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THE “KALPATARU” PHILOSOPHY AS AN INDONESIAN PARADIGM OF BIODIVERSITY: INSIGHTS FROM THE KARMAWIBHAṄGA RELIEFS OF BOROBUDUR

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Abstract

Borobudur Temple in Indonesia, a UNESCO World Heritage site, is renowned for its intricate architecture and carved reliefs. Among its Buddhist symbols, the Kalpataru and the Kinara-Kinari reliefs represent biodiversity, environmental enlightenment, and a cosmological paradigm revealed through interconnectivity analysis. This study applies a holistic approach integrating intra-, inter-, and extra-textual as well as contextual analysis, complemented by a post-human perspective that deconstructs human centrality and places all beings on equal footing. The goal is to uncover alternative meanings of inclusivity and equality through Kalpataru cosmology. The article explores the relationship between multispecies flora and fauna within the Kalpataru and Kinara-Kinari motifs of the Karmawibhangga reliefs at Borobudur and their symbolic role in Buddhist cosmology. Through this holistic examination, the study highlights the enduring values of these reliefs as prototypes for understanding the interconnectedness of life.

Keywords: cosmological building, multispecies world-building, tropical futurism

Introduction

Borobudur Temple, located in Magelang Regency, Central Java, Indonesia, is a UNESCO World Heritage Site and one of the most special Buddhist monuments in the world. This temple was built in the 8th century during the Syailendra

Dynasty (Santiko 2016); this enormous stone structure consists of ten platforms stacked on each other and is relief-decorated with intricate and artistic panels. The panels on the walls of Borobudur Temple tell five stories or collections of sutras. A sutra is a literary rule or aphorism, or

a collection of them. Those displayed at Borobudur are, Lalitavistara, Gandawyuha, Gandawyuha-Bhadracari, Jataka-Avadana, and Karmawibhangga (Istari & Sulistyanto 2015, Puspitasari *et al.* 2010). Concerning the one-story inlay in the Karmawibhangga panels, Krom (1920) believes that the Karmawibhangga relief is an essential story in Buddhism because it teaches the law of cause and effect or “Karma”, which was then translated by Fontein (1989) and Santiko & Nugrahani (2012), who expressed this in an article on behavioural warnings for humanity revealed in the Karmawibhangga story.

As a sacred building located in a tropical area, the various forms of relief sculptures at Borobudur Temple are full of meaning, whether the sculptures are in the form of flora, fauna, humans, building shapes, mythological symbols, or other ornamental forms, which emphasise the artistic and religious dimensions of the temple. With the complexity of creative, cultural, and spiritual values, the various relief carvings can be studied widely from the scientific perspectives of history, archaeology, arts and culture, architecture, biogeography, biology, and teaching and spiritual values. Several previous studies related to the flora and fauna at Borobudur Temple were carried out by Suropto & Pranowo (2001), Fauziah *et al.* (2018), Achmadi *et al.* (2020), Rusdianto *et al.* (2020), Metusala *et al.* (2020), Ashari *et al.* (2021), Mujiono (2021), Anggoroajati *et al.* (2023), Rusdianto *et al.* (2024), and Maryanto *et al.* (2025). Of the several studies on flora and fauna, none have discussed the forms of Kalpataru and Kinara-Kinari sculptures associated with religious values, especially in future Buddhist teachings.

Kalpataru originates from the Sanskrit words “Kalpa” and “Taru.” It is an Indonesian environmental symbol and a mythical tree depicted as a combination of three flora. Meanwhile, Kinara-Kinari are mythological figures in Hindu and Buddhist traditions, often described as celestial beings, and are often depicted as a pair, comprising a male and a female. In religious communities in Indonesia, the Kalpataru is frequently interpreted as a symbol of the “tree of life,” “tree of enlightenment,” or “tree of wisdom.” It tends to be a mythical relief tree, understood not only by Buddhists but also by Hindus. This condition can be explained by the appearance of the non-story character of the “tree of life” common in temple areas in Central Java and East Java, both Buddhist and Hindu-oriented. The Kalpataru and

Kinara-Kinari of Borobudur are powerful symbols of the interconnectedness of all life forms and the cosmos' intricate balance. By examining this symbol through the lens of multispecies cosmology and tropical futurism, we can gain a deeper understanding of the temple's enduring relevance.

Haraway (2008) and Risager (2022), argued that the multispecies approach and tropical futurism intersect through their shared commitment to imagining futures that center ecological entanglements, decolonial perspectives, and more-than-human agency. A multispecies perspective highlights the interconnectedness of humans with animals, plants, and even microscopic life forms, emphasizing how all contribute to shaping shared worlds (van Dooren 2016). It moves away from human-centered views by acknowledging the vital roles nonhuman beings play in cultural and ecological systems (Tsing 2015). Meanwhile, tropical futurism envisions future worlds from the viewpoint of tropical communities that are often sidelined in mainstream futuristic narratives. It draws strength from indigenous wisdom, lived environmental challenges, imaginative storytelling, and archaeological facts from the temple relief. Together, these approaches envision futures rooted in mutual care between species, profound cultural resilience, and equitable relationships across ecosystems. As we face the challenges of the 21st century, the wisdom embedded in Borobudur's reliefs offers valuable lessons on the importance of harmony, sustainability, and respect for all life forms. This revelation is similar to Bateson's (1979) relational thinking on the need to combine anthropology and early network theory and describe it into interdisciplinary practice, inspired by his ethnographic fieldwork on Alfred Russel Wallace's *The Malay Archipelago*, which observed the interdependence system in nature (Lundberg *et al.* 2019). We must learn from the hidden revelations of the Karmawibhangga narrative taught since the 7th and 8th centuries.

Through this discussion, we will simultaneously consider examples of expectations from existing works in Indonesia and address the expectations imagined by Roughgarden (2004) regarding the affirmation of a monument containing symbols affirming the biodiversity and culture of many spiritual traditions that are expected to accommodate a plaza and public space for recreation, art, and nature.

