

The *Vāstu* Order as an Alternative Concept for Analysing Javanese Temple Architecture

Tatanan *Vāstu* sebagai Konsep Alternatif untuk Menelaah Arsitektur Candi Jawa

Aditya Bayu Perdana and Kemas Ridwan
Kurniawan
University of Indonesia

Correspondence:
jimeildotkomm@gmail.com

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Abstract

This paper focuses on the architectural order of ancient Javanese temples. Contemporary writings often use a tripartite order to conceptualize Javanese temple architecture, which divide the edifice into three parts consisting of head, body, and feet. However, the overgeneralized nature of the order does not accurately represent the complexities of Javanese temples which contain diverse architectural elements. This has made discussion of Javanese temple architectural traits somewhat limited and undetailed. Further, the textual basis of this order is questionable. The concept has not been found in authentic Old Javanese source and only attested in modern sources as a conjecture. To support more nuanced discussion of Javanese temple architecture, the author proposes an alternative architecture order, dubbed the “*vāstu* order”. This order is created using an architectural-historical research method in analyzing historical architectural treatise and samples of Javanese temple. Samples are limited to Hindu temples from the Mataram era (8-11th centuries).

Comparison that the authors have conducted find that the elevation of all samples can visually divided into seven parts of the *vāstu* order: *upapīṭha*, *adhiṣṭhāna*, *pada*, *prastara*, *gala*, *śikhara*, and *stūpi*. However, further inspection (using the temple’s head as an example) shows that each part has an unusual or even unprecedented architectural elaboration from the supposed Indian prototype. This observation contributes to the notion that Javanese temples shows a complex amalgamation of various Indian architectural elements into a distinct creative form. This study demonstrates that a conceptual shift from the conventional tripartite order into a more refined *vāstu* order permitted more detailed observations in various architectural elements of Javanese temples. Applying and testing the *vāstu* order to other temples would perhaps yield a more robust architectural order that is useful in revealing the nature of Javanese temple architecture and its position within the web of cultural exchange between India and Southeast Asia.

Tulisan ini berfokus pada tatanan (order) arsitektural candi Jawa. Tulisan kontemporer kerap menelaah arsitektur candi menggunakan tatanan tripartite, yang membagi tampak candi ke dalam tiga bagian: badan, kepala, dan kaki. Meski umum digunakan, tatanan sederhana ini tidak merefleksikan secara akurat kompleksitas candi yang memiliki banyak elemen arsitektural. Akibatnya, upaya

passive recipient of foreign civilizing force in an Indian-centric model³, which has been criticized (among other faults) for its colonialist perspective⁴. More recent studies by scholars such as Miksic & Goh (2017), Reid (2015), and Rush (2018) have shown much evidence of Seasians as active participants of the exchange. By the time cultural contacts between classical Indian society and Seasia intensified in the early common era, Seasians has already developed their own complex societies⁵, many of them with pioneering navigational skills that supported extensive maritime trade routes⁶. In this background, Seasians were well acquainted with societies from a wide range of regions, India being one of them, and were capable of creative interpretation in response to diverse cultural influences and local interests. This cosmopolitan view has led to a more dynamic and complex understanding of Seasian cultural exchange.

Reflecting the paradigm shift in the development of Seasian studies⁷, early views of Javanese temples also tend to ascribe their architectural authorship to Indian settlers. Little credit was given to native inhabitants of the island, if given any at all⁸. More extremely, some authors assumed Javanese temples as imperfect copies of Indian temples, which degenerated in the hands of the natives as influence from India waned⁹. As the study of Seasian culture developed, recent studies such as Degroot (2009), Romain (2011), and Herwindo (2018) has highlighted significant local innovations that made Javanese temples a unique architectural creation. Its uniqueness is attributed to characters specifically attuned to the landscape of Java, but without dismissing the undoubted role of Indian sources which were creatively reinterpreted as they arrived in the shores of Java. Javanese temples in this regard are edifices that not only show elements of local genius, but also the cosmopolitan web of cultural exchange between India and Seasia.



Shore temples of Mahabalipuram
Kanchipuram, Tamil Nadu, ±725 CE



Candi Arjuna
Batur, Central Java, ±750 CE

Fig. 1 Near-contemporaneous southern Indian temple and Javanese temple. Source: Ajaybeny1989 (2019) and Michael Gunther (2008a).

In reviewing Javanese temple literature however, one cannot help to notice that architectural discussion tends to be limited, in contrast to other matters such as chronology, epigraphy, and iconography¹⁰. Beyond select scholars such as Dumarçay and Herwindo, the authors agree with Lehner (2017:23) that “almost all [scholarly works regarding Javanese temples] focus on literature, relief and sculpture and their iconography and the dating of the buildings, whereas not much has been done so far in terms of contextualizing the architectural concepts of Javanese *candi* within the

³ Especially popularized in the 1920s by writers of Greater India Society. For example, Majumdar (1941, 1963)

⁴ See Manguin (2011:xv) and Rush (2018:14) for discussion.

⁵ In accordance with what Munandar (2005) termed as *kesejajaran*, or parallelism, in terms of cultural development rather than dominance of one over the other.

⁶ Reid (2015:33)

⁷ See Acri (2017) for discussion.

⁸ For example, Raffles (1817, vol II, 6, 63), Crawfurd (1820: vol I, 158), Van Erp (1921: 11), Wolff Schoemaker (1924)

⁹ As criticized by Bosch (1961:5).

¹⁰ For example, in Stutterheim (1931:1), Cœdès (1975:255), Joordan (1999:228 onward)

history of architecture in India and continental Southeast Asia”. This limitation is most apparent when one tries to search for nuanced architectural description between temples. As many details are prone to be glossed over, it is difficult to find architectural description beyond brief generalization overshadowed by non-architectural discussion. An example of this is Jordaan’s (1999:232-235) claims that Javanese temples are transplanted Indian edifices. This claim was based on cursory architectural comparison eclipsed by analysis of the putatively foreign Śailendra dynasty, which has been criticized by scholars such as Imran (2017:471-473). The absence of detailed architectural terminology and discussion stood in contrast with Indian temple literature. From classical treatises such *Mānasāra Śilpaśāstra* to modern scholarship by writers such as Acharya (1994), Kramrisch (1976), and Hardy (2007), Indian temple literature employed a rich terminology to refer diverse architectural elements and detailed order. This provided a framework that greatly enhanced typological and comparative studies of its architecture.

As a popular Indonesian saying goes, *tak kenal maka tak sayang* “if you don’t recognize it, you can’t be passionate about it.” Indeed, lack of recognition is a problem that has left many architectural elements of Javanese temple unnamed and unknown. The very act of naming would have been significant in a way of granting visibility to these elements and permits better understanding and appreciation to their intricate qualities¹¹. Thus, a more detailed and systematized architectural order has the potential to conceptualize Javanese temples in richer ways and may pave more scholarly contributions from the architectural field.

Based on the above background, this paper raises two main questions: Is there a compelling basis for the simplistic order that is commonly used in contemporary Javanese temple literature? Is there a better way to conceptualize Javanese temples that permits more detailed observations of its architectural elements?

Methods

The focus of this paper is on architectural order. An architectural order can be defined as a system of rules regarding the shape, proportions, and placement of various elements that forms an architectural arrangement. Adrian Forty (2004:240) described order in architecture as “the attainment of beauty through the relationship of parts to the whole”. While many architectural publications tend to relate (or even equate) the term “order” with those of classical Greek and Roman architecture, architectural order is not an exclusively Western phenomenon and may be found in various architectural traditions throughout the world. Order in architecture is experienced when it can be understood intellectually. To be able to appreciate the invisible set of rules that binds disparate building parts into a coherent arrangement inspire a certain sense satisfaction that the building in question is familiar, stable, and approachable. Even when a certain type of architecture takes disorder as its theme, for it to become comprehensible it will arrive eventually at a different type of order¹². Comprehending architectural order is also crucial in typological and comparative studies, as outlined by works of 19th century architect/writer J. N. L. Durand¹³. In the absence of an order with adequate detail as a basis of comparison, the relation that governs between elements and extant buildings would not be discernible.

