indicates that the form was similar to the recommended plan of the later vāstu śāstra texts. Sāyana took the description in 7.55.6 to stand for a *prāsāda* (palace).

Palaces with a thousand doors and a thousand pillars are also mentioned. Renou took a similar description in RV 10.18.12 to be a metaphor, arguing,[6] "in one passage of a funerary hymn…the poet supplicates the Earth to allow a thousand pillars to be raised in the cavity where the dead repose, so that her weight will not crush those who take refuge in her breast." However, such a plausible explanation does not work for the reference to such large palaces in RV 2.41.5, 5.62.6, 7.88.5.

To consider the poetic description of a dwelling, we look at RV 7.55, addressed to Vāstospati:

**RGVEDA 7.55**

Evil-dispelling Vāstospati, who takes every form,
be an auspicious friend to us. (1)

O shining son of Saramā, reddened, you show your teeth,
which gleam like lances' points in your mouth when you bite. Go to sleep. (2)

Saramā's son, retrace your way: bark at the robber and the thief.
Why do you bark at Indra's singers? Why do you terrify us? Go to sleep. (3)

Be on guard against the boar, and let the boar beware of you.
Why do you bark at Indra's singers? Why do you terrify us? Go to sleep. (4)

Sleep mother, sleep father, sleep dog, sleep master of the house.
Sleep all kinsmen; sleep all the people who are around. (5)

He who sits, he who walks, and he who sees the people,
we closely shut their eyes; so we shut this house (*harmyam*). (6)

The thousand horned bull, which rises up from out the sea,
by his strength we lull and make the people sleep. (7)

Girls sleeping in the court or stretched on beds,
sweet-scented women, these, one and all, we lull to sleep. (8)

This hymn clearly refers to a house which is substantial, where several families reside and which has a dog guarding it.

One may also look at the question of the residence from the point of view of complexity. The Vedic society has many specialized professions, as evidenced from the Yajurveda 30, the Purusamedha hymn, which lists a variety of secular professions. The professions include dancer, courtier, comedian, judge, wainwright, carpenter, potter, craftsman, jeweler, bowmaker, ropemaker, dog-rearer, gambler, hunter, fisherman, physician, astronomer (*naksatra-darsā*), philosopher, moral law questioner. Further are listed elephant-keeper, horse-keeper, cowherd, shepherd, goatherd, ploughman, distiller, watchman, and the wealthy. Further still, wood-gatherer, wood-carver, water-sprinkler, washer-woman and dyer, servant, courier, snob, pharmacist, fisherman, tank-keeper, cleaner of river-beds, boatman, goldsmith, merchant, and a rhetorician; a cow-slaughterer, speaker, lute-player, forest-guard, a flutist; a prostitute, watchman, musician, hand-clapper. A listing of such diverse professions can only reflect a corresponding complexity in social organization, which would be characterized by different kinds of dwellings.

In two hymns from the Atharvaveda, there is a clear reference to the house as a building. AV 3.12 is a hymn meant to accompany the construction of the house, whereas 9.3 concerns the gifting of the structure built for the ritual to the priest. This latter hymn has been cause of much misunderstanding amongst scholars who are not familiar with the actual practice of ritual, who have taken such a temporary structure to be the prototype of the house in the Vedic village.

**ATHARVAVEDA 3.12: TO THE HOUSE** (At Its Consecration); Ṛṣi: Brahman

Here I fix my house (*śālā*). May it stand in safety, flowing with prosperity. My we approach you, O House, with all our heroes, our fine heroes, our unharmed heroes. (1)

Stand firm on this spot, O House. Possessed of horses and cattle, and of sweet voices,
rich in food, rich in butter and milk, rise up for great good fortune. (2)

With your lofty roof, O House, and your clean barn, you are a sanctuary for everything. May there come to you in the evening the calf and the boy, and cattle streaming along. (3)

May Savitar, Vāyu, Indra, and Bṛhaspati who knows all, establish this house. May Maruts sprinkle it with water and ghee, and King Bhaga deepen our ploughing. (4)