Materials and Methods

We screened 160 Karmawibhangga relief panel numbers (O-001 to O-160) to find panels in which Kalpataru and Kinara-Kinari are located. Kalpataru is a mythological tree, illustrated by combining the characteristics of several real trees considered sacred and important in various cultures. Combining trees such as the banyan, bodhi, Ashoka, mangosteen, and lotus create a powerful symbolic image of a tree that can fulfil all needs and desires, reflecting abundance, protection, and spirituality. Furthermore, the Kinara-Kinari are mythological creatures often depicted in Hindu-Buddhist art and architecture in South and Southeast Asia as a pair of half-humans, half-bird creatures known as the guardians of heavenly music and dance. Kinara refers to the male figure, while Kinari is the female figure.

This study considers human and non-human entities as equal agents (active elements) in the universe, thereby validating the study of Kalpataru and Kinara-Kinari. It is also necessary to embrace ambiguity, multiplicity, and non-linearity to explore Kalpataru and Kinara-Kinari not only as carved material but also more as a post-human experience. Braidotti (2013) defines the “post-human” not as a futuristic or technological transcendence of the human condition, but rather as a critical rethinking of the assumptions underlying the category of the “human” itself. She challenges anthropocentric views that place humans at the center of existence and critiques the Enlightenment-era conception of the human as rational, autonomous, and universal, often excluding women, non-Europeans, and other marginalized groups. Braidotti proposes a post-human subject that is embodied, embedded in its environment, and interconnected with different forms of life. This subject is not anti-human, but rather “a-positive,” affirming new ways of thinking about agency, embodiment, and ethics in a world shaped by globalization, biotechnology, and ecological crises. “The posthuman subject is an ontological operator: it decenters the human by confronting it with its others. It does not deny the specificity of human attributes but situates them within an interconnected web of relations”.

The relationships of Actor-Network Theory (ANT) can be used to connect networks between humans and non-human entities, revealing the influence of both on shaping social phenomena. From this perspective, this method also adopts the aspect of materiality by recognising the

existence of world materiality as a material actant. Kalpataru and Kinara-Kinari demonstrate that there are aspects of materiality beyond humans that are important for us to consider. From this perspective, this study examines the relationships and networks that shape the world and its understanding as a comprehensive cosmology.

It is essential to pay attention to artistic expression in creative and artistic methods, such as photography, performance art, narratives, and reliefs at Borobudur Temple featuring posthumans, which offer non-representational ways to express posthuman experiences and knowledge. So, the *pradaksina* method (read from right to left) (Rusdianto *et al.* 2020) needs to be considered to accommodate analyses of the representation of the flora-fauna iconography, for incorporating a variety of storytelling techniques is essential to effectively convey messages through reliefs of flora-fauna or their geographic and time frames associated through comparative identification results, including an assessment of fitness between the morphology, behaviours, and habitat of species identified in different taxonomies of flora-fauna categories (Phillipps & Philipps 2016, Eaton *et al.* 2016, POWO 2023). The analysis of relief as a discourse that combines social and ecological dimensions in interpretive critical reflection is consistent with Mundayat's (2021) critical reflective interpretation paradigm. In addition, this research also includes the application of the intra-inter-extra textuality method, a concept related to the analysis of contextual relations within or among the panels, including contextual correlation analysis between the meaning of the text in the panel and external sources (Sharrock & Morales 2000, Juvan 2005, Langlands 2018, Maryanto *et al.* 2025). Through the use of post-human multispecies methodology and several other approaches, this study offers an alternative to studies (Krom 1920, Santiko & Nugrahani 2012, Santiko 2016), which have dominated the interpretation of Karmawibhangga studies of Borobudur Temple to date (Fig. 1).

Results

Of the total 160 panels we observed, we found at least 10 panel numbers (O-99, O-101, O-102, O-126, O-130, O-137, O-143, O-147, O-149, O-150, O-154, O-155, and O-160) that contained Kalpataru carvings, and eight of the panels contained a combination of Kalpataru and Kinara-Kinari carvings (Sup. Table 1). In

addition to the simultaneous appearance of Kalpataru and Kinara-Kinari on the same panel, there is a combination of flora and fauna ornaments that also accompany Kalpataru and Kinara-Kinari such as Green peafowl (*Pavo muticus*), Pigeon (Columbidae), Elephant (*Elephas maximus*), Domestic horse (*Equus caballus*), Mollusc (*Turbinella* sp.), Plantain squirrel (*Callosciurus notatus*), Estrildidae finches, Mahseer fish (*Tor. sp.*), Indian medlar (*Mimusops elengi*), Mangosteen (*Garcinia mangostana*), Manggo (*Mangifera indica*), Sacred lotus (*Nelumbo nucifera*), Water lilies (*Nymphaea* sp.), and Breadnut (*Artocarpus camansi*).

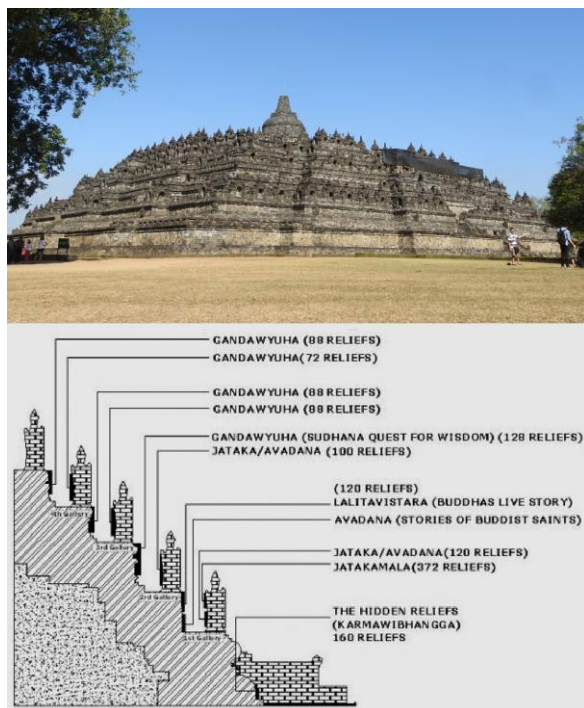


Figure 1. The appearance of the Borobudur Temple and the position of the Karmawibhangga relief, modified after Santiko & Nugrahani (2012)

The Kalpataru relief is in one panel with a combination of non-mythical flora and fauna reliefs exposed in panels O-150 and O-154. In each panel, reliefs of Molluscs, Elephants, Horses, Breadnuts, Plantain squirrels, and Estrildidae birds were found (Sup. Table 1), consistent with previous archaeofaunal documentation from the Karmawibhangga reliefs (Maryanto *et al.* 2025). The relief of this issue is not followed by the appearance of a relief of Kalpataru in detail of “rupa” (in Javanese, appearance), but is seen as a relief of an unfinished/unshaped tree. However, we know mentally or spiritually “bathin” in Javanese

(inner heart) that the tree forms the canopy of the Kalpataru (panels O-151 and O-160) (Fig. 2).

