



Comparative Study of Srivijaya Buddhist Temples with Nusantara Dwelling Architecture in Sumatera Based on Forms, Mass Layouts, and Ornamentation

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Abstract. Hindu-Buddhist temples in Indonesia have such uniqueness that distinguishes them from those that were built by other Hindu-Buddhist civilizations, such as India and Cambodia. This shows that there is an element of local genius. The purpose of this qualitative research is to explore elements of local wisdom in Nusantara temples and to trace the continuity of Nusantara dwelling architectural concepts which resulted in local wisdom inspirations as shown by the Srivijaya Buddhist temples in Padang Lawas and Muaro Jambi. Case studies of Batak Toba, Karo, Nias and Malay dwellings show traces of the architectural concepts passed down by early Austronesian civilizations in Nusantara to the Nusantara temple designs. Tribute to different cultures that coexist with each other also brought several similarities between architectural elements of Srivijaya Buddhist temples and those of Nusantara dwellings. The local community accepts Hindu-Buddhist temple design guidelines as a form of respect for Hindu-Buddhist teachings. However, the designs did not convey Indian architecture concept as the main principals of temple design. Existing collective memories among Ancient Nusantara people were one of the factors that enabled those differences between Nusantara temples and Indian Temples.

Keywords: Srivijaya Temples, Nusantara Architecture, Alignments, Form, Layouts, Ornaments

1 Introduction

The architecture of temples in Indonesia is known for having its own distinct characteristics, setting it apart from temple architecture in other Hindu-Buddhist countries like India, Cambodia, and Thailand. Some examples of this uniqueness are evident in Candi Prambanan, which showcases tall building structures that were not found in other temple architectures of that time. Another example is Candi Borobudur, which displays intricate relief detailing that was rarely seen elsewhere during that period. These distinctive features in some of these temples suggest the presence of a genius loci influence, a local uniqueness in the Indonesian archipelago that is not found elsewhere. Furthermore, when explored further, the local uniqueness in the Indonesian

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ence, a local uniqueness in the Indonesian archipelago that is not found elsewhere. Furthermore, when explored further, the local uniqueness in the Indonesian archipelago in ancient times was likely influenced by the Austronesian cultural heritage.

Austronesian culture serves as the main cultural root of the Nusantara (Indonesian archipelago) culture. This influence can also be observed in the architectural characteristics of indigenous dwellings found in various regions of Indonesia, which show similarities with the architectural forms of Austronesian nations. It is these distinctive characteristics of indigenous dwelling architecture that possibly influenced the features of temple architecture in Indonesia. There are several similarities in the details, mass layouts, and proportions and scales of the temple structures.

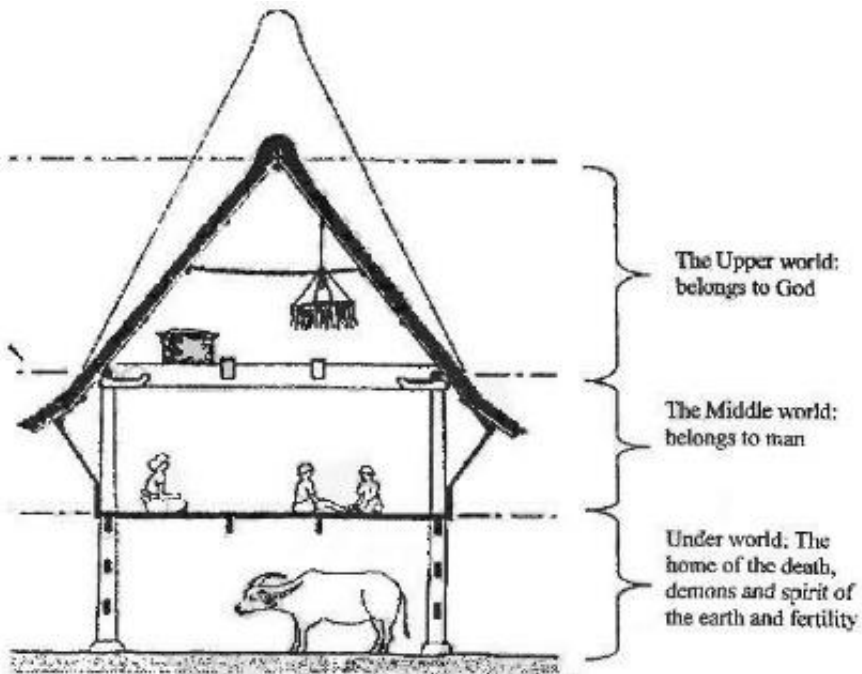


Fig. 1. Cosmology in Batak house. (Source: Domenig, 2003)