Lady of the mansion, our shelter, kind Goddess you were first fixed by the devās: May you, robed in grass, be gracious to us, and give us heroes and wealth. (5)

Rise on the post, O beam (*vamśa*), with due order; shine brightly and scare away the foe. Let not those who live in the house suffer. May we live a hundred autumns with our sons. (6)

To it may the little boy, the calf and the cattle come; to it the overflowing pitchers with jars of curds have come. (7)

Lady, bring this full pitcher and the streams of ghee mixed with nectar; and with the nectar anoint the drinkers well. Let what has been offered preserve this house. (8)

I bring this water; free from disease, disease-destroying. I enter this house with immortal fire. (9)

**ATHARVAVEDA 9.3:** Removal of the structure that has been presented to a priest as sacrificial reward.

We loosen the fastenings of the props, the supports, and the connections of the house (*śālā*) that abounds in treasures. (1)

O (house) rich in all treasures, the fetter and the knot which has been fastened upon you, that with my word do I undo, as Brihaspati (undid) Bala. (2)

(The builder) stretched, combined and made your joints firm. With Indra we undo these parts as the butcher separates the joints. (3)

From your beams, ties and bindings, and your thatch; from your wings, (O house) abounding in treasures, we unfasten the joints. (4)

The fastenings of the dove-tailed (joints), of the reed (-covering), of the frame-work, we loosen here from the Lady House. (5)

The hanging vessels within which were set up for enjoyment we loosen from you. Be propitious to us, O Lady House, when you are again set up. (6)

You are an oblation-holder, a fire-altar room, seat for the ladies, seat for the devās, O Lady House. (7)

Your covering of thousand-holed net, stretched out upon your crown, fastened down and put on, we loosen with (this) mantra. (8)

He who receives you as gift, O house, and he by whom you were built, both these, O Lady House, shall attain old age. (9)

Return to him in the other world, firmly bound, ornamented, which we loosen limb by limb, and joint by joint. (10)

He who built you, O house, brought together your timbers, he, a Prajāpati, constructed you, O house, for his progeny. (11)

We pay homage to him (the builder); homage to the giver, the lord of the house; homage to the flowing Agni; and homage to Lord (*purusa*). (12)

Homage to the cattle and the horses and to those born in the house. You are rich in births, rich in offspring, and your fetters we loosen. (13)

You cover within the Agni men and animals. You are rich in births, rich in offspring, and your fetters we loosen. (14)

The expanse which is between heaven and earth, with that I receive as gift this house of yours; the middle region which is stretched out from the sky, that I make into a receptacle for treasures; with that I receive the house for this man. (15)

Full of nurture, rich in milk, fixed and built upon the earth, bearing food for all, O house, do not injure those that receive you as gift. (16)

Wrapped in grass, clothed in reeds, the house, place of rest of living creatures, like the night, erected you stand upon the earth, like a she-elephant, firm of foot. (17)

The part of you that was covered with mats unfolding I loosen. You are now enfolded by Varuna, may Mitra uncover in the morning. (18)

The house fixed with mantra, fixed, built by seers -- may Indra and Agni, the immortals, protect the house, the seat of Soma. (19)

A nest upon a nest, a vessel pressed together in a vessel, a mortal man is born, from whom all things spring. (20)

Built with two wings, four wings, six wings; in the house with eight wings, with ten wings, in the Lady House, Agni rests as if in the womb. (21)

Turning towards you who are turned towards me, uninjuring, O house, I come to you facing the west. Within are Agni and the waters, the first door to divine order. (22)

These waters, free from disease, destructive of disease, I bring here. I set forth into the house in company with the immortal Agni. (23)

Do not fasten a fetter upon us; though a heavy load, become you light. Like a bride we carry you, O house, where we please. (24)

From the eastern quarter, homage to the greatness of the house. Hail to the gods who are to be hailed. (25)

From the southern quarter, homage to the house… (26)

From the western quarter, homage to the house… (27)

From the northern quarter, homage to the house… (28)

From the firm quarter, homage to the house… (29)