The Pigeon appears on the extension of panels O-102 and O-155 because the legs appear shorter and the hind body tends to sink downward. The Green peafowl with long morphological legs is revealed in panels O-101, O-143, while in panels O-149, the morphology has long legs with visible spurs. The combination of Pigeons and Green peafowl is revealed in panels O-126 and O-130; the body's morphology is like a green peafowl but has a short tarsus like that of a Pigeon. Furthermore, for panels O-137 and O-147, the foot morphology is similar to that of a Pigeon. However, the body and spurs are like those of a green peafowl, while for panel O-160, humans are identified as not yet fully developed because their legs are still in the form of a combination of a Pigeon and a Green peafowl.

Discussion

Kalpataru in “Pancaskandha” Concept. The search for a fulfilling life essentially lies in the pursuit of happiness. Often, this can only be achieved by fulfilling desires related to worldly pleasures. Kalpataru is not just for fulfilling worldly achievements. However, he is a way of maintaining connections between the same actors that complement each other so that their connections do not conflict. Therefore, Kalpataru constructs a cosmology with no inherent connection between the contemplation of beauty and the awakening of desire, as claimed by Al-Ghazali (2010). Giving in to the pursuit of pleasure will only result in a regression to a state driven by base desires (lust or desire).

According to Lacan (1975), individuals who are easily tempted and readily follow their desires are called “perverts” because they prioritize the pursuit of worldly pleasures (jouissance) (Mundayat 2021). Therefore, Mundayat also said that in analyzing reliefs, it is necessary to conduct a discourse analysis that links social and ecological dimensions through critical interpretive reflection. This analytical perspective is in line with Lacan (1975) and Al-Ghazali (2010), who argue that humans inherently have a drive to fulfill pleasure; thus, interpreting the Karmawibhangga relief requires an understanding of the transformation of pleasure into “Arupa” - a formless state - through the practice of self-control. Following the critical-reflexive interpretation (Mundayat 2021), the reading of the relief needs to consider the representation of the Buddha in the stupa,

namely the stupa in Borobudur temple, which can provide meaning as a diversion of focus from mere aesthetic beauty, which is tied to worldly pleasures.

By examining the sculptures of the Kalpataru and the Kinara-Kinari in the Borobudur Temple World Heritage Building, we aim to elaborate on the meaning of these two mythological forms and link them to the concept of "Pancaskandha" in Buddhist teachings. Pancaskandha or Panca Skandha is an important concept that refers to the five groups or aggregates that make up human existence, i.e., "Rūpakkhanda," the physical body and the physical processes that occur in it, "Vedanākkhandha," the feelings experienced by the body and mind, "Saṅnākkhandha," the cognitive processes that occur in the mind, "Sankhārakkhandha," the mental formations consisting of thoughts, emotions, and

motivations, and "Viññāṇakkhandha," the conscious awareness of internal and external objects. We believe there is a strong correlation and interconnection between the embodiment of Kalpataru and Kinara-Kinari in the implementation of the "Pancaskandha" teachings.

In the future, understanding the meaning of Kalpataru and Kinara-Kinari can strengthen religious understanding for Buddhists. Apart from that, the narrative described in this article can indirectly increase the attractiveness of the Borobudur Temple to future tourists. Apart from that, the appearance of Kalpataru and Kinara-Kinari, along with various other types of flora and fauna, including humans, in the same panel, will further emphasize the understanding of the concept of maintaining balance and sustainability between living things and their environment.



Figure 2. The appearance of Kalpataru and Kinara-Kinari and other flora-fauna ornaments; Remarks: (a) Kalpataru and Kinara-Kinari, (b) Ferns, (c) Medlar, (d) Mangosteen, (e) unknown flora, (f) Mango, (g) Water lilies, (h) Lotus, (i) Mahseer fish, (j) Kalpataru, (k) Elephant and Horse, (l) Molluscs, (m) Breadnut, (n) Plantain squirrels, (o) Estrildidae