2 Research Method

This qualitative research aims to discuss the similarities and differences between the elements of Nusantara dwelling architecture in Sumatra and the architectural elements of Buddhist temples in Sumatra, including Candi Bahal I, II, and III, Candi Sipamutung, Candi Muara Takus, and Muaro Jambi. This research employs descriptive analysis methods. The analysis involves the comparison of similar architectural elements between traditional houses and temples, and examining these elements based on relevant literatures. Analysis is made to prove the presence of genius loci elements in the Buddhist temples of the Srivijaya legacy, as well as Hindu-Buddhist elements implemented

in Nusantara dwelling architecture. Case studies include various Nusantara dwelling architectures such as Karo traditional houses in Lingga Village, Karo Regency; Batak Toba traditional houses in Samosir Regency; Northern Nias traditional houses in Tumori Village, Gunungsitoli; Southern Nias traditional houses in Bawomataluo Village, South Nias; Rokan Palace in Rokan Hulu Regency, Riau; and several Malay traditional houses in Jambi. Case studies also include temples such as Candi Bahal I, Candi Bahal II, Candi Bahal III, and Candi Sipamutung in Padang Lawas Regency, North Sumatra, as well as the Muaro Jambi temple complex in Jambi. The Overall survey in Sumatra was held from 31 July 2022 to 14 August 2022.

3 Results and Discussions

The ancient Austronesian people have long practiced in the beliefs of animism and dynamism, one of them being the beliefs and honours to the ancestral spirits. This gave rise to the concept of dividing this world into three realms represented by guardian spirits. This division of three realms, which then interpreted into the architecture of temples, also specifically divides and orders the cosmological meanings of each realm into the lower realm, middle realm, and upper realm, sequentially from the bottom to the top of buildings. This interpretation also consistently emerges in every Nusantara dwelling case studies. Several theories imply that the Nusantara dwelling character of raised floor and stilt structure were proofs that those houses were originally considered sacred and protected, for example rice barns (where they also keep their valuable goods or sacred items) or ancestral homes where they were buried inside (it was considered that the ancestral spirits are still ‘alive’, and they still live in that house). This means higher place is equivalent to sacred place where the gods and spiritual transcendences settle. When associated with the theory of collective memory and archetype, especially in architecture, it can be considered that ancient Austronesian societies were familiar with cosmological spatial divisions, and these figures emerged from the subconscious, same as the Hindu-Buddhist influence on the architecture of their temples.



Fig. 2. The comparison of residential structures in Dong Son drum relics with Toraja houses
(Source: <https://museumvolunteersjmm.com/2014/04/01/dongson-culture-exhibition/>)

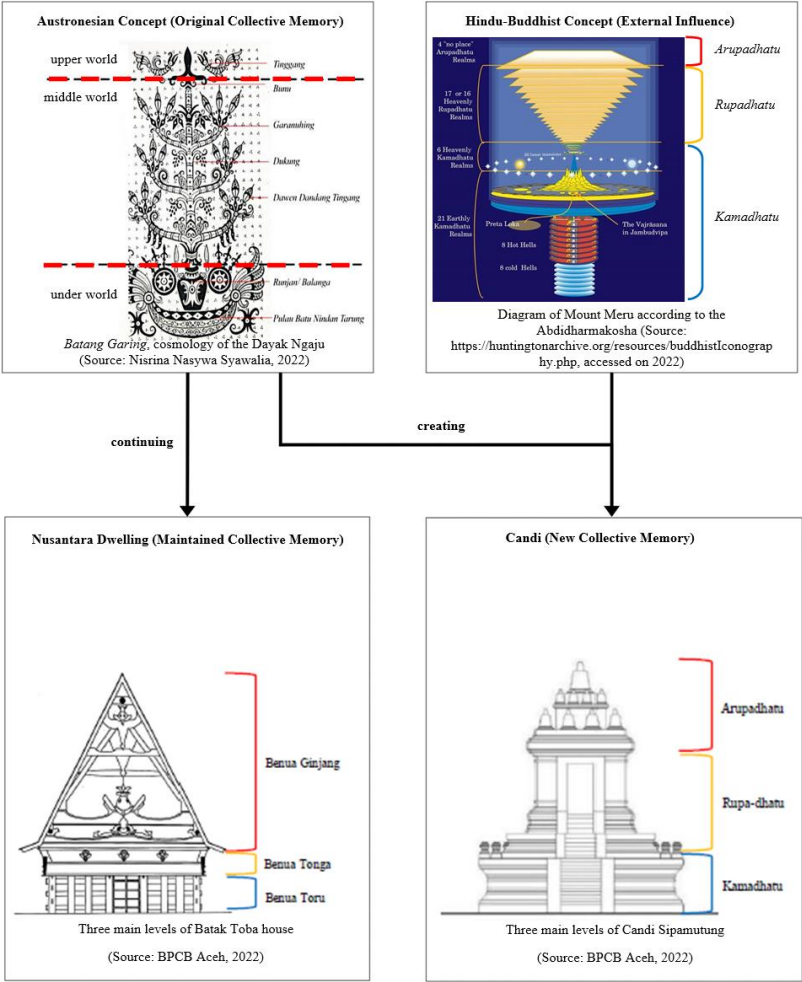


Diagram. 1. Writer’s interpretation of the flow of collective memories that created Nusantara architectural forms