From the upward quarter, homage to the house… (30)

From every quarter, homage to the greatness of the house. Hail to the gods who are to be hailed. (31)

We see that the house could be of many sizes, with two, four, six, eight, or ten wings. (9.3.21). The dwelling is said to be built by the poets, *kavi* (9.3.19), indicating high regard in the society for both builders and designers. The house is said to be the home of Soma (9.3.19); it adjusts itself to all just like a new bride adjusts to the members of the [the large] family. The Vedic poets viewed a house not merely as an inanimate block of sand and grass, but as a living entity. The divinity associated with the house is addressed in (3.12.5), "Lady of the mansion, our shelter, kind Goddess you were first fixed by the devas: May you, robed in grass, be gracious to us, and give us heroes and wealth." The house consecration ceremony described in this hymn is similar to the one done even today in Hindu families on entering a new home.

## The Goddess

There is continuity in the worship of the goddess that goes back to the Harappan times and even earlier in the older rock art that has been found at many places in India.[7] The next few figures give examples of the goddess theme in the third millennium India.

**Figure 6.** Two sides of a molded tablet showing the goddess battling tiger-demons and killing the buffalo demon as "Paśupati" looks on (Harappa)

**Figure 7.** Hero/Heroine and the beasts (Mohenjo-Daro)

**Figure 8.** A cylinder seal from Kalibangan showing the goddess doing battle

From these representations to the images of the Maurya and the Śunga periods represents a transformation whose details are not known. It is noteworthy that Indian themes are seen sometimes in the expatriate communities of Indian artisans and craftsmen before their attested forms within India, pointing to the work that remains to be done within India.

We do not have evidence showing how worship was performed in the Harappan archaeological period. But we have reference to images that were apparently worshiped in the Astādhyāyī of Pānini, the great grammarian of the 5th/4th century BC. Its terse sutras are written in a technical language in which changes would alter meaning, and its commentaries are attested back to the 4th century. From this text we learn that ordinary images were called *pratikrti* and the images for worship were called *arca* (see As. 5.3.96-100). Patañjali, the 2nd century BC author of the Mahābhāsya commentary on the Astādhyāyī, tells us more about the *pratikrti* and a*rca*.

Amongst other things we are told that a toy horse is called *aśvaka*. (This means that the queen who lay down with the *aśvaka* in the *Aśvamedha* did not sleep with the dead horse.[8]) Deity images for sale were called *Śivaka* etc, but an *arca* of Śiva (Rudra of the earlier times) was just called Śiva. Patañjali mentions Śiva and Skanda deities. There is also mention of the worship of Vāsudeva (Krsna). We are also told that some images could be moved and some were immoveable. Pānini also says that an *arca* was not to be sold and that there were people (priests) who obtained their livelihood by taking care of it.

Pānini and Patañjali mention temples which were called *prāsādas*. The earlier Śatapatha Brāhmana which is late in the period of the Vedas informs us of an image in the shape of Purusa which was placed within the altar.

There is further evidence from the Mahābhārata which is relevant. Although it is generally assigned the period of 400 BC-400 AD, and the Rāmāyana is assigned a narrower 200 BC-200 AD, there are grounds to date it much earlier.

The Mahābhārata tradition itself claims that the text was originally 8,800 verses by Krsna Dvaipāyana Vyāsa when it was called the Jaya. Later, it was enlarged to 24,000 verses and it came to be called the Bhārata. It was transmitted by Vyāsa to Vaiśampāyana and finally recited by Ugraśravas as the Mahābhārata of the 100,000 verses; the two latter rishis appear thus to be responsible for its enlargements.

The Upanisads speak of texts called Itihāsa-Purāna and although the Mahābhārata is called Itihāsa, there is no certainty that this was the only such Itihāsa text that has ever existed. It is generally conceded that there may have been an old kernel of the story going back to the Mahābhārata War. This is where Dāksiputra Pānini has something very important to say. He speaks of the Bhārata and the Mahābhārata in one of his sūtras (6.2.38). This means that the epic was substantially complete by 500 BC, although it may have undergone further modifications and interpolations in subsequent centuries.