¹¹ Tuan (1991:688)

¹² Thoenes, Byatt (2017:288-289); Janson, Tigges (2014:209-2011)

¹³ Durand (1819: 28), as summarized in Madrazo (1994)

In order to examine the architectural order of Javanese temples, this study was conducted using a qualitative method through textual analysis and typological comparisons. Using existing *candi* order as a point of critique, the main research strategy used in this paper is architectural-historical analysis in which the examination of data containing subjective constructs and physical objects become key issues¹⁴. Data included excerpts from historic writings as well as notes, drawings, and photographs of various Indian and Javanese temples. In regard to the historic writings, the author pays close attention to treatises that are architectural in nature such as *Mānasāra Śilpaśāstra* and how differing interpretation of its principles may indeed produce varied architectural iteration¹⁵. Through study of abstract architectural principles in historical treatises (subjective constructs) complemented by field observations of extant buildings (physical objects), this study proposes an alternative ordering system to conceptualize the architecture of Javanese temple.

For sample of this study, the author used several central Javanese temples dating from the Ancient Mataram era between 8-11th century. Samples are limited to temples with Hindu characteristics and exclude eastern Javanese temples, which are comparably younger and considered architecturally distinct from central Javanese ones. Based on temple periodization outlined by Herwindo (1999:126), the authors chose Arjuna, Bhima, and Gedong Songo to represent the early classical period (<800 CE) and chosen Merak, Ijo, and Prambanan to represent mid-classical period (800-900 CE) (Table 1). This is the same set of temples that was used in one of the authors' previous study¹⁶. Other temples that might be pertinent to the discussion are also noted.

¹⁴ Groat, Wang (2013:179)

¹⁵ Sachdev, Tillotson (2002); Hardy (2009:54)

¹⁶ Perdana (2019, 2020)







EARLY CLASSICAL ERA				
	Temple name	Arjuna	Bhima	Gedong Songo II-V ¹⁷
	Administrative Location (province)	Dieng Kulon, Dieng Kulon, Batur, Banjarnegara (Central Java)	Karang Sari, Dieng Kulon, Batur, Banjarnegara (Central Java)	Candi, Bangundan, Semarang (Central Java)
	Coordinates	7° 12' 18.3" S 109° 54' 25.0" E	7° 12' 51.7" S 109° 54' 37.8" E	7° 13' 36" S 110° 20' 24" E
Estimated Year of Construction	±750 CE	±800 CE	750 – 800 CE	
MID CLASSICAL ERA				
	Temple name	Prambanan	Ijo	Merak
	Administrative Location (province)	Bokoharjo, Prambanan, Sleman (Yogyakarta SAR)	Groyokan, Sambirejo, Prambanan, Sleman (Yogyakarta SAR)	Merak, Karangnongko, Klaten (Central Java)
	Coordinates	07° 45' 07.4" S 110° 29' 29.2" E	07° 47' 01.8" S 110° 30' 42.9" E	07° 40' 11.2" S 110° 33' 12.1" E
Estimated Year of Construction	850 CE	±900 CE	±900 CE	

Table 1 Samples of central Javanese temples chosen for this study. Source: Midori (2007a), M Yusril Mirza (2017a), Michael Gunther (2008b), Crisco 1492 (2013a), Crisco 1492 (2014) and Risanprasetyo (2018).

Literature Review

Problems with the Tripartite Order

Lack of Details

The closest thing to an architectural order that Javanese temples have is the concept of three-part division. The concept goes that elevation of all temples can be broadly divided into three parts: *kepala* (head), *badan* (body), and *kaki* (feet). In Hindu temples, this division corresponds symbolically to a macrocosmic division of *svarloka* (upper world), *bhuvvarloka* (middle world), and *bhurloka* (underworld) respectively¹⁸. We shall refer to this as the “tripartite order,” a symbolic and architectural order conflating *kepala-badan-kaki* and *svarloka-bhuvvarloka-bhurloka* (Figure 2). This convenient division is prevalent in Indonesian literature¹⁹, and often implied as an all-

¹⁷ *Gedong Songo* (Jav. nine buildings) are a series of small complexes scattered in the southern slope of Mount Ungaran. Despite its name, there are less than nine numbered sites today. Several sites reported during the colonial era has since degraded, and several adjacent sites may be designated with different numbers between modern and colonial reports (Degroot, 2009:316-321)

¹⁸ In Buddhist *candi*, the terms *arupadhatu*, *rupadhatu*, and *kamadathu* are used instead for the same three parts.

¹⁹ Academic and popular alike. Academic publications include Soekmono (1995:106), Anggoro (2019:125). Popular publication includes Ramelan (2017:5), Wibowo (2020:259)

encompassing feature of all Hindu temples, even ones outside of Indonesia²⁰. Such perceived universality, perhaps, has led it to be treated as a basic fact that is essential to be repeated but does not merit in-depth explanation, or even a citation²¹.

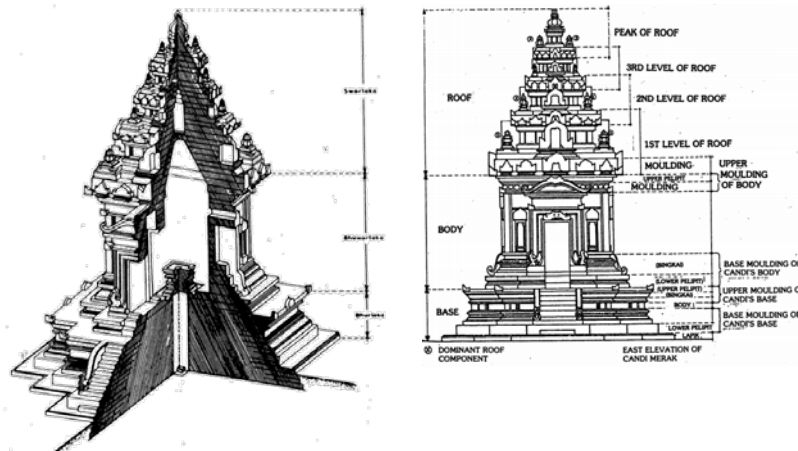


Fig. 2 Javanese temple with the conventional tripartite order. Source: Soekmono (1995:106) (left), Atmadi (1988:313) (right).

While relatively straightforward, the authors argue that the tripartite order is a poor conceptualization tool that overgeneralize the architecture of Javanese temples. One look at the upper part of any temple shows a myriad of interacting architectural components: finials, parapets, niches, antefixes, aediculas, corner towers, and many more. Different configuration of these components resulted in nuanced difference between each temple design, such as between Gedong Songo and Prambanan. Readers could imagine the author's exasperation when sources only refer to this whole part unsatisfactorily as a monolithic *kepala* object²². Only some architectural components have reasonably agreed upon appellation, such as *pelipit* (mouldings) or *kala-makara* (a common motif found in doorways and niche frames consisting of a giant *kala* head and scrolling *makara* sea monster), but many others such as those in the *kepala* are only referred with poorly-defined terms or omitted from discussion altogether. Archaeologists working with Javanese temples today unfortunately do not develop a consistent naming practice for temples architectural components and often took for granted the somewhat unsystematised designations that are used in colonial era studies²³.

The inability to communicate architectural details of Javanese temples is a recurring problem in many publications, even those made by writers from architectural background. For example, *Architecture and Its Models in South-East Asia* (2003) by Dumarçay was criticized by Mannikka (2005) as an unwieldy book because Dumarçay failed to define (through words or images) many architectural details that are integral to his arguments²⁴. Dumarçay's statements heavily relied on implicit knowledge that are only apparent to readers with generous intuition²⁵. This is not ideal even within the parameters of architectural research which, among its goals, suppose to articulate

²⁰ For example, in Ramelan (2017:5). Although, publications such as Chihara (1996:46) only mention tripartite in conjunction with Javanese *candi* and do not apply it elsewhere.

²¹ For example, in Istari (2015:1-2), Paramadhyaksa (2013:23,29-33)

²² For example, Atmadi (1988:24-26), Wibowo (2020:259)

²³ Personal communications with Dwi Pradnyawan, Archaeology Department, Universitas Gadjah Mada, Yogyakarta.