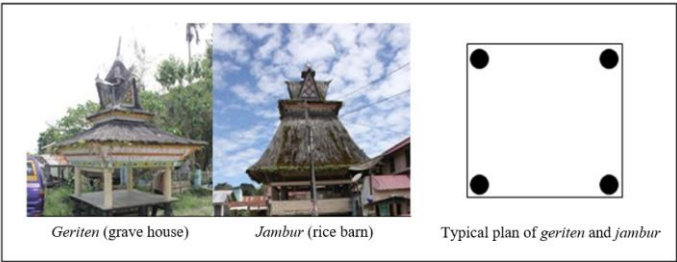


Fig. 3. Comparison of *geriten* and *jambur*, specifically designed buildings that are considered sacred. (Source: Author’s Documentation, 2022)



Fig. 4. Comparison of Pura Besakih (right) and a relief in Prambanan temple showing a figure of a wooden building with high roof (left) (Source: Author's Documentation, 2022) (left), https://www.balitourclub.com/berita_51_Objek_wisata_pura_Besakih_di_Karangasem.html, accessed on 2023 (right))



Fig. 5. Candi Kedaton in Muaro Jambi, with a layout of two buildings: 1. *Candi Utama* (main); 2. *Candi Perwara* (supporting) (Source: Author's Documentation, 2022)



Fig. 6. *Candi Perwara* in Candi Kedaton, with restored evidence of four pedestals, suggesting pre-existing four pieces of vertical structural elements of some sort (Source: Author's Documentation, 2022)

3.1 Comparison Between Nusantara Dwellings and Temples based on Mass Layouts

The analysis conducted on the orientation of temples in Sumatra indicates that the entrances to temple complexes are always situated on the downstream side. These temples are positioned along riverbanks; thus, their orientation follows the upstream-downstream (*hulu-hilir*) direction. This orientation concept also aligns with the Austronesian collective memory regarding axes related to natural landscapes. This can be observed in the mass arrangement of villages in Toba, Karo, Nias, and Malay, which to this day adhere to orientations either upstream-downstream (river-related) or mountain-sea.

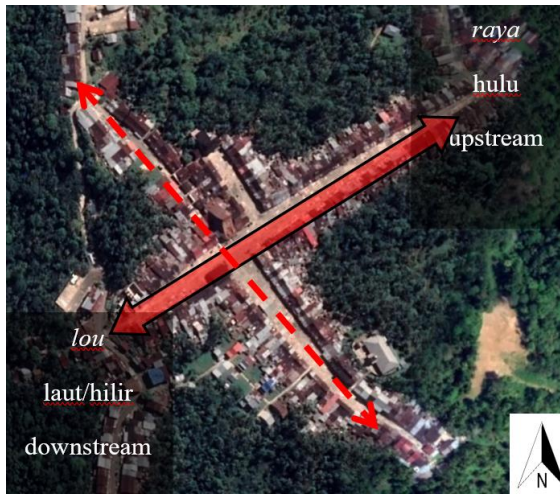


Fig. 7. Layout of Bawomataluo village, South Nias
(Source: Author's Documentation, 2022)



Fig. 8. Layout of Bawomataluo village, South Nias
(Source: Author's Documentation, 2022)

In ancient times, Nusantara communities used axes symbolizing life and death as cosmological interpretation. These imaginary axes can be seen in the east-west orientation, where the east represents the direction of sunrise (life) and the west the direction of sunset (death). Temples, typically oriented east-west to follow the sun's path according

to *pradaksinapatha* and *prasavya* principles of Indian cosmology, although some temples may face southeast-northwest due to variations in the sun's movement throughout the year. Apart from solar alignment, there is also a tendency towards orientations reflecting natural landscapes as manifestations of life and death axes.

Communities like the Karo, Nias, and Kampar Malay applied upstream-downstream river orientation as a guide for village planning. For instance, in Dokan village, Karo Regency, house planning is based on the upstream-downstream axis. New residents enter through the downstream (*hilir*) side door, thus entering towards the upstream (*hulu*). When a deceased relative is carried out of the house, they exit through the downstream (*hilir*) side door, moving towards the upstream (*hulu*). These customs and practices show that cosmological axes and orderings played a big role in shaping the architectural spaces.