The Mahābhārata was an encyclopaedia of its times. One of the most revolutionary things happenings in the religious life of the people during 400 BC to 400 AD was the rise of Buddhism. But examine the hundreds of pages of the epic on religion and there is no mention of it. The only religions mentioned in the text are: Vedic, Sāmkhya, Yoga, Pāśupata, and Bhāgavata. We cannot argue that the rishis who wrote the Mahābhārata kept one of the most important religious ideas of their times out of the story just because they knew this would become controversial in the 20th century.

Even the political life described in the Mahābhārata does not correspond to the imperial phase of the 400 BC - 400 AD. Cattle raids are the big thing in it, not imperial conquest. There are also no references in the epic to the Saiśunāga kings, the Mauryas, the Śungas, or the later dynasties. The Buddhist Jātakas that were written during these royal dynasties, on the other hand, are aware of the characters of the epic. One Jātaka, for example, speaks disparagingly of Draupadi for having had five husbands.

Next is the matter of the unicorn of the Harappan iconography, which is a composite animal whose neck and snout resemble those of the horse or camel, while the legs are equine. The body and the tail are that of the bull. The Mahābhārata speaks of the unicorn, which points to further continuity with the Harappan period. The Purānas call Viśnu and Śiva by the name of *Ekaśrnga*, the “one-horned one.” The *Śānti-Parva* (chapter 343) of the Mahābhārata speaks of the one-tusked boar (Varāha) who saves the earth as Viśnu's incarnation. Here Varāha is described as being triple-humped, a figure that we see in the Harappan iconography. In some engravings, the Harappan unicorn's horn appears to be coming out from a side. In the Sanskrit texts, we have the figure of *Śankukarna*, “one whose ear is like a nail.” The Mahābhārata (*Vana Parva*) informs that there is a temple to Śiva in the name of *Śankukarna Mahādeva* at the point where the river Sindhu meets the sea.

The Matsya Purāna tells us that this Varāha is the same as the Vrsakapi of the Rgveda. The lexicographer Amarasimha asserts that Vrsakapi represents both Viśnu and Śiva.

Varāha, the heavenly boar-unicorn, is described in the Purānas as having muscular, round and long shoulders, a high waist, and shape of a bull. The different parts of this animal are pictured as representing the Vedas, the altar and so on. It has been suggested that Varāha originally meant this composite unicorn and it was only later that the meaning was transferred to that of boar.

**Continuity and Evolution**

The continuity between Harappan reliefs and the Buddhist art, as well as between the Paśupati form of Śiva in Harappa and its representation in later Yoga systems was noted by Kramrisch[9] and other scholars. But there is continuity in the concern with repetition and infinite extension that goes back to the much earlier rock art (Figure 9).

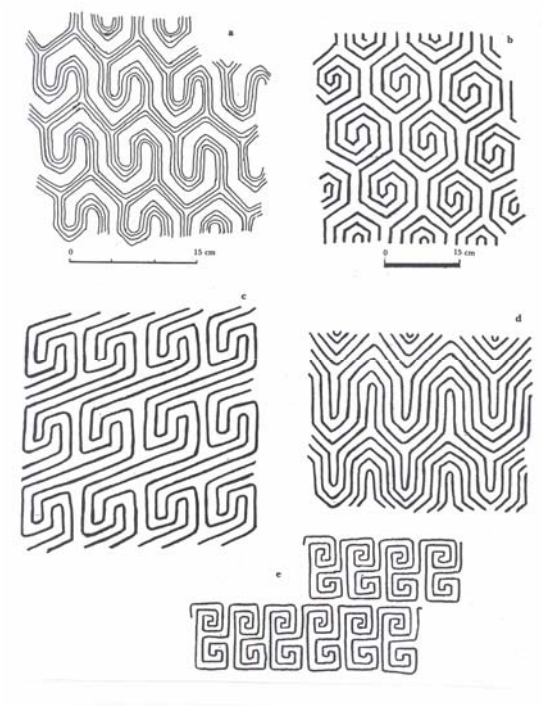

**Figure 9.** Tesselations in ancient Indian rock art

**Vedic Metaphors for Indian Art**

Kapila Vatsyayan has described seven metaphors for Indian art:[10]

1. The seed (bīja) to represent the beginnings. From the Rgveda to the Nātyaśāstra to the Tantrasamuccya. The fruit of *āmalaka* seen as the finial in temple architecture.