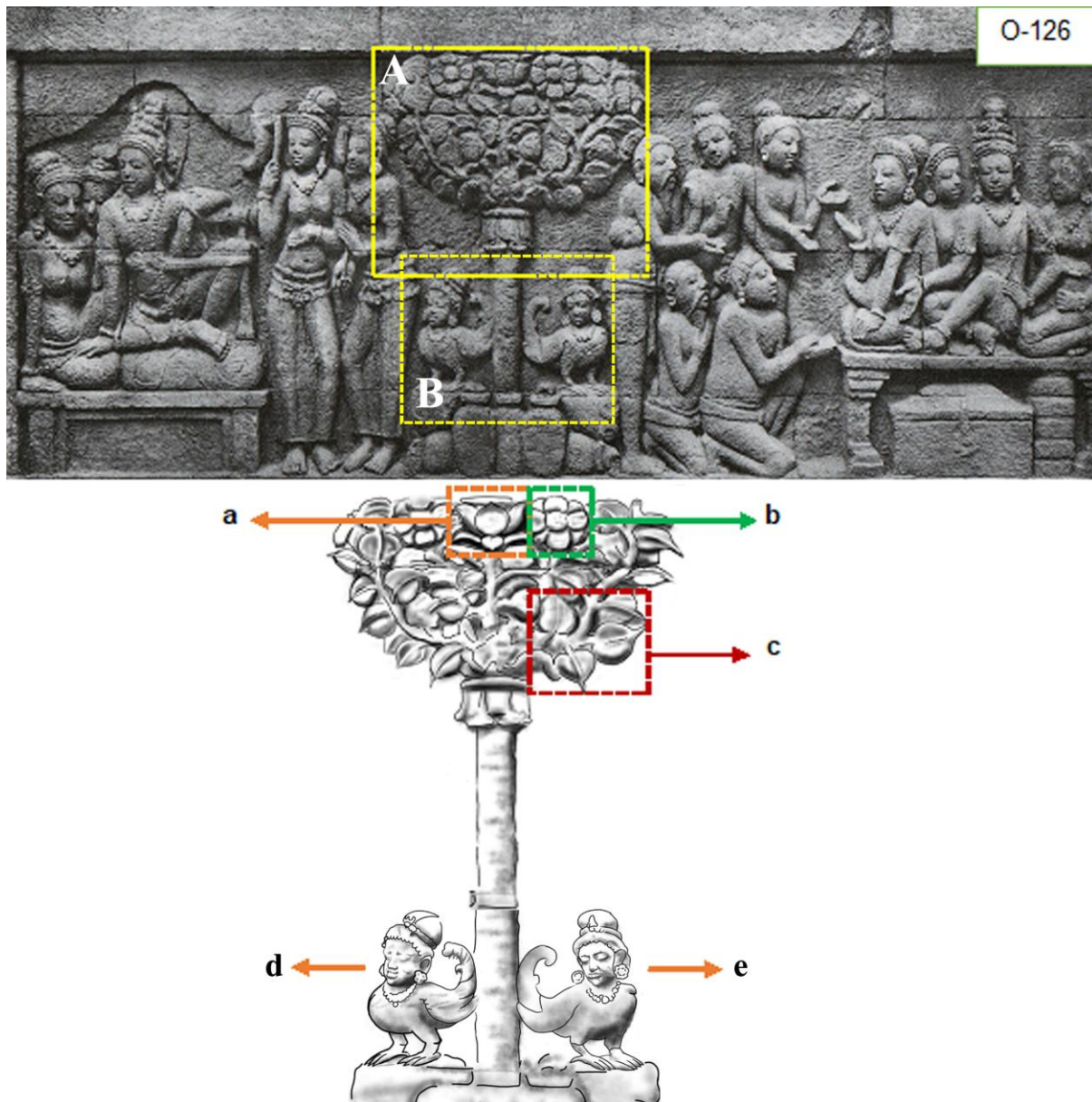


Figure 3. Panel number O-126 shows (A) an enlargement of Kalpataru and its constituent floral components: (a) the mangosteen fruit, (b) the Sacred lotus flower, and (c) the Bodhi leaf; (B) an enlargement of Kinara-Kinari: (d) Kinara (male) and (e) Kinari (female)

Although the biological classification of the Kalpataru species cannot be determined, it brings us closer to the philosophy of "Pancaskandha," one of the foundational principles of Buddhist teachings. The concept of "Pancaskandha" in the relief of Kalpataru is seen in panel Karmawibhangga O-160. Although the plant is elusive, in this panel, the plant can be said to be a Kalpataru relief because it has an offshoot of Kinara-Kinari associated with it. However, Krom (1920) only argues linearly about "a nobleman who sits in the hall, accompanied by two women, and people seem to pay respect to him." Based on the "Pancaskandha" concept, deconstructing

Krom's linear perspective is necessary to find meaning in a post-human perspective and to understand more complex relationships more comprehensively and non-linearly. Extratextually related to "Pancaskandha," Kalpataru can be seen as an aggregate symbolizing the appearance of a tree trunk that functions as an entity supporting life. This state can be compared to "Skandha" in Sanskrit, which means the characteristic of a tree trunk. On the other hand, the 'Skandha' leaf, which represents the "Nama" (inner heart), can be compared to three species whose characteristics are taken from the Bodhi leaf, the Sacred lotus flower, and the Mangosteen fruit.

The interconnection between the three species found in Kalpataru can be explained by examining the morphological features inherent in these trees in their natural environment. The leaf structure of the Kalpataru is the Bodhi tree; it is known for its association with the place where Siddhartha Gautama attained enlightenment. Therefore, the tree mentioned above is often called the wisdom tree and the tree of life, as the wisdom tree mentioned in the “Diamond Sutra,” namely true wisdom that can provide happiness and prosperity to all living beings, or is following the understanding of the philosophy of “Saññākkhandha” as a composite group of insights. According to research conducted by Fauziah *et al.* (2018), the tree of life, or the ‘Bodhi’/Sacred tree, has an analogy due to its interconnectedness and extensive nomenclature of different types of Buddha attained enlightenment under the Bodhi tree or following the “Sutra Mahayana Mahaparinivana” is a symbol of “Bodhicitta” to achieve enlightenment for the sake of all living beings so that it can lead one to the path of happiness and prosperity.

The Bodhi tree is known to serve as a habitat for a variety of diurnal and nocturnal wildlife that are attracted to the fruit and flowers of this tree and provide a suitable environment for nourishment and protection (Hendrayana *et al.* 2022, Maryanto & Mumpuni 1990, Soegiharto *et al.* 2010). A tree's position in the anatomy of a plant system indicates its access to vital water sources. As a result, this tree plays an important role, symbolising its ability to provide nourishment and serve as an environment that supports enlightenment. This condition is with following the “Avalokitesvara Bodhisattva Sutra”, which states that Kalpataru always helps living beings in need (Waldron 2009).