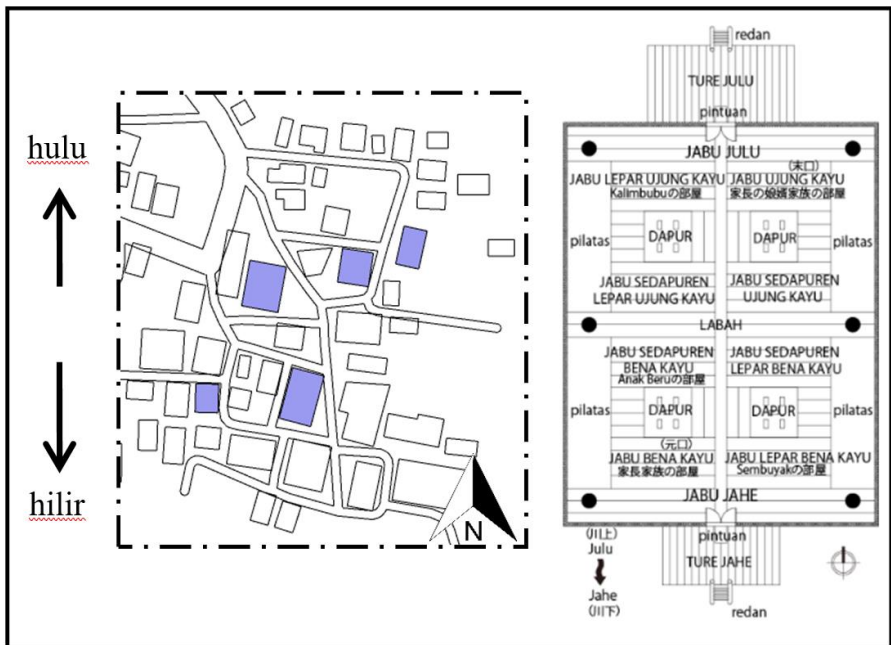


Fig. 9. Lingga village plan (left), Karo house Siwaluh Jabu plan (right)
(Source: Author's Documentation, 2022)

Evidence of Austronesian collective memory influencing the architecture of Nusantara temples can also be seen in mass arrangements in traditional Batak Toba villages. The Batak Toba community divides village building masses into two functional rows: the *jabu* row (residences) and the *sopo* row (rice barns). Based on analysis of Huta Siallagan, the mass arrangement orientation reflects mountain-sea (in this case, Lake Toba is depicted as the sea). These plannings and layouts are generally found in Nusantara temples as well.

The plan views of villages in Samosir show that nearly all rows of traditional houses have an orientation axis pointing towards Lake Toba. In Huta Siallagan, the *jabu* row is located on the side closer to the lake, while the *sopo* row is on the side farther from the lake. From this description, the author assesses that *jabu* (residences) and *sopo* (rice barns) in this context can be analogically interpreted as; the former as ‘main’ and the later as ‘supporting’ buildings arranged facing each other sequentially. This analogy between ‘main’ and ‘supporting’ buildings in temples shows similarities with the mass arrangements in Nusantara dwelling architecture.