²⁴ Further, Mannikka also criticized Dumarçay for his overreliance in outdated references (Mannikka, 2005: 404)

²⁵ Dumarçay (2003:103) wrote that "the architectural history of each of the components of an ensemble ... had important consequences for [the temple's] plan." Despite this importance, his discussion left many architectural components vague and unnamed.

implicit knowledge²⁶. Overreliance to the simplistic tripartite order, which does not adequately represent the architectural complexities of Javanese temples, further contribute to this problem and stymied nuanced discussion of Javanese temple architecture²⁷. The author agrees with Dhar (2007:260) that “so far, what is encountered [in Javanese temple literature] are some substitute terms employed in the local language but not an organized and structured architectural vocabulary that may be appropriate for detailed, scholarly analysis.”

Lack of Contemporaneous Sources

Other than its somewhat limited utility in describing detailed elements of extant temples, literary review also brought doubt on the symbolism and origin of the tripartite order. Indonesian publications tend to portray the order as a basic fact, even though reference that clarifies the origin of tripartite order came from is curiously sparse. Is it an Indian or Javanese conception? Is it an order mentioned in historical texts, or is it a modern scholastic interpretation?

In Soekmono’s seminal and often-cited work, *The Javanese Candi: Function and Meaning* (1995), the earliest mention of the tripartite order is a terse, matter-of-fact description that cited Dutch archaeologist W. F. Stutterheim²⁸. While it is acknowledged that Stutterheim writings are important (and still widely cited today) in shifting Indian-centric interpretation in the study of ancient Javanese artefacts²⁹, his methods are not without fault. In his effort to downplay Indian influences, Stutterheim was prone to cite disparate Austronesian practices without adequate analysis in explaining unknown aspects of Javanese temples. Adding to his tendency to misrepresent conjectures as already proven facts, his writings has led to some erroneous conclusions regarding Javanese temples³⁰. For example, Stutterheim argued that *candi* are tombs used for housing royal cremated ashes, based on his observation of Austronesian burial practices such as Balinese cremation (Bal. *ngabén*). This function, he asserted in many of his writings³¹, makes Javanese *candi* incomparable with Indian temples. This is an outdated theory that Soekmono helped debunk by showing that such function has no basis in Old Javanese literature, contemporaneous structures such as those in Angkor, and even closer look at Balinese *ngabén* practice³². Further, what was thought as cremated remains in foundation pit boxes (Jav. *pripih*) are nothing more than silica deposits with animal bones, which is part of the temple consecration ritual³³.

In the case of tripartite, many Austronesian belief systems in Indonesia indeed share the concept of a three-tiered cosmos. This concept in turn is often reflected in the way their traditional houses are conceived (Figure 3), as remarked by Waterson (1990:93) and Auersbach (2018:4). Similar to *ngabén*, Stutterheim may have been inspired by the Balinese version of tripartite known as *Tri Hita Karana* or *Tri Angga*. However, traditional Austronesian houses (predominantly on stilts and made of organic materials) and ancient Javanese temples (landed and made of inorganic materials) are quite different in terms of materials, construction, and function, thus requiring nuanced justification in direct comparisons. Unfortunately, Stutterheim’s writing did not provide much justification other

²⁶ Powers (2007)

²⁷ An interesting parable can be seen in Kanjanajuntorn (2020) who also argued for a shift from all-encompassing “Three-Age System” periodization that has to some extent stymied the conceptualization of Southeast Asian prehistory.

²⁸ Soekmono (1995:96). Atmadi (1988:7) also referenced Stutterheim in this regard.

²⁹ Levin (1999:3-4)

³⁰ Soekmono (1995:8-9, 13-17)

³¹ For example, Stutterheim (1931, 1935, 1940, 1956)

³² For one, Balinese *ngabén* does not entail housing the cremated remains in a permanent structure.

³³ Soekmono (1995:122)

than his own conviction that the order seems “appropriate” for Javanese temples³⁴. Subsequent writers also do not provide compelling evidence whether this supposedly appropriate architectural order existed and applied during the period of Javanese temple construction, as it is not attested in any Old Javanese writing³⁵. Soekmono’s work, normally meticulous in comparing claims with Old Javanese sources, inexplicably did not scrutinize this gap and provided no reference beyond Stutterheim’s claim³⁶. The only other argument Soekmono provided is further conjecture that the elevation of Javanese temples may be related to the division of Balinese temple grounds³⁷. This resulted in a somewhat circular logic and apple-to-orange comparison: Javanese temple elevation is tripartite because it’s descendant in the form of Balinese temple grounds is tripartite, which is derived from Javanese temple elevation.

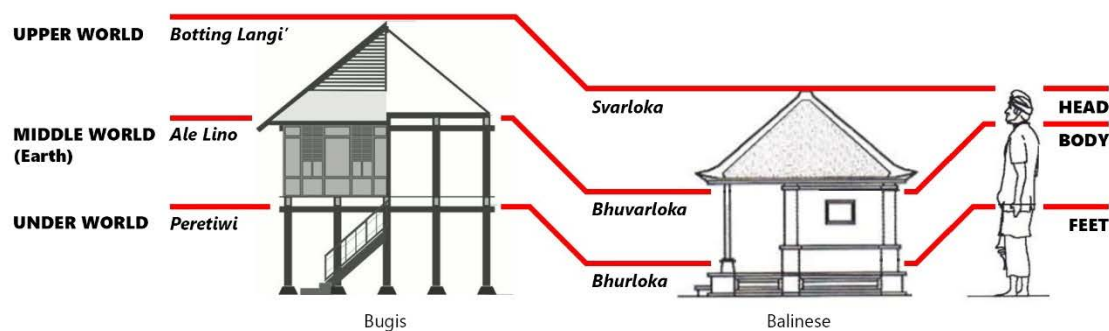


Fig. 3 The Austronesian tripartite division, using Bugis (Dwidayatiand 2021) and Balinese house (Sitinjak et al 2020) as examples. This division correspond to respective culture’s known cosmological view.

Contemporary Indonesian sources often relates the tripartite temple division not to Austronesian belief system but non-particular “Hindu scripture.” However, in the risk of stating the obvious, Hindu scripture is not a monolithic text but rather a pluralistic tradition with diverse viewpoints. Consequently, strict tripartite cosmology is not a constant that can be found in all Hindu texts, including those written by Old Javanese authors. The text *Sanghyang Hayu* for example, known in copies from West Javanese *kabuyutan* (Sundanese term loosely translated as ‘monastery’), explains that the universe consists of a middle world inhabited by humans, seven layers of upper worlds, and seven layers of lower worlds, which diminish in size as they go upwards and downwards respectively (Figure 4). Interestingly, the text did not group these layers into an explicit tripartite division. The names of these worlds also do not match the conventional retelling of Javanese tripartite order. The *Bhurloka* layer is not the underworld but instead the middle world. Meanwhile, *Bhuvraloka* and *Svarloka* are the lower levels of the heavens.³⁸ Thus, other ideas beyond the three-tiered cosmos (regardless of whether tripartite is ascribed as Hindu or Austronesian) are attested in Old Javanese literature. It is not obvious why simple tripartite division is then indiscriminately applicable for all Javanese temples.

³⁴ Stutterheim (1937:245). On several occasions with the author, Indonesian architect and writer Josef Prijotomo also expressed his suspicion that the tripartite order for Javanese temples is a colonial era invention.

³⁵ Personal communications with Dwi Pradnyawan

³⁶ For example in Soekmono (1995:95-96), he discusses the manifestations of Śiva into three forms based on a passage in *Arjunawijaya*. Crucially however, the passage never suggested that the tripartite manifestation is ever applied as an architectural concept by the Javanese. The idea that it is “replicated in the vertical division of a candi” came up independently based on Stutterheim’s claim.

³⁷ Regarding Balinese temple elevations (referring to the *méru* shrine towers) themselves, Soekmono admitted that they do not conform to the tripartite elevation that he saw in Javanese *candi* (Soekmono, 1995:105, 107)

³⁸ Tim Fakultas Sastra Unpad (200:57, 137); Darsa (2010:54-55). See Appendix. I am indebted to Ilham Nurwansah for informing me of this excerpt.