2. The vrksa (tree) that rises from the bīja (seed). The vrksa is the vertical pole uniting the earth and heaven. The yūpa of the yajña is the skambha or the stambha (pillar), the *axis mundi* of the universe. The purusa as primal man is superimposed on the vrksa or the stambha.

3. The centre of the purusa is the *nābhi* (navel) or the *garbha* (womb). It is distinct from verticality and brings together the concepts of the unmanifest (avyakta) and manifest (vyakta).

4. The bindu (point or dot) as the reference, or metaphorical centre, around which by drawing geometrical shapes, notions of time and space are apprehended.

5. The śūnya (void) as a symbol of fullness and emptiness. From its arūpa (formless) nature arises rūpa (form) and the beyond form (parirūpa).

6. The equivalence of śūnya with pūrna. The paradox that the void has within it the whole.

7. The relationship of the subject to the creation through light (jyoti), which represents illumination, tejas, sūrya and cit. This light is represented by agni bindu or sūrya bindu which brings us back to the bindu of the bīja.

**Writing**

It is generally known that modern Indian scripts, such as Devanāgarī, Telugu, Tamil, Bengali, are less than two thousand years old and that they sprang from Brahmi, which, in turn, is at least 2,500 years old. Early writings of Brahmi, discovered in Sri Lanka, have been dated tentatively to about 500 BC; the more commonly known Brahmi records belong to the reign of the Mauryan King Aśoka (250 BC). According to B.B. Lal[11], some marks that are apparently in Brahmi on pottery in India go back to about 800 or 900 BC. The Indus script (also called Harappan or Sarasvati) was used widely during 2600-1900 BC. Its starting has been traced back to 3300 BC and its use continued sporadically into the late centuries of the second millennium BC.

We know that writing was used in India prior to 500 BC. Written characters are mentioned in the Chāndogya and the Taittirīya Upanisad, and the Aitareya Āranyaka refers to the distinction between the various consonant classes. The voluminous Vedic texts also contain hints of writing in them. For example, Rgveda 10.71.4 says:

> utá tvah páśyan ná dadarśa vācam utá tvah śrnván ná śrnoty enām
>
> *One man has never seen Vāk, yet he sees; one man has hearing but has never heard her.*

Since Vāk is personified speech, it suggests knowledge or writing. Another verse (RV 10.62.7) mentions cows being marked by the sign of "8". The Atharvaveda (19.72) speaks of taking the Veda out of a chest (*kośa*), and although it may be a metaphor for knowledge coming out of a treasure-house, it could equally have been meant in a literal sense.

The traditional date for the Rgveda is about 3000 BC, with the later Vedic texts and the Brāhmanas coming a few centuries later. The Āranyakas, Upanisads and the Sūtras are, in this view, dated to the 2nd and early 1st millennia. The astronomical evidence in the texts is in accord with this view. Furthermore, the currently accepted date of 1900 BC for the drying up of the Sarasvati river, hailed as the mightiest river of the Vedic age with its course ranging from the mountain to the sea, implies that the Vedas are definitely prior to this date. It is also significant that the Brāhmana texts speak of the drying up of the Sarasvati as a recent event.

This brings the Vedas to the period of the use of the Indus script in India. It is also significant that the geography of the Harappan region corresponds to the geography of the Rgveda.

Even if one accepted the colonial chronology of ancient India, the period of the Rgveda corresponds to the later period of the Harappan culture. This means that the Indus script is likely to have been used to write Sanskrit and other languages spoken in the 3rd millennium India just as Brahmi was used to represent north and south Indian languages 2,500 years ago.