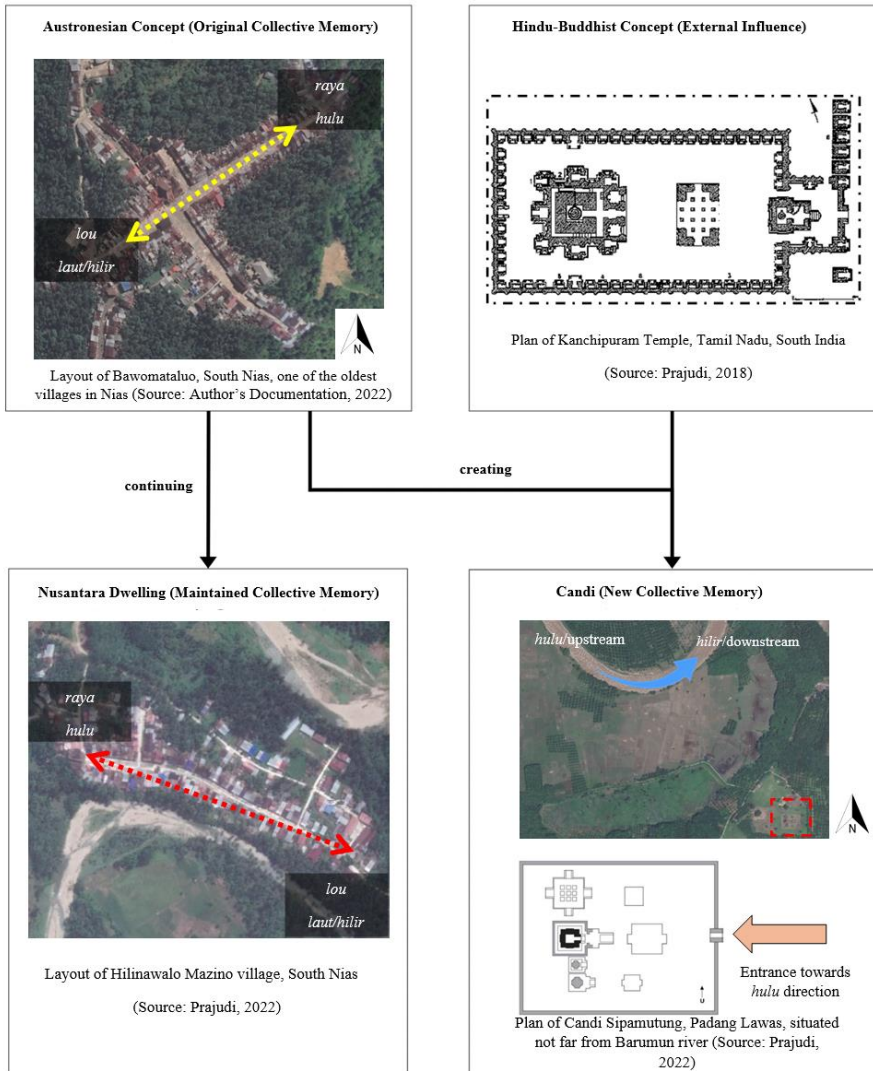


Diagram. 2. Writer’s interpretation of the flow of collective memories that created Nusantara architectural layouts

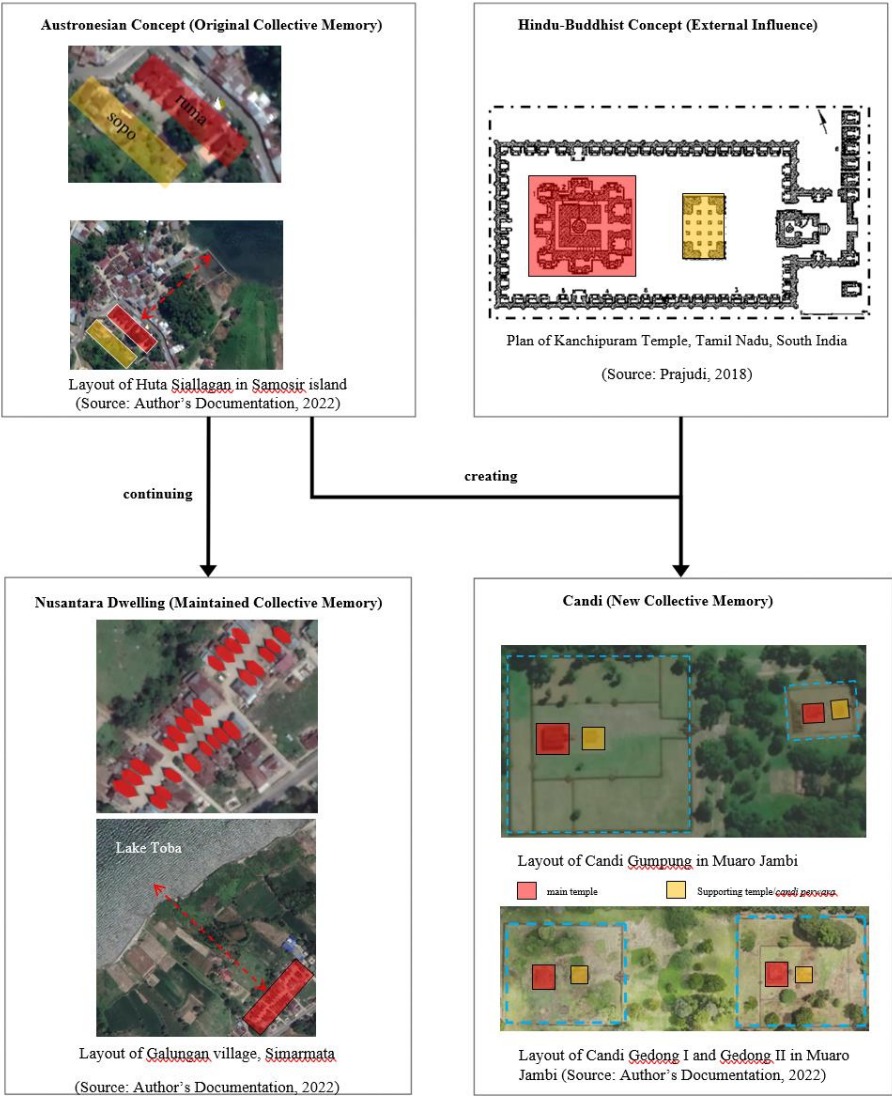


Diagram. 3. Writer's interpretation of the flow of collective memories that created Nusantara architectural layouts

However, the case of Batak Toba villages shows that the *jabu* rows are seen on the side closer to Lake Toba. Samosir Island has 10 river basins, all flowing into Lake Toba. This means Lake Toba can be considered downstream when associated with the upstream-downstream orientation. The *jabu* rows in Huta Siallagan are located downstream, whereas the *sopo* rows are upstream. This differs from the temples, such as the Muaro Jambi temples, where all temples place the main temple buildings upstream, opposite to the *perwara* buildings downstream. Factors causing these subtle differences are still yet to be determined.