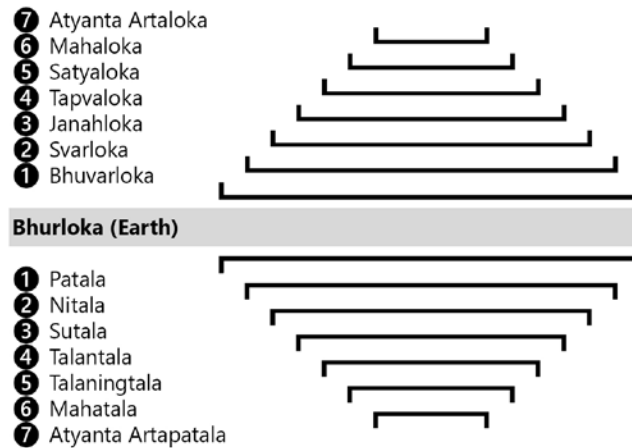


Fig. 4 Description of the universe from *Sang Hyang Hayu*. The number of layers and overall shape shows that Old Javanese literature has other cosmological ideas than the tripartite order.

Venturing into Indian architectural treatises such as *Mānasāra Śilpaśāstra*³⁹, an all-encompassing tripartite scheme is also unknown, as more detailed divisions are usually preferred. For example, regarding the general construction of a building which may be applied to temples, *Mānasāra Śilpaśāstra* chapter XXXIV, verse 63 mentions that “There (in each) pavilion should be three-fold members, the base (*adhiṣṭhāna*), pillars (*pāda*), and entablatures (*prastara*)”. This somewhat corresponds with the tripartite order. But then the passage immediately continues in verse 64 that there should be a pinnacle (*cūlikā*) and corner towers (*karnaharmya*) above the entablatures, while in verse 66 the base should be placed above a pedestal (*pīṭha*) or a plinth (*masuraka*)⁴⁰. Thus we arrived at six or seven layers at the end (depending on how one interprets the verses), and strict *sva*-*bhuva*-*bhurloka* symbolism is not mentioned throughout.

From analysis of available literatures, we can see that the tripartite order is not found in Indian or Javanese sources. The concept is only attested in modern sources as a scholarly conjecture. It is not yet proven as a codified architectural order used by temple architects themselves, as it is frequently implied to be. There is no conclusive evidence wherein the society who built Javanese temples viewed them architecturally as a three-part edifice, let alone use a precisely delineated three-part order to conceptualize it.

The Vāstu Order as a Conceptualizing Alternative

As mentioned earlier, Indian temple literature uses rich terminology for diverse architectural component that permits more precise and nuanced description of a given temple’s architectural traits. While exhaustive listing might not be possible in this paper, a brief overview is possible. Below is a table identifying general architectural elements of Indian temples, arranged from the top to the bottom of a typical temple spire⁴¹:

³⁹ *Mānasāra* has been cited by authors such as Atmadi (1988:18-19) as one of the probable sources of Javanese *candi* architecture, which is why it’s mention is pertinent to this paper. Degroot (2009:111) mentions other architectural texts and consider *Mānasāra* to be one of the less likely to reach Java, although no detailed reasoning is given in the relevant passage. There are controversies about the exact dating of *Mānasāra*, but according to Chakrabarti (1998:2) a composition date between 450-550 CE is generally accepted. This makes the work chronologically plausible to be used during the ancient Mataram period.

⁴⁰ Acharya (1994:341). See Acharya (1995: २२३) for the original Sanskrit.

⁴¹ Adapted from the author’s previous study (Perdana 2019, 2020). See also Coomaraswamy (1928).

NAME	DESCRIPTION	ALSO KNOWN AS	ATTESTATION	INDIAN EXAMPLE
Stūpi	Topmost crowning element of the temple spire, finial	Stūpika, Kalaśa, Kumuda, Culika	Agni Purana CIV; Kamikāgama LV; Mānasāra XX	
Amalaka	Crowning element of northern Indian temple-spire in the form of ribbed disk		Mayamata Śilpaśāstra	
Śikhara	Crowning element of southern Indian temple-spire in the form of a monolithic dome, cupola		Mānasāra	
Grīvā	A podium or “neck” that separates the crowning element with the spire’s entablature (tala)	Gala, Kaṅṭha	Mānasāra	
Śikhara or Vimana ⁴²	The main spire or superstructure of the temple above the inner sanctum (garbhagrha)	Latina, Śekhari (north), Kūtina (south)	Bṛhat Samhita LVI	
Tala	Individual level/layer/storey of entablatures	Bhūmi, Mañca	Mānasāra XVI; Kamikagama LIV	
Prastara	Entablature	Tala, Mañca, Varaṅdikā	Mānasāra XVI; Kamikagama LIV	
Kūṭa ⁴³	Miniature buildings/towers that punctuates the entablature, aedicula	Karṇaharmya	Mānasāra XIX	
Gavākṣa	Ogival or horseshoe arches, mostly used as decorative motif	Nāsi, Śukanāsa, Kudu	Agni Puraṇa XLII	
Garbhagrha	Inner sanctum	Garbhagrha, Sibika, Mulasthana	Bṛhat Samhita LXI; Mānasāra	
Pāda	Walls	Jaṅgha	Agni Puraṇa XCIII; Mānasāra XV	
Adhiṣṭhāna	Mouldings at the base of walls, plinth, socle		Kamikāgama XXXV; Mānasāra XIV	

⁴² In northern Indian tradition, the whole spire is referred as *śikhara* and the crowning part as *amalaka*. In southern Indian tradition, the same spire is referred as *vimana* and the crowning part as *śikhara*.

⁴³ Depending on the overall shape, *kūṭa* in southern Indian tradition may be divided into *karṇakūṭa*, *pañjara*, and *śālā*


Upapīṭha	Podium or pedestal of a building		Mānasāra XIII	
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Table 2 Various architectural elements in Indian temples. Source: Perdana (2019:14-15), Dhar (2018:333), Imagesbyvarsga (2018), Zwegers (2011), Airunp (2005), Ajaybeny1989 (2019), Meesanjay (2010), Dalbéra (2015), Dineshkannambadi (2015), Dalbéra (2014).

While scouring available literatures, the authors came across an essay by Dhar (2018) discussing early Javanese temples and was surprised to read specific terminology for architectural details that are typically left nameless in Indonesian sources. Dhar used Sanskrit architectural terms to refer specific elements of the Arjuna temple in Dieng, and by doing so Dhar was able to articulate nuanced architectural differences between Arjuna and contemporaneous Indian temples.

For instance, Dhar identified that although southern Indian architecture is often seen as the prototype of oldest Javanese temples, the entablature of Arjuna uses the northern Indian *kapotapālikā* type, quite distinct from the corresponding *kapota* type in contemporaneous southern Indian temple such as Mahabalipuram⁴⁴. The general placement of finial (*stūpi*) and corner towers (*karṇakūta*)⁴⁵ in Arjuna are comparable to Indian samples, but they are articulated into a distinct form which is not found in India. Based on this, Dhar gave a nuanced, early conclusion that mature localization of disparate elements from northern and southern Indian architectural traditions are already present even in the earliest known surviving Javanese temple such as Arjuna⁴⁶. Dhar can only give several examples of such as analysis, as more detailed examination was beyond her essay's scope⁴⁷. Nevertheless, Dhar's essay shows that alternative conceptualization with more detailed naming schemes could lend to a more nuanced discussion of Javanese temple architecture and their trajectories.

In her often-cited book, Kramrisch (1976) observed that various Indian architectural texts (known collectively as the *vāstu śāstra*) and extant temples often distinguish six to seven vertical parts in the elevation of the main temple spire: *adhiṣṭhāna* (plint or socle, with or without *upapīṭha*, pedestal), *pada* (pillar or wall), *prastara* (entablatures), *grīvā* (a "neck" of sorts that elevates *śikhara* from lower elements), *śikhara* (penultimate crowning piece), and *stūpi* (finial)⁴⁸. Naturally, in the complex development of Indian architectural tradition, each tradition may use different names or diverging elaborations, but it is a useful starting point in discussing the similarities and dissimilarities between various styles. We shall reference this seven-part order observed by Kramrisch as the "*vāstu* order" for convenience from this point forward. How the *vāstu* order can be applied to Javanese temples shall be discussed below.