There are many competing theories about the nature of the Indus script. The main difficulty with "proving" any decipherment is that the texts are very short.

Some historians believe that Brahmi is derived from one of the West Asian scripts and, indeed, there are interesting similarities between their characters for several sounds. On the other hand, there is a remarkable continuity between the structures of Indus and Brahmi. Since a script can be used to write a variety of languages—even unrelated--, the question of structural relationship is particularly interesting.

Indus and Brahmi connections become evident when one considers the most commonly occurring letters of the two scripts. In a series of articles[12] in *Cryptologia*, I examined these connections for similarity in form, case-endings for inscriptions, and the sign for "ten". The parallels are extraordinary and the probability that they arose by chance is extremely small.

Since the technical arguments related to the relationship between the two scripts are beyond the scope of this article, let me only reproduce the ten most likely letters from the two scripts (*Tables 1 and 2*).

*Table 1*: Ten most common Brahmi letters in rank order and with percentage

| **Rank** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Brahmi sign** | | | | | | | | | | |
| **Value** | s | m | t | n | p | y | v | r | d | c |
| **Percentage** | 12.6 | 11.2 | 8.6 | 7.9 | 6.9 | 6.5 | 5.1 | 4.6 | 4.2 | 4.0 |

*Table 2:* Ten most common Indus signs (Mahadevan Concordance)

| **Rank** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Indus sign** | | | | | | | | | | |
| **Frequency** | 2245 | 1254 | 837 | 459 | 411 | 406 | 343 | 292 | 256 | 243 |

Notice that the three most commonly occurring letters in both the scripts are the "jar", the "fish", and the "man". The number of matches in the ten signs is 7; the probability of this happening by chance is less than $10^{-12}$.

It is also remarkable that the "fish" sign is used as a symbol for "10" in the Indus (used without the gills; its use was determined by a statistical analysis) and the Brahmi scripts, although the Brahmi "fish" for "10" is shown sideways.

Regarding the similarities between Brahmi and early Semitic scripts, it should be noted that Indic kingdoms, in which Sanskrit names were used, were prominent in West Asia in the second millennium BC. Just as in the Vedic system, the Ugaritics, a people closely related to the Phoenicians and the Hebrews, have 33 gods. More importantly, Yahvah, the name of God in the Judaic tradition, occurs as an epithet for Agni in the Rigveda a total of 21 times (*yahva* in RV 10.110; *yahvah* in RV 3.1, 3.5, 4.5, 4.7, 4.58, 5.1, 7.6, 7.8, 9.75, 10.11; *yahvam* in RV 1.36; 3.3; 4.5; 5.16; 8.13; 10.92*; yahvasya* in RV 3.2 and 3.28). Indian ideas on writing may thus have, through the agency of the powerful Mitanni kingdom of Syria, influenced the various Semitic traditions of the second and first millennia BC.

## Temples and Images

The temple (*devālaya*) is the house for the God or Goddess. The Vāstu texts present the temple plan as homological to a human body. The human body serves as the plan for all creation as in the Purusa-sūkta. The temple structure is homologous to the standing purusa as the *śilpa-pañjara*. At a lower level, a similar measure informs the proportions of the sculpted form, that may be standing or seated, and also of painted figures. This body at its deepest level is a body of knowledge. The structure of music is also to be conceived as such a body; hence one can speak of the *sangīta-purusa*, where there exist precise relationships between ascending and descending notes. According to Śārngadeva, the musical composition is endowed by the composer with eyes, hands, and feet: it must

have balance between opposites: symmetry and asymmetry, movement and pause, recurrence and variation.

The focus of the devālaya is the sanctuary, *garbhagrha*, which is typically a dark, unadorned cell, with a single doorway facing the east. Only the priest is permitted to enter the *garbhagrha* to perform rituals on behalf of the devotee or the community.