3.2 Comparison Between Nusantara Dwellings and Temples based on Ornamentation

Nusantara temples prominently display *kala* and *makara* elements, especially on the front facade of the buildings. *Kala* is placed above the main entrance of the temple chamber, while *makara* are positioned at the lower ends of both sides of the stairs. Both types of ornaments are found in various Nusantara temples, yet they are notably rare in Indian temples. This indicates that in ancient times, local communities in Sumatra attributed deeper significance to *kala* and *makara* as architectural ornaments compared to the communities in India.



Fig. 10. Makara in Candi Sewu. (Source: Prajudi, 2022)



Fig. 11. Makara in Brihadishvara, South India. (Source: Prajudi, 2022)



Fig. 12. Comparison of Kala head in Candi Kalasan (left) and Kailashanatha, India (right)
(Source: Prajudi, 2022)

The significance of *makara* became crucial in Nusantara temples due to the continuity of the Austronesian collective memory regarding the dragon symbol, which later became associated with *makara*. The dragon represents a mythical water creature that is part of the symbol of the collective unconscious of ancient Austronesian societies. In Hindu-Buddhist culture, *makara* is a sea creature and known as the vehicle of Ganga, Narmada, and Varuna (sea god). It appears as a mixture of an elephant and crocodile-like animal at the front and its rear or tail is depicted as a water creature such as a fish or dragon. Although dragons are part of Indian mythology as well, their symbolic interpretation developed more rapidly in Austronesian cultures of the mainland and islands. The symbolism of dragons developed so extensively that it can be seen in detailed ornamentations on the lower wall edges of Nusantara dwellings. These ornaments exhibit similarities in their patterns when outlined. There are some similarities when these outline shapes are compared with the forms of *makara* found in Nusantara temples.

When these architectural ornaments are linked to their cultural sources, the interpretation of *kala* heads as warders against evil spirits is closer to Austronesian culture rather than Indian culture. This can be seen in historical evidence of the Austronesian civilization, such as the Pejeng bronze drums, which are relics of Dong Son culture. The motifs depicted on Dong Son drums essentially convey reverence for ancestors, including motifs of human heads portrayed on these drums. The interpretation of heads with supernatural elements is applied to a variety of architectural decorations, for example, in the *jengger* ornament of Toba Batak houses and the buffalo head adornments of Karo Batak houses.