Discussion

Comparison that the authors have conducted finds that seven parts of the *vāstu* order can be visually perceived in the elevation of all temple samples (Figure 5). The main difference in each instance being the number of roof storeys, otherwise known as *tala*. As an illustrative example, the author

⁴⁴ The most notable difference is that *kapota* cornice projects from the main body of the building forming a small awning with a hollow underside, while *kapotapālikā* have far smaller projection and solid underside.

⁴⁵ The English term Dhar used was "miniature aediculas", *aedicula* being a Latin term referring to shrines in the shape of a small building.

⁴⁶ Dhar (2018:330-333)

⁴⁷ Dhar (2018:328)

⁴⁸ Kramrisch (1976:221). Note the similarity in the number of layers compared to the *Mānasāra* and *Sanghyang Hayu* excerpt.

compares a generic south Indian *vimana* with one of the minor temples in the central courtyard of the Prambanan complex, *candi* Patok and Kelir (Figure 6)⁴⁹. From the figure, it can be surmised that what has been referred as *badan* in the tripartite order is divisible into *pada* and *adhiṣṭhāna*. Meanwhile, the architecturally complex *kepala* can be perceived as distinct layers of *prastara*, *grīvā*, *śikhara*, and *stūpi*.

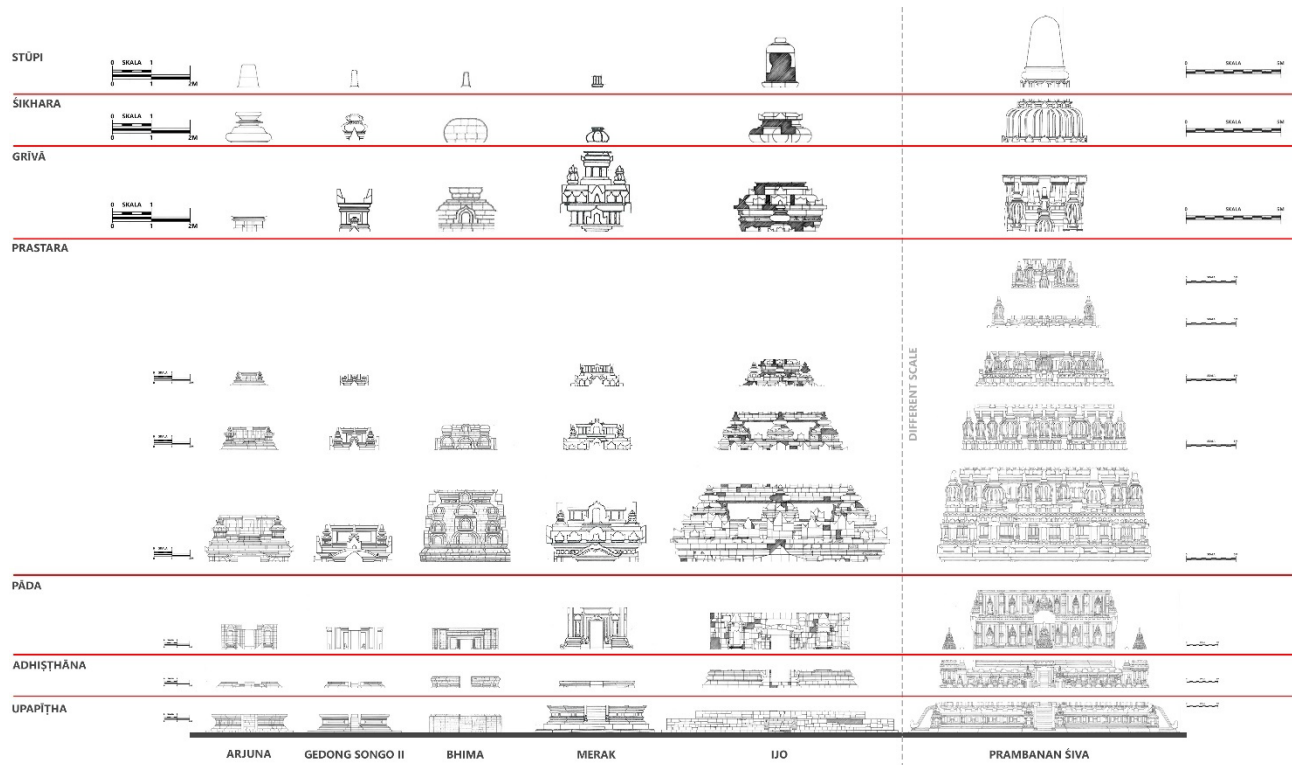


Fig. 5 The tripartite order compared with the *vāstu* order. Source: Perdana (2019).

⁴⁹ Both are of the same shape and are only differentiated by their placement within the inner perimeter of the temple precinct: Patok are placed at the cardinal directions while Kelir at the corners.

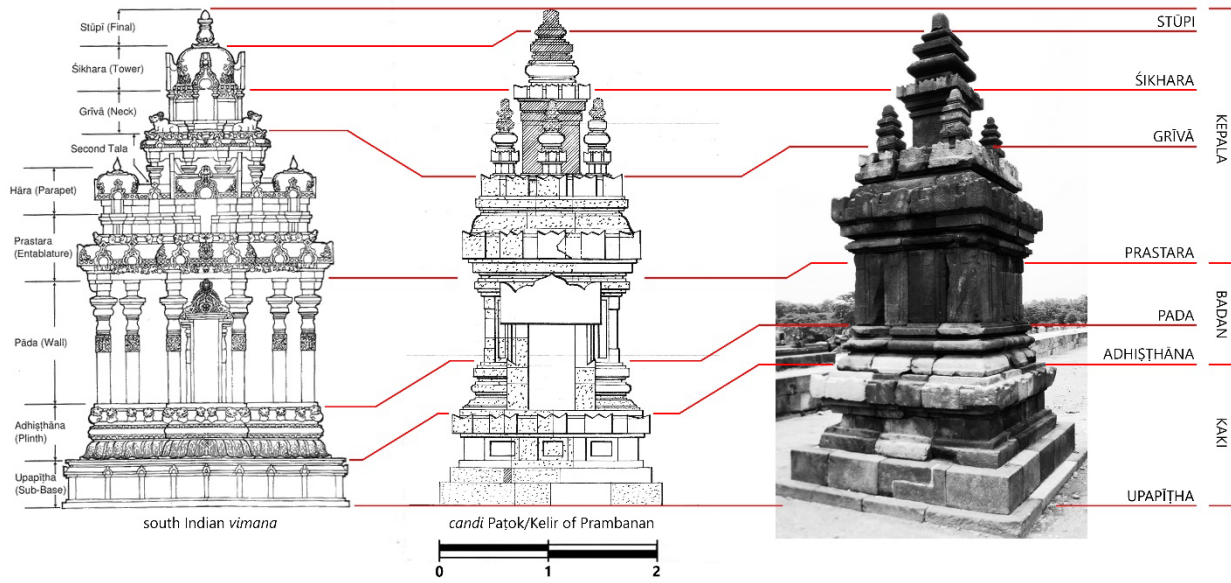


Fig. 6 Seven parts of the *vāstu* order in a generalized South Indian *vimana* compared with *candi* Patok/Kelir in the Prambanan complex. Source: modified from Perdana (2020:244)

The similarities, however, only goes so far. The point of using this *vāstu* order is not to show absolute conformity to the Indian model, but as a conceptualizing tool that may be able to show in greater detail the architectural layers that form Javanese temples. Indeed, while the more refined layers of the *vāstu* order is perceivable in the overall silhouette of Javanese temples, elements within each layer reveals notable differences from the supposed Indian prototype, which now can be examined more closely. To show this, we shall examine the elements that form the *kepala* which, as previously mentioned, tend to be reduced into a monolithic entity under the tripartite order.