In the words of Stella Kramrisch,[13] "The temple is the concrete shape (*mūrti*) of the Essence; as such it is the residence and vesture of God. The masonry is the sheath (kośa) and body. The temple is the monument of manifestation [p. 165]." The expansion may be seen either as proceeding from the central point of the *garbhagrha* in all the directions of space, reaching to the bindu above the finial of the temple and beyond, or as a manifestation held together by a tension between the *bindu* and the g*arbhagrha*, with the axis joining the two being the world axis.

The Indian temple tradition falls into two broad categories,[14] the Nāgara and the Drāvida, whose separation from the earlier tradition is traced back to the middle centuries of the first millennium. In addition, the texts speak of a hybrid category, called Vesara, which in Sanskrit means "mule" that emphasizes this hybridicty.

The *mūrti* in the *garbhagrha* stands on its pedestal (*pītha*). A Vaisnava temple has an image of Visnu, a Śaiva temple has a lingam, and a Devi temple has the image of the Goddess.

The *garbhagrha* is enclosed by a superstructure, and the nature of this superstructure makes the distinction between the Nāgara and the Drāvida type. The Nāgara temple, the mūlaprāsāda, is enclosed by a curved spire (śikhara), while the Drāvida temple has a tiered pyramid form with a crowning top which is called the vimāna. The temple is the embodiment or manifestation of the deity, therefore the names of certain temple parts, as given in Sanskrit, are anthropomorphic: *grīva* = neck, *skandha* = shoulder, *uru*= thigh, *jangha* = lower leg. The *cakras* visualised in the practice of yoga are analogous to the stages up the vertical axis of the temple tower in the South Indian temple and it is marked by corresponding levels in the exterior.

Typically, the temple has a stone or brick structure, which is in the image of a wooden building. Where it is too difficult or expensive to construct a stone or masonry temple, it may be built of wood or any other available material. The idea behind use of stone, but in the image of wood -- normally the building material for the residential house --, is to project that the wooden, or human, nature of the conception is to find expression in the much more permanent stone just as the transcendent category of divinity is given the iconic expression derived from the human world.[15]

There is also the question of the details of the superstructure, and we see repeated forms and motifs, to different scales. This represents the fundamental Vedic idea of recursion in reality. The recursion is also seen in exterior decoration and composition and its basic compositional elements and grammar related to the joining of these elements has been

described in the texts. Adam Hardy sees these elements as shrine-images or aedicules, conceived three-dimensionally and embedded in the body of the temple and on the superstructure.

The temple, together with its images, represents movement and change. This is achieved by the use of projection, extension and repetition across different scales. An extension at the centre of the body of the form is a *bhadra*; when located at the corner, it is a *karma;* located between the *bhadra* and the corner, it is a *pratibhadra*. Their use in different ways creates unique representations out of the basic Vāstu purusamandala.

Movement is also expressed by increasingly concrete representation of an image, from *niskala* to *sakala*. To illustrate the last idea, the emanations of Śiva are in the form of a formless linga as the axis of materiality and consciousness (*niskala*), to the intermediate *niskala-sakala* mukha-linga which has faces in cardinal directions (Sadāśiva), to the *sakala* Maheśa (the anthropomorphic Śiva).

There are also other variations: Śiva with one face and two hands, or with four hands; Śiva with four, five, eight, or twelve faces; Śiva with bull, lion, or elephant; Śiva and Parvatī; Ardhnārīśvara, Harihara, Daksināmūrti, and Aja-Ekapad. The faces emerging out of the plain linga, along the cardinal directions, are those of Sadyojāta, Aghora, Tatpurusa, and Vāmadeva. For Maheśa, the corresponding emanations are Śiva, Visnu, Sūrya, and Brahmā.

Śiva inheres in himself all contradictions, just as is the case with our reality. He grants wealth and prosperity but is himself clad in elephant hide and he is a beggar; he is personification of asceticism, yet half of his body is that of his consort. Śiva manifests in different forms: as *viśva-rūpa* or the universe, as *linga-śarīra* in the hearts of beings, and as the omnipresent *antar-ātman* in the heart of all beings.