The Kalpataru flower, represented by the Lotus, can be seen as a phase in the spiritual kingdom, signifying the attainment of complete enlightenment. According to Sangharakshita (1993), flowers that have unlimited aesthetic appeal can provide satisfaction in one's existence, even though these plants have the anatomical ability of roots to stretch up to 10 meters in length and grow in dirty water environments (Fauziah *et al.* 2018), or an analogy to describe the human character who has experienced a state of enlightenment so that plant can be associated with the concept of the meaning of “Triloka” (“Three Realms are Truth, Holiness and Beauty”) (Halim & Herwindo 2017), and thus the element of “vedanākkhandha” as an aggregate group of

feelings can be more emphasised. In connection with the Kalpataru fruit, a book on the “Danaparamita sutra” refers to a plant similar to the mangosteen found in the King Suddhodana Garden (McCombs 2014). In these circumstances, the Karmawibhangga's story may have replaced the term “mangosteen” with the *Garcinia pedunculata*, which is only known or distributed in India, not in Java (POWO 2023). The mangosteen fruit represents a metaphorical aspect and an illustrative example of the fundamental characteristics inherent in living organisms. The fruit's outer skin is dark purple, but the inside is white. Symbolically, the body can be dark or dirty, but the deepest inner heart must be white, meaning it is pure of lust. According to Worsley *et al.* (2014), the fruit is purple and has a white interior. These characteristics led to her appearance as a symbol of beautiful princesses in the “Sumanasantaka Kakawin,” an ancient Javanese literary work.

In the context of “Pancaskandha”, the mangosteen fruit acts as a representation of integrity, an integral part of the “Nama” (inner heart). The fruit consistently reveals the precision of its characteristics, with a parallel between its outer appearance (word) and its inner substance (reality). Therefore, the mangosteen fruit is widely regarded as a representation of integrity. The “Pancaskandha” concept cannot be separated from “Viññāṇakkandha”, which refers to the aggregate of consciousness, the cluster of creativity, or the sense of knowledge.

Cultivating the mangosteen philosophy is important because of the honesty and harmony between verbal expression and life experience. The existence of mangosteen must be read intra-inter-extra textuality because it relates to a series of “Svarga” inscriptions on the temple's north and east (right sides). Attaining “Svargga”, which yields the reward of “Nibbāna”, namely the noblest happiness and the pinnacle of noble pleasure and well-being, is considered the most significant achievement. This statement is supported in Dhammapada 203-204 (Mahāthera 2005).

In the context of Panel O-102, expressed by Krom (1920), it is a musical performance in heaven. On the panel, the Kalpataru is depicted with a series of long flower strands (“Ronce” in Javanese) decorated with “Tanjung” (Javanese) flowers, and extra textually, it is actually a symbol that must be raised or in accordance with its vocabulary. The flower species “Tanjung” (Indian medlar) has a different morphological

structure characterised by the layout of its leaves. Austronesian languages display lexical diversity through phonetic representations of the term "Jung," which conveys the concept of objects or entities undergoing a size reduction, similar to the visual effects observed when the eyes are partially closed.

The term "Ujung" (Javanese) or "End" is also related to its semantic width, similar to the term "Jung" denoting a smaller ship. The term "Tanjung" also has the connotation of "land that extends to the sea," while the word "Junjung" (Javanese) means "raise." Suppose it is related to one's social position. In that case, that person is in the higher strata with "high power." Similarly, the depiction of flowers and their leaves conveys a message about achieving hope, as evidenced by the foliage's healing properties and the flowers' therapeutic aroma. These characteristics are believed to rejuvenate the spirit and promote well-being, aligning with the "Pancaskandha" concept mentioned earlier.

Extratextual elements can also convey messages related to the state of the heavens that require amplification or dissemination. Panel O-102 suggests that happiness can come from monks or religious personages and nobles, such as leaders who implement "Pancaskandha". This is evident from the reliefs of a holy nobleman, represented by the symbol "Hallow", which is depicted at the same level of importance as the priestly priest. The reliefs panel O-102 emphasises that holiness can be achieved by priests and persons of noble status, or who disagree with Krom's (1920) story, which only describes a "musical performance in heaven."

In the case of panel O-154, Kalpataru represents an inclusive paradigm between actants and heaven, serving as a symbolic goal that must be pursued seriously for the benefit of mankind, thereby facilitating the achievement of efforts for the welfare of the universe. To achieve this, hard work and routine efforts are needed, and the panel story choreographer reveals the emergence of non-mystical flora-fauna, namely Breadnut ("Kluwih" in Javanese), plantain squirrels and Estrildidae finches, which are unusual or equated in one panel with the Kalpataru relief like those in the stand-alone panels. In panel O-154, Kalpataru is exposed on the left side, and a preliminary reading is part of a group of panels depicting several effects arising from one cause (Krom 1920, Fontein 1989, Santiko & Nugrahani 2012). They express it as a story: "A pair of people receive something from a man sitting on a

divan. A landowner sits on a divan, accompanied by two women, and a god sits with two women." The unusual appearance of non-mystical flora and fauna alongside or equivalent to Kalpataru cannot be discussed intra-textually only. The appearance of the Kalpataru relief as an aggregate symbol of the existence of heaven and an expression of obtaining happiness is revealed in three groups of human reliefs in panels O-154, all of which can be obtained by giving to charity. To increase happiness through extra-textual giving, the choreographer's relief juxtaposes non-mystical flora and fauna, which is thought to be an invitation to imitate their behaviour.

The existence of the word "Kluwih" tree, according to de Saussure (1959), is related to the naming of the word along with matters in the linguistic concept following the concept of "Langue, Parole, and Reference". The word "Kluwih" is lexicologically derived from the word "Linuwih", an ancient Javanese term that still exists today, meaning excess. The emergence of the meaning of "Kluwih" is also emphasised by the symbols from the plantain squirrel and Estrildidae finches reliefs. From their nesting behaviour, plantain squirrels diligently collect and store food. In contrast, Estrildidae finches, in their behaviour, always work hard and diligently collecting dry leaves one by one to arrange them into a nest. Such conditions are similar to those recommended by Lundberg *et al.* (2021) to consider tropical ecology in its imagination, particularly the tropical imagination, to bring the scientific system into relationship with humans, culture, society, and nature. In this study, it has been implicitly recommended in the relief related to karmic law.