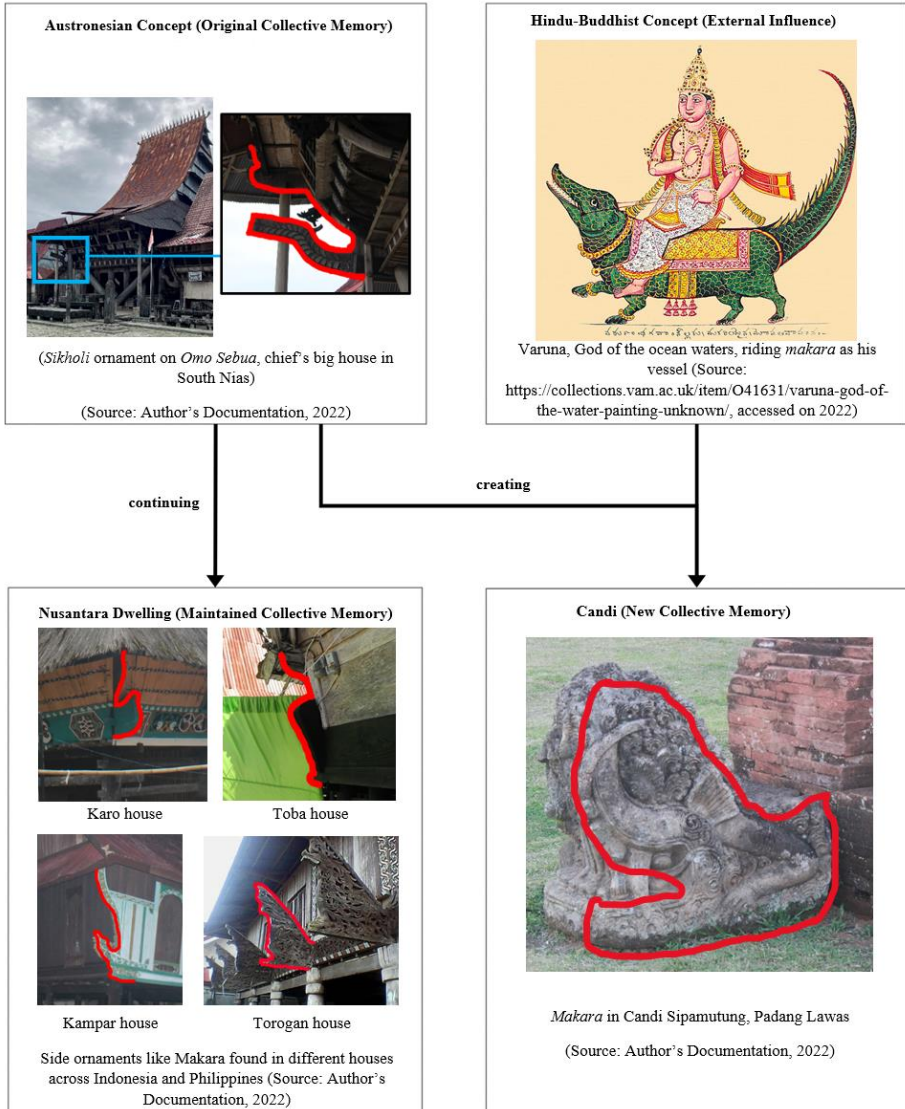


Diagram. 4. Writer's interpretation of the flow of collective memories that created Nusantara architectural ornaments

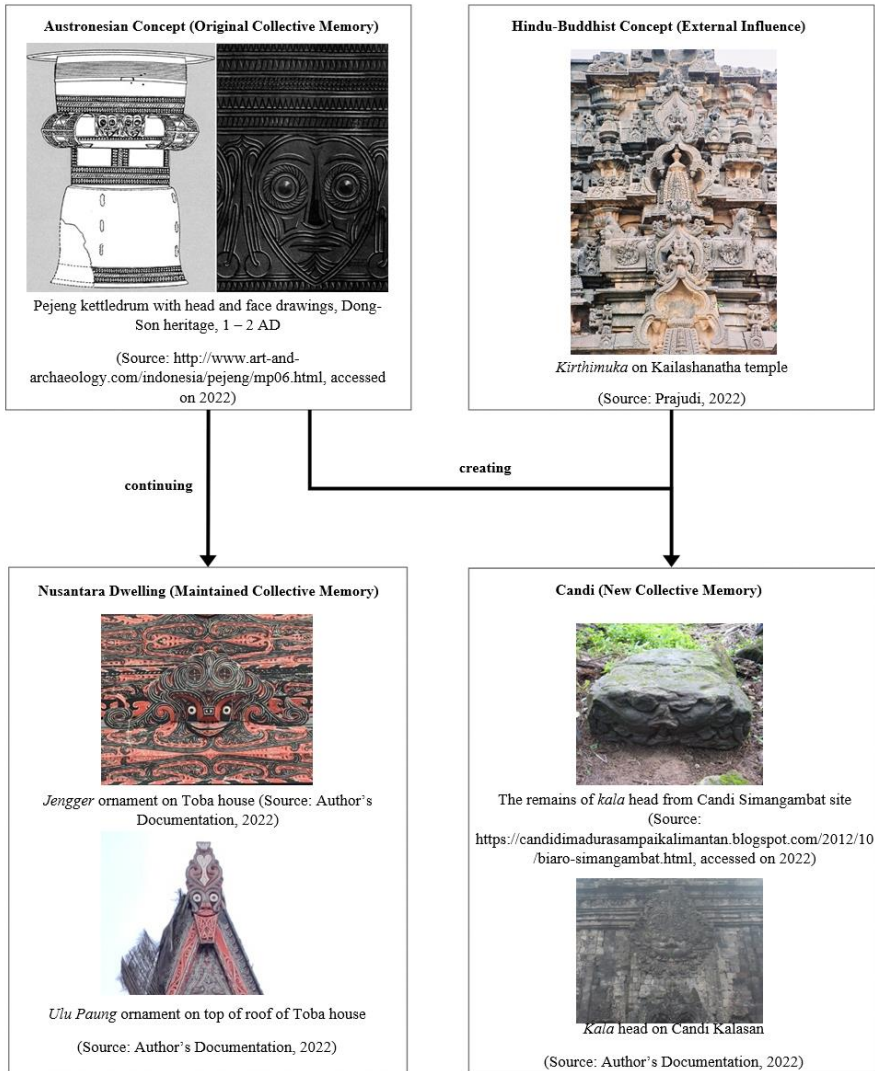


Diagram. 5. Writer's interpretation of the flow of collective memories that created Nusantara architectural ornaments

4 Conclusions and Suggestions

4.1 Conclusions

The collective memory of local communities regarding Austronesian cosmological concepts shaped the architectural knowledge of Nusantara architecture. This is a creativity skill formed from time to time and passed down for generations, shown in the distinct characteristics of Nusantara temples compared to those in India. When Hindu-

Buddhist cosmological concepts, along with the religion, influenced these societies, Austronesian collective memory blended with these Indian religious concepts, resulting in new collective memories. These new collective memories then formed the basis for creating local genius elements in Buddhist temples from the Srivijaya era and the emergence of ornamental elements in Nusantara residences that bear similarities to Hindu-Buddhist ornamentation. They underlined both similarities and differences between these two types of architectural subjects.

