

5. Aesthetics of Fractal Patterns in Kandariya Mahadev Temple

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Vastu vidya stresses on the power of geometry and patterns as these create structures to benefit the human beings in all aspects of life. Vastu shastra focuses on instituting perfection in the space in two ways: numbers and formula; and through geometry (two or three dimensional). As per Vast shastra all entities are made of the five essential primordial elements- fire, water, air, space, and matter- and the ancient sages tried to maintain a harmony between the elements to avoid destruction- “so that microcosm is a replica of macrocosm. These similarities establish the resonance... through numbers,... or geometry.... The mutual co-ordination establishes ... balance, harmony and rhythm” (Gupta 615). These geometrical patterns have different effects on life determined by the differences in their shapes, sizes, number and orientation. Fractals are geometrical shapes, curves to be precise, either two-dimensional or three dimensional, in which each part possess characteristics of the whole figure. These recurring geometrical figures are similar to each other, existing in continuum- ‘A fractal is a never- ending pattern. Fractals are infinitely complex patterns that are self- similar across different scales. They are created by repeating a simple process repeatedly in an ongoing feedback loop” (Sardar & Kulkarni 532).

Even before the term fractal was coined by Mandelbrot, and the establishment of the field of fractal geometry, these patterns were unduly popular among the ancient Hindu mathematicians and builders; and such an epistemological brilliance is manifested in the temples of Khajuraho, especially the Kandariya Mahadev Temple. The residents of ancient India very well- received the idea of fractals owing to its perpetual existence in nature- rivers, mountains and ranges, clouds, to name a few; and being devout worshippers of the forces in nature they began relating the phenomenon of fractals to the process of creation and came to use these while structuring the temples, a tribute to their creator. The ancient Indians observed that the fractal principles were followed in mountains, trees, as well as the flowing water, and this observation gave them “hints of creation; the principles of self- similarity, iteration, repetition” (532). Hence, the Hindu Temples were designed and constructed as miniature forms of the Cosmos, as it was based on the principles of fractal geometry that brought about a balance, harmony and peace.

The Kandariya Mahadev Temple is the largest temple in the western group of temples which presents intricate carvings and sculptural details throughout; these are evidences of Vastu art. The aesthetic dimension is well articulated in the beautiful and seductive sculptures carved on the pillars, facade, and the niche, which invoke the *Shringara* Rasa as these sculptures are men and women in intimate ‘love making’ positions symbolizing creation itself- “Various elements and a number of figures displaying sexual gestures on the temple fabrics symbolize creation among other metaphors” (Dutta 210). Kandariya Mahadeva temple is not only built on Vastu shastra principles but is produced to symbolize cosmic order on Earth. This temple is “an account of the rhythmic crescendo of architecture perfected by the days of yore” (Kandariya Mahadeva Temple 268).

The details on the temples are geometrically not the exact repetitions of the central body of the temple, yet it repeats the concept of creation and body. The tiny figures express the theme of the

smallest unit of time, *paramanu* (atom) and this consciousness is sketched against the cosmos or the larger unit of time. These tiny figures are the images of gods, the marker of the spiritual path leading to eternity. Each whirl of petals is arranged on a different level, and the differences of levels and concentric floral patterns serve as a metaphor for unity of infinity and inspires the people to seek *moksha*. These concentric patterns, along with ceiling panels, rhythmic horizontal friezes maintain a harmony of fractal figures in the whole of the building. The interior or the temple, just like its exterior, is adorned with carvings of flora consisting of certain figural details that guard the inner sanctum from the negative energies. Floral patterns are spread across the tall ceiling of the temple on several magnificent panels which apart from invoking the *Shringara* rasa also depicts the cosmos through the fractals. The carvings are so intricate and fine that it gives the illusion of the blossoming of flowers- “From each bud four petals are bloomed then from four petals eight petals are generated and again from this 8- petal flower a 12- petal bloom is born” (Dutta 210) The flower with twelve petals could be a reference to the *Anahata Chakra*, which is located in the centre of the chest and have the *Shiva* (consciousness) and *Shakti* (nature) as its divinities. Each petal stands for a quality- compassion, love, patience, purity, understanding, harmony, peace, kindness, forgiveness, joy, clarity, and bliss. The flowers and figures of nature are often regarded as divine figures in Vastu and the temples “should be decorated with auspicious elements such as birds, trees, Svastika designs, human couples, creepers, aquatic animals, and lotuses” (Bhattacharyya 239).

The Kandariya Mahadev Temple has distinct parts, out of which the three most significant are the *pitha*, *jangha*, *sikhara* where the fractals manifest itself. The *pitha* is the base of the altar, which is further divided into minor parts that are repetitive. These fractals of the central mould repeat in numbers around the plan in different scales. The walled portion of the temple shrine is the *jangha*. The fractals are generated from the folds at the base and reoccur in a repetitive manner forming the decorative works on the temple walls. Finally, the *sikhara* or the top of the temple also has fractal figures; it also holds the Ghanta (topmost part) that consists of self- similar ribs, curves like closed petals of lotus stretching in 360 degrees. As mentioned in “Exploring the Fractal Architecture and Sacred Geometry of Hindu Temples”, the tower of the temple exhibits self-similarity. There is fractal iteration and abundance of mini replicas of the main structure that are repeated at various scales. The fractals give the temple a sense of completeness, since it groups all the parts together to form a whole where each part represents the whole- “From an aesthetical view point a fractal geometry brings about ‘order in chaos’ and thereby ‘a beauty in complexity’” (Sardar & Kulkarni 536).

The architecture of Hindu Temples, therefore, is strictly suggestive of the creation, or the “microcosm of cosmos” (Dutta 212), and in connection to this one can easily understand the symbolism behind the aesthetics of the temple. The fractal patterns encapsulate the idea of unity. Each part of the temple is a microcosm that holds the essence of the whole within. In this way, the patterns on the temple are holonomic. The mandala pattern of the sanctum and the shikhara represent the totality of creation, life and cosmos. The energy of creation which is formless is encoded in the structural form of the temple. Kandariya Mahadev Temple, is not just a seat of God. It is the form of God as suggested by the fractal details on the temples. The aesthetics of the temple does not only make us aware of the exterior beauty and magnificence of it, but also makes comprehend the universal- “The world being a divine artwork” (Dutta 212) where there is symmetry and order even in chaos and complexity. This architecture confronts us with the divine and spiritual character of the cosmos amassed in the very structure of the stone.

Thus, the temple’s fractal geometry serves a greater purpose than just an ornamental device. The patterns are representative of creation en masse. These fractal patterns, thus, become aesthetic as they

are sensory (visual) stimuli that represent the cosmic energy and the structure of the universe, leading us towards a higher order of understanding: the cosmic consciousness.

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