Kalpataru as a Cosmological Paradigm. The reliefs of Kalpataru are also related to Buddhist teachings, as they can be interpreted as the concept of the Middle Way. The Middle Way is a concept that refers to a philosophical approach characterised by moderation that aims to avoid the two extremes of excessive self-excess and self-rejection of the two worldly dichotomies. The Kalpataru symbolises the balance between opposing realms (binary oppositional), as it stands firmly on the ground and at the same time extends transcendently towards the celestial circle so that it can serve as a symbolic representation of the Buddha's deep compassion and the endless striving to liberate all sentient beings through suffering ("samsara"). This means that Kalpataru is a thinking paradigm that

emerges from the logic of binary opposition but prioritizes an inclusive perspective on interconnectivity because the elements relate to each other.

The illustration of the Kalpataru on the Karmawibhanga relief in Borobudur temple captures the character of a fertile and flowering tree characterized by various leaves and flowers that create beauty (Fig. 3A). Contextually, the tree shows itself as an essential resource with its abundance based on the principle of interconnectivity. The reliefs of this tree are enhanced by the presence of various animals, including real and mythological creatures that, in a post-human perspective, also show the interconnectedness of each actant, both flora and fauna, and mythological creatures that exist at the level of the imagination. The state of Kalpataru's depiction is complex and concerns the interconnectedness of different actors in life or is a cosmology about an inclusive world. The Kalpataru motif represents the cosmos, with its roots extending to the outer world and its branches reaching into the celestial world. This suggests that Kalpataru gives us a non-linear, non-binary oppositional perspective because everything is connected as an active actant and significant concerning Buddha, as it is often depicted as Buddha sitting beneath the branches of a Bodhi tree, as often seen in the Lalitavistara story (Metusala *et al.* 2020).

Furthermore, according to Krishna (2019), the reliefs of the Kalpataru function as a cosmological paradigm that symbolises the intrinsic interconnectedness of all entities. The roots of this tree represent the subterranean kingdom, also known as the Samsara domain, which encompasses the eternal cycle of life and death; the tree trunk symbolises the domain of human existence, also called the earthly world, with the branches of this tree symbolising the heavenly world or nirvana, meaning a state of spiritual freedom from the cycle of birth and death known as samsara.

The Kalpataru is considered a symbol of Buddhism due to its association with the ideas of wealth and charity. According to popular belief, this tree can grant wishes, but on the condition that the wishes made do not have self-centeredness or evil desires. This is similar to the teachings of Buddha, in which he stated that followers could achieve happiness and contentment, provided they properly adhered to the teachings. The Kalpataru is also recognised as a representation of wisdom and goodness, and

the ability to understand the needs of all entities and fulfil their wishes in a way that benefits the collective.

The Pali Canon often draws parallels between the Buddha and the Kalpataru. In the Anguttara Nikaya, Buddha articulated the following statement: "Just as the wish-granting tree fulfils the desires of all feeling beings, I also fulfil the desires of all feeling humans who seek refuge in me" (Krishna 2019).

The association between the Kalpataru and the ideal Bodhisattva is observed in the Mahayana tradition. Bodhisattvas are sentient entities deeply committed to assisting others in achieving enlightenment. The Kalpataru symbolises the altruistic nature of Bodhisattvas, as they demonstrate a deep desire to sacrifice their own lives and wealth for the good of others. The following examples serve as concrete illustrations of how the Kalpataru can be interpreted as a metaphor for Buddhist teachings:

- The symbolic significance of the Kalpataru's roots lies in their representation of the fundamental causes of suffering, as outlined in Buddhist teachings, namely attachment and desire (Soekmono 1992).
- The number of Kalpataru trunks consisting of 8 branches symbolises the Buddha's eightfold Path (Halim 1988, Herwindo 2015), a transformative path that leads to liberation from pain. The eight steps are: Right Understanding, Right Thought, Right Speech, Right Action, Right Livelihood, Right Effort, Right Attention, and Right Concentration.
- The branches of the Kalpataru have symbolic value because they represent various Buddhist teachings (Istanto 2018) about various aspects of the path, including wisdom, compassion, and ethical behaviour
- The leaves of the Kalpataru symbolise Buddhist teachings about various phenomena in the world, including the nature of reality and the transitional nature of all things (Sudarm 2005).
- Finally, the fruit of the Kalpataru means Buddhist teachings about the ultimate goal of liberation, namely the achievement of nirvana (Halim & Herwindo 2017).

The interpretation of the Kalpataru is linear, meaning that it tends to be inter-textual. The post-human approach appears more non-linear by paying attention to intra-inter and extra-textual

relationships. In a post-human view, the Kalpataru not only symbolizes the idea that Buddhist teachings can provide extraordinary wealth and compassion but also does not place humans as the centre of everything, but instead explains that humans provide needs that come from everyone's reciprocal actors who are equally, inclusively, and non-linearly linked in achieving happiness. The Kalpataru, as a tree of life, does not place man as the centre for receiving moral messages that should sustain moral life. People do not also function as bearers of the moral key to life; instead, they must place themselves together with the universe so that the central place is not in the role of man but all actors, both human and non-human, together. This paradigm is a life strategy that prevents people from feeling proud or arrogant and superior to other beings because there is nothing without the existence of other actors in human life.

The Anthropocene is a proposed geological epoch reflecting the profound impact of human activities on Earth's ecosystems. Žižek (2010), a Slovenian philosopher and cultural critic, has offered a unique and provocative perspective on the Anthropocene, arguing that it represents a fundamental shift in our relationship with the planet. According to Žižek, the Anthropocene is a matter of human domination of nature and complex interactions between humans and the non-human world. He argues that we have entered into a symbiotic relationship with the planet, where our actions have unintended and often disastrous environmental consequences.

Žižek uses a variety of sources, including philosophy, psychoanalysis, and ecology, to develop his analysis of the Anthropocene, but does not draw on Buddhist sources. He argues that the environmental crisis is not a technological problem but a symptom of a deeper cultural and ideological crisis. According to Žižek (2010), the Anthropocene manifests the "capitalist superego," which drives us to endlessly consume and exploit the planet.