Examining the Head of Javanese Temples using the *Vāstu* Order

Stūpi









INDIA		JAVA	
 Shore Temple, Mahabalipuram	 Galaganatha Temple, Pattadakal	 Arjuna Temple, Central Java	 Gedong Songo II Temple, Central Java
 Liṅgarāja Temple, Bhubaneswar	 Mahānandīśvara Temple, And. Prad.	 Prambanan Temple, Yogyakarta SAR	 Gebang Temple, Yogyakarta SAR
rare variation in India		rare variation in Java	

Fig. 7 Various *stūpi* from Indian temples with comparable Javanese element. Source: Dhaky (1974:314), Dr R Sureshverma (2016), Ms Sarah Welch (2014), Subhrajyoti davpkt (2018), Midori (2007b), Michael Gunther (2008b), Crisco 1492 (2013a), Crisco 1492 (2013b).

Stūpi is the finial or pinnacle, the terminating part of the temple's topmost reaches. While Kramrisch gave the name *stūpi*, this part is known by a variety of names and recommended shapes in *vāstu* treatises. The treatise *Mānasāra* use the name *cūlika* for the pinnacle, and *Kamikāgama* mentions that *stūpi*, *stūpika*, *śikha*, *śulaka*, *kāla*, and *ghaṭaka* are all synonyms for *cūlika*⁵⁰. *Śilpa Prakāśa* use the name *kalaśa* for the same element, and in verse 686-696 of the treatise it is said to come in two varieties: *yūpa* that looks similar to a truncated stone column (recommended for Devī temples), and *khumba* that looks similar to a water jar (recommended for Śiva and Viṣṇu temples)⁵¹. It is worth mentioning that while *yūpa* is said to represent vedic sacrificial post⁵², the description of its appearance has passing resemblance to a *liṅga*. Indeed, *Samarāṅgaṇa Sūtradhāra* also mentions a kind of finial in the general shape of a truncated column named *ākāśaliṅga*, literally a sky-*liṅga* (in modern Indonesian cognate this would be *angkasa-lingga*). According to Dhaky (1974), while *ākāśaliṅga* is regularly described in *vāstu* treatises, it is rarely used in both northern and southern Indian temples. The water jar shape he termed *kalaśa* (which in other source may be called *khumba* or *amṛta ghata*, the vessel of *amṛta* water) is invariably used as the finial in most temples. He observed that it seems only Java has instances of *ākāśaliṅga* outside of India for he did not find comparable finials in mainland Seasian temples⁵³.

Stūpi from candi samples such as Arjuna, Gedong Songo II, and Prambanan indeed shows variation of truncated stone columns comparable to the description of *yūpa* and *ākāśaliṅga*. There is also a tapering variation Setyowati (2016) identify as *mukula* (lotus bud). The author could not find a compelling *khumba* shape amongst Mataram-era temples. The exception, perhaps, is Gebang Temple, in which the noticeably short vertical protrusion at the top may instead be the "lid" of what is meant to be a *khumba* (Figure 7). Based on this, it could be said that while the norm for Indian temples is to use *khumba* finials, Javanese temples prefers variation of the *yūpa/ākāśaliṅga* finials which is rare in India.

⁵⁰ Acharya (1994:341)

⁵¹ Kaulācāra (2005:xiv, 353)

⁵² Kaulācāra (2005:28)

⁵³ Dhaky (1974:315)

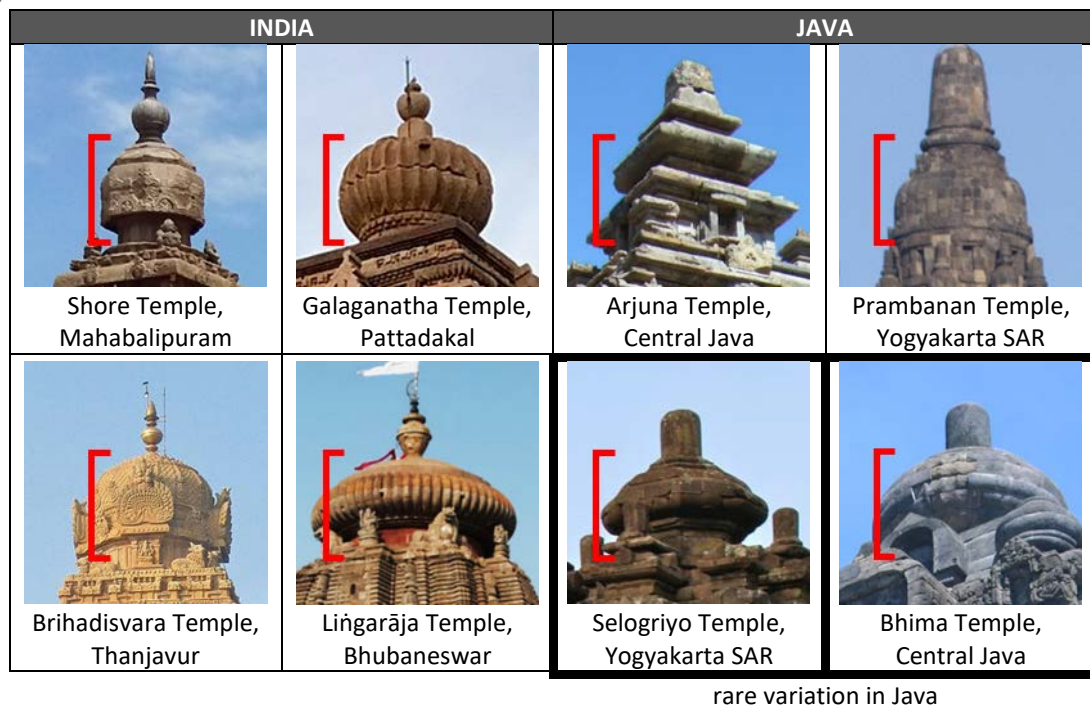
Śikhara

Fig. 8 Various *śikhara* from Indian temples with comparable Javanese element. Sources: Dr R Sureshverma (2016), Ms Sarah Welch (2014), Dcrjsr (2013), Subhrajyoti davpkt (2018), Midori (2007b), Crisco 1492 (2013a), TeshTesh (2013) and M Yusril Mirza (2017b).

Śikhara is the penultimate crowning piece of Indian temples, distinct from *stūpi* finial above it. Originally, the term *śikhara* is used for southern Indian crowning element in the shape of a small solid dome with either circular, square, or polygonal plan. In northern Indian temples, *śikhara* usually denotes the whole superstructure, while its crowning piece is a bulbous ridged disk known as *amalaka*. One common thread in both traditions is the size of *amalaka/śikhara* crowning piece, which is significantly larger than the *stūpi* finial above it. Contrast between the size of these two elements lends into a visual distinction that is readily discernible. This is not the case in Javanese temples where the lower *śikhara* is often difficult to discern with the upper *stūpi* due to their similar size. Perhaps it could be said that Javanese temples do not have a *śikhara* at all, but rather a single finial element of *kemuncak* (Jav. finial) merging what is two distinct parts of *śikhara* and *stūpi* in Indian temples. However, contrary cases can be found in Bhima and Selogriyo Temple where the *śikhara* is easily discernible from the *stūpi* (Figure 8).

Shape wise, Javanese *śikhara* has many variations and tend to be difficult to be compared with one another, let alone Indian samples. The *śikhara* of Arjuna for example has the shape of two square cushions stacked upon one another, which to the author's knowledge has no Indian parallel. It is somewhat similar with that of Ijo Temple, but in Ijo there is only a single layer of cushion. Some modern authors interpret square cushion *śikhara* with short tapering *stūpi* above it as a stylized *keben* fruit (*Barringtonia asiatica*)⁵⁴. This local fruit is mentioned in Old Javanese literature though not in an architectural context⁵⁵ and its significance is unknown.

⁵⁴ Setyowati, Pradnyawan (2016:24); Martinus (2018:349)

⁵⁵ Zoetmulder (1982:834)

Bhima Temple, frequently commented as the temple with the highest architectural affinity to northern Indian temples, has a *śikhara* in the shape of *amalaka* that is comparable with Galaganatha Temple of Pattadakal. In contrast to Bhima's *amalaka*, the *amalaka* of Gedong Songo III is quite different from the expected size and shape of Indian *amalaka*: it consists of two small *amalaka* stacked upon one another before terminating into the *stūpi* finial in the shape of *ākāśaliṅga*. Contemporary literature on Javanese temples tend to generalize all Hindu temple finials (i.e. the *śikhara* and *stūpi*) as having the shape of *ratna*, which is Sanskrit for "jewel." Ostensibly, it is only ever mentioned briefly to differentiate Hindu and Buddhist temples, as the latter is said to have stupa in place of *ratna*. However, the author never found a clear definition of what constitutes as *ratna* and wildly diverging samples of finials are often labelled as *ratna*. One source glossed it as "a big decorative ornament, figure of a *ratna* fruit"⁵⁶. What could "ratna fruit" possibly refer to is not specified.