Tribute to different cultures that coexist with each other also brought several similarities between architectural elements of Srivijaya Buddhist temples and those of Nusantara dwellings. The local community accepts Hindu-Buddhist temple design guidelines as a form of respect for Hindu-Buddhist teachings. However, the designs did not convey Indian architecture concept as the main principals of temple design. Existing collective memories among Ancient Nusantara people were one of the factors that enabled those differences between Nusantara temples and Indian Temples.

4.2 Afterthoughts

The conclusions of this research also suggest that similarities shown from these collective memories may represent archetypes known to different civilizations. Balinese society, for instance, employs a tripartite division in their architecture, known as the *Tri Angga*, reflecting the recognition of an upper space imbued with respect and sanctity by both Austronesian and Indian cultures. The people of Nias embody collective memories of dragon mythology in their everyday tools such as coffins and architectural ornaments. The concept of dragon mythology is recognized in cultures across the world; for example, the Wat Phra Singh temple in Thailand exhibits dragon motifs in its stilt house architectural character.

There's also an interpretation that the distinctive layers of levels feature of Nusantara temples reflect a legacy from Austronesian megalithic cultures familiar with tiered platforms (*punden berundak*), often considered as monuments of reverence. This interpretation is also implicit in Nusantara dwellings, such as Banjar houses and Acehese *rumoh*, which feature elevated floor hierarchies. These tiers position specific spaces as sacred, particularly in private areas within homes. The alignment in this study illustrates that the architectural characteristics of Nusantara temples are deeply intertwined with the concepts found in Nusantara residential architecture.



Fig. 13. Wat Phra Singh temple in Thailand with dragon ornaments (Source: <https://www.renown-travel.com/temples/wat-phra-singh.html>)



Fig. 14. Elevated levels (*punden berundak*) in *Pura Mehung*, Selung, Bali (Source: BPCB Bali, 2023)

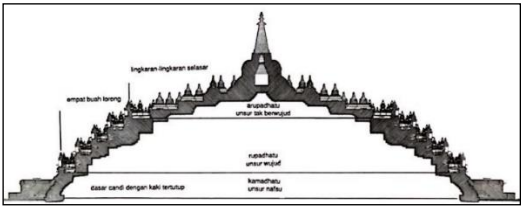


Fig. 15. Elevation of Borobudur temple (Source: <https://artikel-kependidikan.blogspot.com/2011/08/candi-borobudur-salah-satu-dari-7.html>, accessed on 2023)

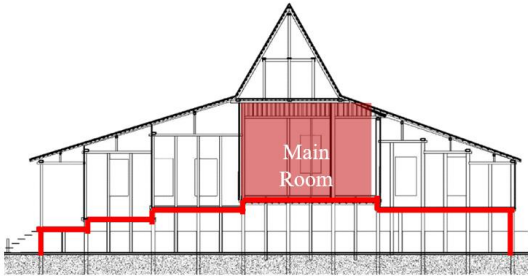


Fig. 16. Levels of elevations in Banjar house (Source: Suwignyo, 2021)

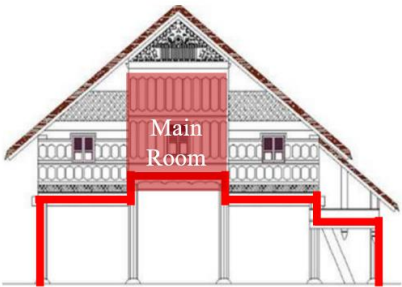


Fig. 17. Levels of elevations in *Rumah Aceh* (Source: <https://gln.kemdikbud.go.id/>, accessed on 2023)

4.3 Suggestion

This research certainly has several shortcomings that could be addressed through further studies on similar or related topics raised by the author. Some limitations that could be considered for further improvement include:

1. Several terms and approaches used in this research tend to lean towards anthropological and cultural perspectives, with less emphasis on architectural thinking. The architectural perspective needs to be clarified and sharpened.
2. The title of this research tends to be broad, resulting in a wide scope of discussion that involves theories or thought approaches that were unplanned in the research proposal stage. If there to be similar research, perhaps the research topic could be detailed further by focusing on the background or core objectives. For instance, if the research starts from concerns about local uniqueness in architecture, keywords like 'local uniqueness' should be included in the research title.
3. Case studies need to be mentioned in more detail.
4. Nusantara dwellings do not have an age equivalent to Nusantara temples. This creates an impression of unequal comparison, although this study requires evidence outside the case studies to strengthen historical aspects. A historical-focused study is necessary for more effective and comprehensible discussions.

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