Žižek's "capitalist superego" combines Freud's idea of moral guilt with Lacan's notion of forced enjoyment. In capitalism, we're not told to repress desire—we're commanded to enjoy, consume, and be happy, which creates anxiety when we inevitably fall short. This endless pressure to enjoy fuels guilt and drives even more consumption, trapping us in a cycle of desire and dissatisfaction.

He argues that we must rid ourselves of this superego and develop a new ecological consciousness. Buddhist teachings contained in the Kalpataru paradigm are more about controlling the superego through a perspective that has post-human principles.

The four cardinal points in the Karmawibhangga story, Kalpataru, are not found on the South side. The South Gallery at the Kamadatu level in the Karmawibhangga Relief does not contain the Kalpataru Relief. The entire relief depicts worldly life, which operates based on worldly desires. Kalpataru, as a cosmological framework in the Karmawibhangga narratives, can be explained as:

- The eastern gallery of the temple shows a relief of the Kalpataru surrounded by ten bodhisattvas. This implies that the Kalpataru functions to achieve enlightenment and liberation for all sentient beings (Panel O-155). The existence of the "shank" symbolised by the reliefs of chalk shell mollusc (*Turbenella* sp.) (panel O-150) symbolises his courage in declaring the truth of dharma and his call to awaken and work for the benefit of others.
- The northern gallery of the temple has a relief depicting the Kalpataru, accompanied on both sides by Kinara-Kinari. This creature is generally seen as an iconic representation of heaven, implying that the Kalpataru is symbolically a life goal for individuals seeking to access the heavenly path (panel O-101).
- The west gallery of this temple shows a relief of the Kalpataru surrounded by reliefs of the six worlds of life (Istanto 2018). This states that the Kalpataru functions as a means to transcend the six worlds and attain liberation (panel O-99).

The components of the flora and fauna in and around Kalpataru, show the important value of interconnections between various agents in the universe. From a cosmological perspective, this interconnectivity is a critical aspect, one that means all actors have equal roles, so the principles of balance and inclusiveness are essential. Meanwhile, in the view of Sukmono (1992), who tends to look linearly, emphasises the intrinsic relationships within Kalpataru only. He said that the tree roots, although not visible in the reliefs, represented the foundation of the

cosmos. He does not see interconnectivity between actors in an equal and inclusive role. Unlike Istanto's (2018) analysis, the Kalpataru symbolises the interconnection between all creatures. The tree's roots intricately blend with the soil, creating a vital connection with the earthly environment, while the branches stretch upward toward heavenly expansion. This observation suggests the inherent interconnection and interdependence among all entities. The Kalpataru is a symbolic representation that provides moral lessons on practicing generosity and compassion. Even though he looks at interconnectivity, his analysis is still linear, so it does not involve non-linear and inter- and extra-textual perspectives.

Kinara-Kinari as an Actant Equality Paradigm. From a non-linear posthuman perspective, considering the aspects of intra-inter-extra textuality, this study interprets the Kalpataru as a message of equal interconnection between three actants: bodhi leaves, lotus flowers, and the fruit of the mangosteen. Meanwhile, the presence of Kinara-Kinari in the form of humanoid beings, birds and people singing heavenly songs, demonstrates the happiness of living in equality between actors supporting each other in one united body.

Interpretation from a posthuman perspective reveals significant differences when compared with Santiko's (2016) study, which examined the Kalpataru and Kinara-Kinari phenomena. According to Santiko, Kinara-Kinari is an anthropomorphic entity described as a separate being with a visible relationship with organisms in the natural world. The bird species known as Kinara-Kinari is characterised by anatomical features different from those of a human head, making it a mysterious entity in ornithology. Meanwhile, according to Santiko & Nugrahani (2012), Kalpataru is depicted in several examples of panels facing north and east on the right. These reliefs are accompanied by panel inscriptions referring to the word "svarga", as evidenced by the inscriptions on panels O-126, 130, 137, 147, 149, and O-151.

Heavenly creatures, a composition of humans and nonhumans, are a combination of actants that are equivalent to an embodiment not only in the sense of a moral message about the harmony of the universe but also as a paradigm for viewing the world. The interconnectivity of actants as a unit also indicates the importance of achieving a common goal that is not centralised solely on human interests. This means that 'heavenly,' in

the sense of happiness, is not something intended only for humans, but also for all creatures in the universe. This teaching, which does not prioritise human centrality, also shows that achieving joy and ending the cycle of existence, known as Samsara, is a common interest for humans and non-humans. This is a posthuman paradigm, where the concept of heaven in life serves as a paradigm for viewing the world as a means to escape from Samsara. If it is not inclusive, the samsara of one actant will only produce the samsara of other actants, so the chain of oppression between actants will continue to occur. Therefore, without inclusivity and equality as a paradigm, such as the meaning of Kalpataru, the possibility of escaping from samsara is increasingly far from being achieved. The body of Kinara-Kinari's posture and expression of animals can be deduced from the morphology of the wings, tail, and legs, as well as from the position of the toes (Fig. 3B). These features suggest that the animal depicted is a Pigeon, which historically symbolised the transmission of messages. In addition, the pose can symbolize the reliefs of a Green Peafowl, representing the transmission of greatness, as it will bring true peace and happiness. The first Kinara-Kinari relief is revealed in panel O-101. Krom defines it as "a musical performance in heaven" in a linear perspective, showing no deep meaning. In this panel, the reliefs of Kinara-Kinari are identified as Green peafowl. Panel O-101 serve to highlight the initial marker of an alternative narrative portal distinct from the other sides, the east, south, and west panels in the Karmawibhangga story. The Green peafowl, or "Merak" (in Javanese), is connoted as a majestic animal because of the hope of happiness that will be obtained in the story Lalitavistara (Ashari *et al.* 2021). It appears at the beginning of the Karmawibhangga story. It is located on panels facing north and indicates that the north side of the Karmawibhangga story will tell the story of a glorified condition. Furthermore, the male green peafowl is a bird with a long, beautiful tail that blooms upwards, accompanied by a large flower pod structure called "Kasimpir" (Javanese). The Green peafowl is associated with graceful, gentle, and feminine beauty to symbolise the beauty of women. "Merak" also expresses joy in the heart until the phrase "Merak Ati" is found, which means to comfort the heart. Therefore, the beginning of the story that can entertain the heart, which is the complete Karmawibhangga story, begins on panel O-101.