Śiva is also known as Maheśvara, the great Lord, Mahādeva, the great God, and Mrtyuñjaya, conqueror of death. He is the spouse of Śakti, the Goddess. His usual mantra is *om namah śivāya*. He is a yogin. When symbolized as the Sun at dawn in conjunction with the moon, he is shown with matted locks with the crescent moon, from which streams the river Ganga, symbolic of the Milky Way. He is smeared with ash, symbolizing all that remains at the dissolution of the universe. This dissolution occurs when his third eye opens, which refers to one’s symbolic death and renewal with the realization of one's consciousness, which is Śiva. His right hand shows the mudrā dispelling fear, while in his left he holds the trident, symbol of the three worlds, on which is bound the damaru.

Visnu is most famous for *trivikram,* the three steps that measure out the universe. These three steps represent the order in change (*vikrama*) that binds the three worlds of the outer, the inner, and the elements. Visnu is God in its moral embodiment, represented by word and form, whereas Śiva is the inner core of reality.  Visnu is the universe, Śiva is its axis.

The dichotomy of the phenomenal world may be seen through the lens of ongoing change associated with Nature, or prakrti. According to the Tantras, transcendent reality manifests itself in to the pair Śiva and Śakti. Śiva, paradoxically, is the cause of bondage; Śakti the force of liberation. The Goddess is the life force of the universe. She is represented by the vowel "I" in Śiva's name; without it Śiva is Śava, a dead body.

In Śiva temples, the lingam is generally placed before an image of his vehicle (*vāhana*) Nandi the bull.

## Ritual and Transformation

The temple ritual is meant for self-transformation. In its most iconic form it is the Vedic sacrifice, which is the hallmark of sacred theatre. But this theatre need not be done externally, and it may also be performed through mediation.

As pūja, worship consists of nyāsa (establishing the icon), dhyāna (meditation), upacāra (offering), and japa (mantra recitation). The upacāra of the mūrti is done in 16 steps: āsana (establishing the mūrti), svāgata (welcome), pādya (water for washing feet), arghya (rice, flowers), ācamana (sipping water), madhuparka (honey, ghee, milk, curd), snāna (bathing), vāsana (clothes), ābhārana (gems), gandha (perfume and sandal), puśpa (flowers), dhūpa (incense stick), dīpa (flame), naivedya (food) and namaskāra (prayer).

The temple is the seat of secret teaching, as well as formal education in the pāthśālā (school). It is also the place where creativity that connects the devotee to Īśvara is cultivated; hence it is also the seat for dance.

The relationship between dance and architecture has been addressed by Kapilā Vātsyāyan[16] and Padmā Subrahmanyam.[17] Their work reinterprets śāstric material, especially the *karana* of the dance as described in the Nātyaśāstra. Padmā Subrahmanyam's central intuition was that the *karanas* of the Nātyaśāstra were representative of movement and not static posture. This was confirmed in the work by Alessandra Iyer[18] in her analysis of the dance poses found in the great ninth century Śiva temple at Prambanan in Java.

In śāstric dance, the *angahāras* and the *pindis* form the larger grouping of *karanas*. This is in accord with the repetition and enlargement of basic forms in the temple architecture.

## Concluding Remarks

This article began by showing the error in the analysis of Coomaraswamy and Renou of the Vedic house, which has misled generations of art historians. It was shown that the Atharvavedic descriptions of the structure, that have long been taken to describe the typical Vedic house, actually deal with the temporary shed that is established in the courtyard of the house in connection with householder's ritual.

The article further dealt with the continuity between Harappan and historical art and writing and it filled in the gap in the post-Harappan, pre-Buddhist art of India by calling attention to the structures in northwest India (c. 2000 BC) that are reminiscent of Puranic ideas. It summarized evidence related to the Vedic ideas of sacred geometry and its transformation into the classical Hindu temple form. We have also explored the connections that tie the details of the temple form and its iconography to fundamental Vedic ideas related to transformation.

There also exist interesting questions of the relationship between Indian and Western art and diffusion of ideas.[19] In particular, there exist interesting parallels between Indian and European religious architecture that are worthy of further study. These will be taken up in a future article.