Grīvā

Grīvā, also known as *Gala*, literally means "neck." Simply put, it is a podium that elevates the *śikhara* from the topmost entablature of the temple's spire. This part tends to be inconspicuous, partly hidden behind parapets and somewhat obscured when viewed from the ground level, as its main function is to accentuate the *śikhara* above it. Unfortunately, the authors have not found much description of this part, so we will not elaborate much on this element except noting that it is found in Javanese samples that the author has studied.

Prastara

Prastara are the entablatures, with associated mouldings and decorative elements. Layered storeys (*bhumi* or *tala*) of *prastara* forms the superstructure or main spire, which is arguably the most visually striking part of a temple. In northern Indian temples (specifically *latina* and *śekhari* type), the spire tends to have the silhouette of a bullet, while southern Indian temples have a pyramidal silhouette. Most Javanese temples show resemblance to the latter type, though with notable exceptions in detail.

In southern Indian temples, miniature buildings or aediculas are the standard decorative element in successive layers of *prastara*, which can be divided into three types according to their general roof shape: *karnakūṭa* with pyramidal hip/dome like roof, *pañjara* with saddle roof displayed on its short side, and *śālā* with saddle roof displayed on its long side (Figure 10)⁵⁷. Normatively, *karnakūṭa* is used as corner pieces (thus it may also be called "corner towers"), while *śālā* and *pañjara* are used intermittently in the space between. Curiously, Javanese temples do not seem to have analogues of *śālā* or *pañjara*; candi exclusively used iteration of the pyramidal hipped *karnakūṭa* in all position, corner and otherwise (Figure 9). Alternatively, Javanese temples may replace the central *karnakūṭa* in each side with a niche, as can be seen in Arjuna Temple. The absence of *śālā* and *pañjara* in Javanese temples is an interesting phenomenon which may be subject of future research.

Another element of Javanese *prastara* with notable difference from Indian temples are the antefixes. Javanese temples use prominently peaked antefix to decorate the *prastara* mouldings. In Indian temples, the closest parable is perhaps the *nāsi/kudu* motif in southern Indian temple (otherwise known as *gavākṣa* in north India), though these are normally in the shape of horseshoe arch and their iteration never achieve comparable shape with the peaked antefixes of Java⁵⁸. Indian

⁵⁶ Martinus (2018:350)

⁵⁷ In Perdana (2019, 2020), the author mistakenly thought the distinction of *karnakūṭa* and *śālā* were the placement, whereas it should have been the roof shapes, as outlined by Hardy (2007:129-130).

⁵⁸ See Hardy (2007:160-165) for iterations of *gavākṣa* in Indian temples

samples always retain a more curvilinear quality in the silhouette while Javanese antefixes are noticeably more rectilinear. This form of antefix seems to be a unique Javanese preference. Among the samples, peaked antefix are only absent in Bhima. One could also see how it increased in prominence from the relatively austere sample which only decorated the corner mouldings in Arjuna, to dense sequence in Prambanan (Figure 11). This element, to the author’s knowledge, has been hitherto only referred laconically as antefix. A more descriptive naming opportunity present itself, perhaps *sphaṭika* antefix. *Sphaṭika* is a Sanskrit term attested in Old Javanese corpus which approximately means quartz or crystal⁵⁹, to which the jagged appearances of a quartz crystal cluster somewhat reminiscent the antefix’s silhouette. It is also one of the phrases used to poetically describe the topmost extremities of candi in Old Javanese literature, as in *Smaradahana* canto IV stanza 16⁶⁰.

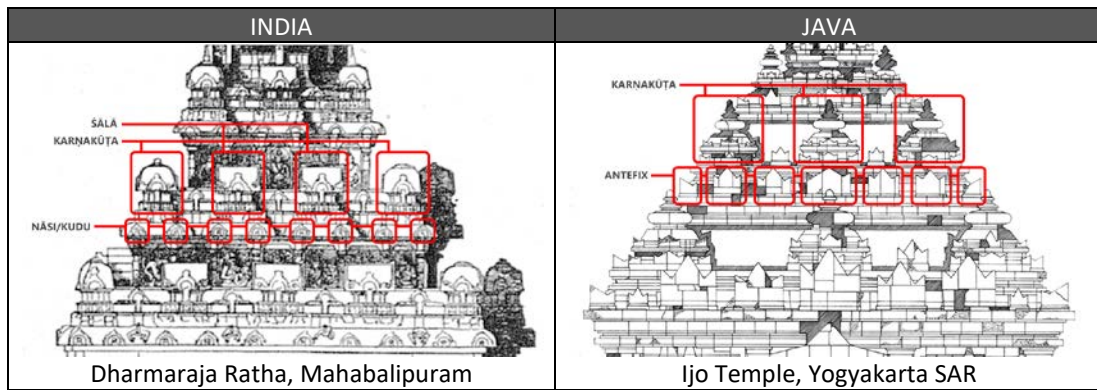
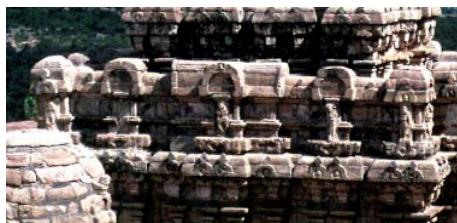


Fig. 9 Comparison of *prastara* elements between Indian and Javanese sample. Source: modified from Perdana (2020:245)



Vijayalaya-Cholishvara, Tamil Nadu



Fig. 10 Left: example of aedicula in a mid-9th century southern Indian temple. Right: types of south Indian aediculas, a: *karnakūṭa*, b: *pañjara* and c: *sālā*. Source: Hardy (2007:130)

⁵⁹ Zoetmulder (1982:1810)

⁶⁰ Soekmono (1995:84-85)

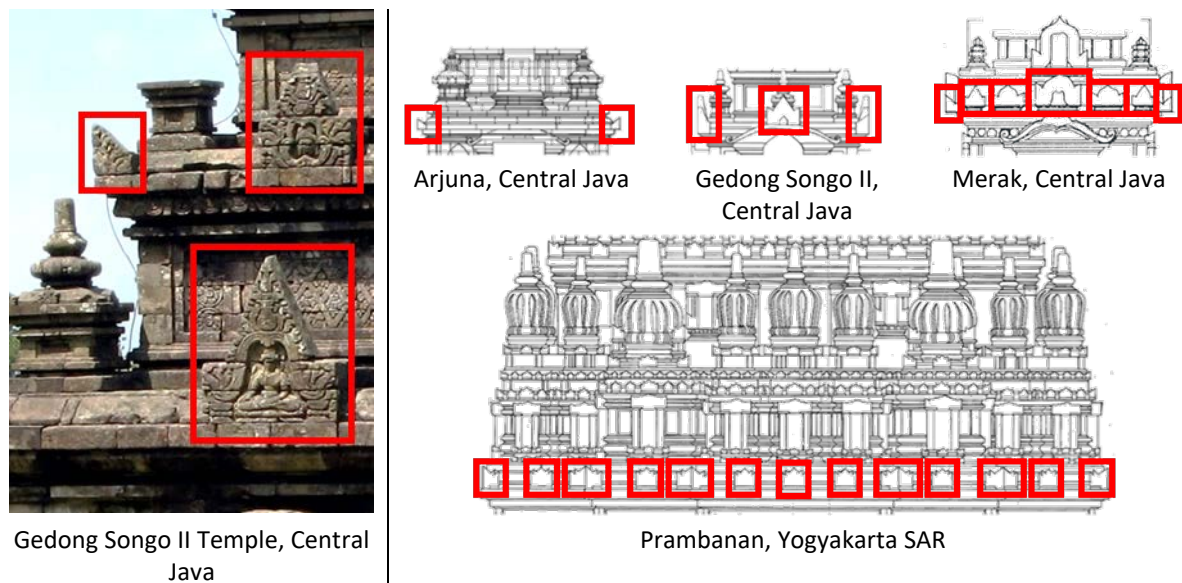


Fig. 11 Left: example of prominently peaked antefixes (nicknamed *sphaṭika* antefix by the author). Right: placement and distribution of antefix from several Javanese temples. Source: Perdana (2019) and Michael Gunter (2008c).