Concerned with the analysis of contextual connections within the panel or intra and inter-textually, the Kinara-Kinari illustration in panel O-102 is related to the previous panel (panel O-101). In the reliefs panel (O-102) of Kinara-Kinari, the morphological form of a Pigeon is shown. According to Ashari *et al.* (2021), the conditions observed in the Kinara-Kinari can be seen as analogous to the function of an announcement of messages related to the initiation of a series of “Merak Ati” in Javanese or comforting narratives to achieve happiness, like the Kinara-Kinari fauna symbol, which has been revealed on panel O-101.

The connotation of “spirit comforting” is further revealed by the reliefs of the Kalpataru, Kinara-Kinari. The inscription inside the panel frame is marked with the word “svargga” as shown on panel O-126. Krom defines it as a story related to “svargga” atmospheric conditions with polite conversation “(gosthi)”. The Kinara-Kinari fauna in the panel is depicted as having a leg-characterized morphology resembling that of a pigeon, but a body resembling a green peafowl. Therefore, Kalpataru appears with the reliefs of Kinara-Kinari. These messages must be read outside the content of the text (Langlands 2018) because in this panel, there is a meeting of the interconnection of the Kinari-Kinari symbol assuming the attitude of a sacred bird species known as “Pavouistic”, which in essence consistently associated with divination as a symbol of aesthetic appeal (Ashari *et al.* 2021), while the reliefs of Kinara-Kinari, which shows clues or messages of curiosity, obtain personal meaning from the subject.

Curiosity is often associated with aesthetic representations characterized by elegance, delicacy, and femininity, serving as a symbolic representation of female beauty. Therefore, the type in question is an indicator of the animalistic form that has been identified. In Javanese, “Merak ati” conveys feelings of inner pleasure. It is believed that by obeying the body's teachings and engaging in regular prayer, individuals can cultivate qualities similar to those displayed by the mangosteen tree, as described in the previous section.

The reliefs of Kinara-Kinari are placed at the end of the Karmawibhangga story. At the same time, Kalpataru has not yet been revealed in a form like the significance of Kalpataru and “Pancaskandha” discussed earlier. The story is revealed in panel O-160. Krom (1920) and Santiko & Nugrahani (2012) describe it as: “A

man wearing oversized clothes sits in the middle of three women, next to him sat another man.” The reconstruction of the narrative must be carried out through intra- and inter-textual analysis. The presence of a crowned Elephant in panel O-159 is a symbol of transitional vehicles (Achmadi *et al.* 2020, Rusdianto *et al.* 2020) and extra textually, the existence of the body tree on the right and the mangosteen on the left in panel O-159 cannot be separated from the reality of interconnectedness to the ultimate goal of liberation which is to attain nirvana (Halim & Herwindo 2017) to obtain the happiness that is always preserved and can be clearly explained inter-textually in panel O-160.

In panel O-160 several previous research studies (Krom 1920, Santiko & Nugrahani 2012) argued that this panel was the story of “A nobleman sits in a hall accompanied by two women, we can see people saluting him.” Reconstruction of the tale seems necessary because the appearance of the Kalpataru relief in the middle, along with two other trees, all of which have no form, as well as the reliefs of Kinara-Kinari with the form of a green peafowl, cannot be separated from the concept of “Pancaskandha”. The feelings of happiness for those who follow and sadness for those who do not follow can be seen in the facial expressions on the O-160 panel.

The reliefs of Kinara-Kinari are identified as a green peafowl, which has the meaning of being an entertainer of the Gods in heaven, and good at playing music. In contrast, in the interpretation of Setiawan (2019), Kinara-Kinari symbolises harmony and faithfulness in life. Today, it can still be expressed in performing arts and used as a broadcast medium for Javanese culture in “wayang” arts or puppet performances. Three chords of the Slendro scale are used, namely “Slendro 6”, “Slendro 9” and “Slendro Manyura”. The word “Manyura” comes from the Sanskrit word for green peafowl. In the “Wayang” or shadow play with leather puppets, the story concludes with a happy ending, accompanied by the singing of a gamelan piece in the “Slendro Manyura” scale, symbolizing the triumph of truth and the protagonists and community achieving a peaceful and happy life. A return for those who follow, and sadness for those who don’t. Furthermore, to achieve happiness for those who follow it, the story from the end of the Karmawibhangga can be continued with the story of Siddhartha Gautama's journey in the Lalitavistara story.

Conclusion

The Kalpataru tree, as an Indonesian environmental symbol and as a biological species, cannot be identified, bringing it closer to the philosophical idea of "Pancaskandha", which is one of the foundations of Buddhist teachings. The Karmawibhanga panel highlights the need to cultivate the qualities of generosity and compassion towards others, regardless of their race, religion, gender, or social background. It also emphasises that the Kalpataru serves as a symbolic representation, reminding us to acknowledge and respect the various life forms on Earth. The branches and leaves of this tree symbolise the wide variety of biodiversity on our planet. The Kalpataru symbolizes the quest for enlightenment, encouraging individuals to actively seek spiritual awakening. The fruit the tree symbolises the ultimate goal of human existence: enlightenment. Overall, the Kalpataru is a powerful symbol signifying the universe's complex interdependence, diversity, and nature. The heavenly relief, which represents a happy atmosphere in all its aspects, is basically a symbol of inclusivity, equality, and balance in relationships between actors in life in the universe. Therefore, Kalpataru is often placed in the middle of contexts, including between Kinara-Kinari, or other contexts of social life represented in the reliefs. Kalpataru is a middle way for the process of achievement, and this middle way is an inclusive paradigm between actants. This means that heaven is a symbolic goal related to efforts for the well-being of the universe or a goal related to a happy ending. In short, Kalpataru teaches about equal relations between actors as in posthuman methodology, even though the temple was built in the 8th century.

Author Contributions

All authors made an equal contribution to the manuscript.

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Supplemental data

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