Conclusion

Whether the architecture Javanese temples is an Indian derivation, or a distinct Javanese creation is a subject that has been questioned in many writings. So far, writers tend to focus on non-architectural elements such as epigraphy, chronology, and iconography to answer such question. The architecture elements of the temples themselves tend to be glossed over in impressionistic manner as there is no detailed system of reference beyond the simplistic tripartite order.

From examining closely between Sanskrit architectural treatises with extant Indian and Javanese temples, we can see that the architectural order of Javanese temples is much more complex than the simplistic tripartite order supposes. Indian-derived *vāstu* order is generally applicable in Hindu temple samples dating from ancient Mataram era. However, further inspection finds that each part of the samples has unusual or even unprecedented architectural elaboration from the supposed Indian prototype. The common *stūpi* in Javanese temples use a shape attested in Indian treatises as *ākāśaliṅga*, but it is rarely used in India itself. The *śikhara* of Javanese temples are relatively small and difficult to discern with *stūpi* compared to Indian samples. Alternatively, it is possible to view Javanese *śikhara* and *stūpi* as a single *kemuncak* element. The *śālā* and *pañjara* aediculas are not used in the Javanese *prastara*, however the use of *karṇakūṭa* is not limited to corner pieces. Prevalent use of peaked antefix (nicknamed *sphaṭika* by the author) in the corner and side of Javanese *prastara* may be one indication of clear local preference that is absent in India, although this need to be further studied. In each case, one may find exceptions amongst extant Javanese temples. These observations can be surmised in the following graphic⁶¹:

⁶¹ Made in with the help of Yoga Wahyudhi from Boyolali, Central Java. Yoga Wahyudhi is a freelance graphic artist with special interest Javanese Hindu-Buddhist visual arts. Some of his works can be seen in Instagram @yogawahyudhi

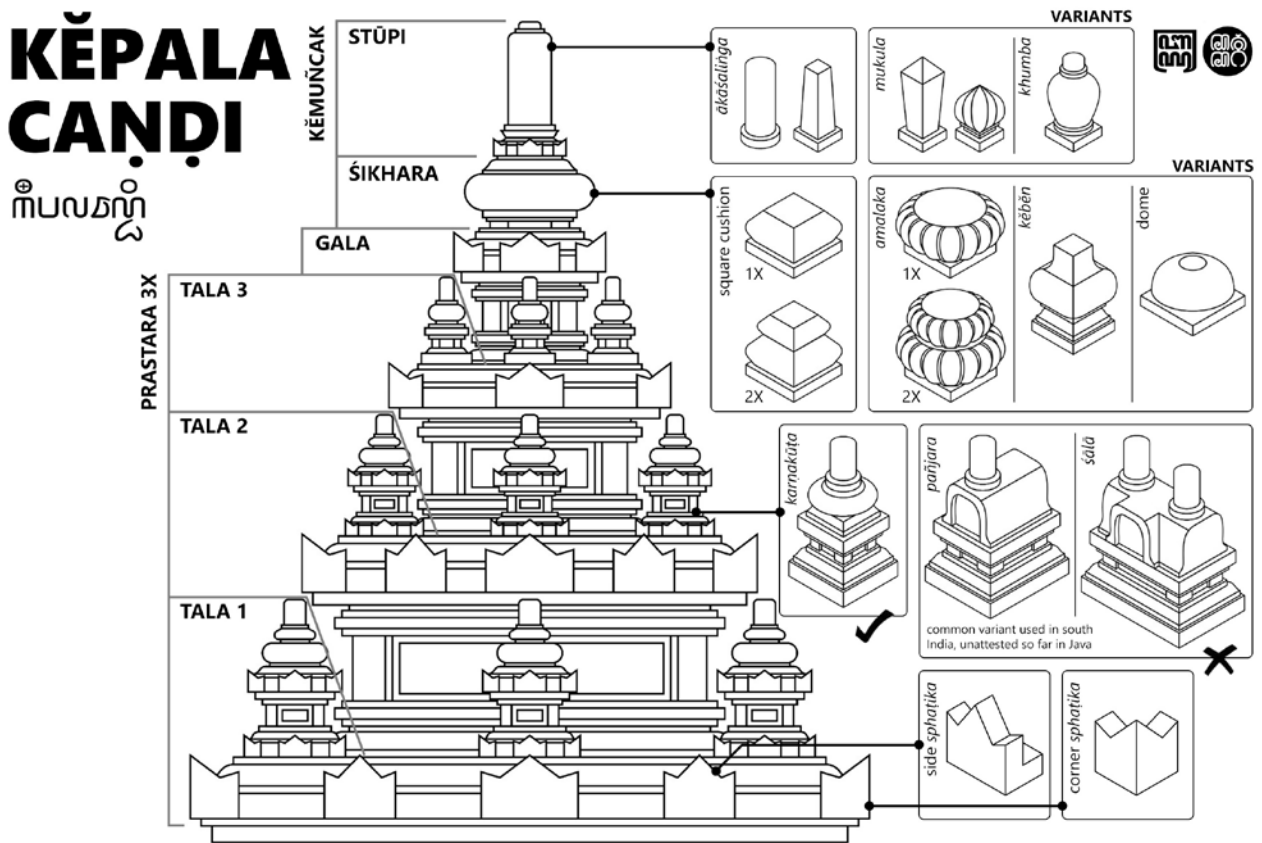


Fig. 12 Some architectural elements in the *kepal* of Javanese temple, using a non-specific model. Source: Aditya Bayu Perdana and Yoga Wahyudhi.

With these observations, the author agrees with Dhar that indeed Javanese temples shows complex amalgamation of various Indian architectural elements into a distinct creative form. Parallels with Indian elements do exist, but the abundance of novel elaborations makes more sense if the architectural tradition was not directly transplanted by visiting Indians, as alleged by Jordaan. What the author adds to this argument is specific identification to the relevant architectural elements whilst proposing a more detailed architectural order that facilitates this identification. As this paper has also hopefully shown, conceptualizing the *kepal* of Javanese temples with the *vāstu* order allowed many interesting observations as various architectural elements are explicitly named, identified, and described. Making these observations is certainly more difficult when one only conceptualizes Javanese temples into a simplistic three-part order and relied on the haphazard naming schemes that are thus far common in Javanese temple literatures.

Returning to the questions asked in the beginning of this paper regarding prevalent architectural conceptualization of Javanese temples; is there a compelling basis for the tripartite order? In terms of utility, the order does not adequately represent the intricate elements of a typical Javanese temple. Over reliance to it has so far led to overgeneralization and stymied discussion of their architectural qualities. Thus, the existing order has limited utility as a conceptualization tool. Reference wise, literature study shows that the order is not attested in any Old Javanese texts, so there is no compelling evidence that tripartite is used by temple architecture themselves. The oldest reference to the tripartite order that the author could find is 20th century scholarly conjecture,

subsequently repeated without caveat. This is an important point as many contemporary literatures seem to reference this order based on the misconception that it is a codified architectural concept from ancient writings, which has not been proven. Based on these considerations, it can be concluded that the tripartite order does not have compelling basis.

Is there a better way to conceptualize Javanese temples? The *vāstu* order, derived from Indian architectural treatises and modified by typological analysis of extant edifices, shown to be far more suited in describing nuanced architectural qualities in the chosen samples. However, this paper limits itself to a handful of Hindu oriented temples from 8-11th century. To what extent the proposed *vāstu* order is applicable to Buddhist temples or even Majapahit era temples in Java is still subject to further research and refinement. Applying similar rigor to the rest of Javanese temples would perhaps yield a more robust architectural order that is useful in revealing the nature of Javanese temples architecture and its position within the web of cultural exchange between India and Southeast Asia.

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