

10

ENTANGLED TRADITIONS

The royal barges of Angkor

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The aim of this chapter is to analyse the role of Indian iconography in the establishment of Angkor's fluvial cultural landscape by leading a contextualised study of boats. This type of study proposed by Van de Noort¹ and Adams² revolves around the analysis of the interrelationship between people and boats, and how the resulting dialogue generates the traditions that give form to maritime, or in this case, fluvial cultures. With 34 contextualised nautical scenes depicting over 106 boats available for study, this analysis can be done in considerable detail. In what follows I will discuss riverine watercraft as the functional objects that allowed the people of Angkor to colonise the aquatic space for its resources. Particular attention will be given to the contexts of construction and usage, which seem to have a strong pre-Indian set of beliefs. The discussion will then move to analyse the transformation of functional watercraft into zoomorphic vessels used in culturally charged activities where boats act as liminal agents and are imbued with symbolic meaning. It is in this context of transformation that Indian iconography played a key role.

In his study of canoes and sailing in Papua New Guinea, Malinowski³ wrote: 'a craft, whether of bark or wood, iron or steel, lives in the life of its sailors, and it is more to a sailor than a mere bit of shaped matter [...]'. To Malinowski, the emotional attitudes of people toward their craft were the motor by which to know what boats meant in the eyes of their users.⁴ This anthropological approach to the study of watercraft results in a more meaningful understanding of boats within their social context, but to reconstruct this for past societies is a challenge, as users are no longer available for questioning. An alternative way of studying boats in their cultural context is by analysing the different elements that affect the life of boats. These can be defined as purpose, technology, tradition, materials, economics, environment and ideology.⁵ The purpose or function of a vessel is determined

by the needs of a society, but their ability to deliver an efficient watercraft is constrained by technological advancements. Function and technology nonetheless exist within a tradition that embodies the idea of what a boat is and how it must be constructed, and thus boat construction is, above all, social practice.⁶ As a product of society, boats are carriers of symbolic and ideological constructs that have been put in place to ensure best practice. Failure of boat design comes at great personal and material cost, and therefore it has been noted that boat builders exerted great caution in the introduction of new designs.⁷ However, as Adams pointed out, barriers erected by ideology are not immutable and are subject to human desire to refine and innovate.⁸ Thus change occurs as a result of a dialectic process between the numerous factors involved in boat construction.⁹ Materials, economics and the environment are some of these factors; the availability of materials, the resources involved in the processing of boats and the constraints imposed by the environment limit the development of boat construction, and as a result, alterations to them can lead to changes in boat design.¹⁰ But perhaps the most distinctive factor that affects boat construction is the ideological concept that determines what a boat is.¹¹ In this respect, it is the bow and the stern where researchers have to turn if they are to understand the philosophy that governs a society.¹² These sections of a boat are probably one of the most prominent features in boat design, as they confer the visualization of what a society thinks a boat should look like. It also becomes an identifiable cultural trait that demarcates the boat-builder's adherence to a specific group, a display that is as much for those belonging to the same group as it is to those outside the group.¹³ The production of boats is therefore entangled in multiple elements that affect the design of boats in different ways; however, it is 'in the social aspects of life surrounding the production and use of ships that ideologies are played out and become most visible'.¹⁴

By studying the boats of Angkor as part of fluvial material culture embedded in the human–environment interaction debate it is possible to begin to understand the role of boats in Angkor's fluvial cultural landscape. The approach taken here is to look at boats as culturally constructed entities 'endowed with culturally specific meanings, and classified and reclassified into culturally constituted categories'.¹⁵ This approach focuses on the dialectic process that takes place between boats and people, and aims to discern how the former is redefined and used throughout its lifetime through the study of its cultural biography.¹⁶ As with any human being, the cultural biography of boats can be elaborated on by looking specifically at the construction, use, modification and demise of boats within their social context.¹⁷

The corpus of Angkorian nautical iconography is very wealthy both in the number of boats depicted and the detailed representation of nautical elements and boat usage. Of the 106 vessels depicted in the 34 scenes representing nautical iconography, 95 of them are dugouts or raised dugouts, two are planked vessels and the other two are bundle rafts, while the remaining seven are too deteriorated to determine their construction technique. The activities in which boats are centre stage are varied and they include warfare,



FIGURE 10.1 Nautical iconography in Angkor contains a great wealth of information, not only in terms of nautical technology, but also on boat usage and location. In this scene from the Bayon temple a noble lady picking a lotus flower appears. The action takes place in a pond, as marked by the stepped shoreline. Source: V. Walker.

pilgrimages to religious sites, state progresses by water, rituals, festivals and economic activities like fishing and trade.¹⁸ The environment where the boats are used differs from manmade pools to natural spaces like rivers or lakes. The vast majority of the boats are decorated with zoomorphic shapes (77) and are used by the elite, while only 16 correspond to undecorated boats (14 used by commoners, and two used by court ladies to pick up lotus flowers in manmade ponds; Figure 10.1). Except for one medium-sized vessel, the majority of these undecorated boats are small in size. Although this limits our ability to fully grasp the nautical technology of medium-to-large size vessels used by commoners, the iconographic data of small-size vessels are nonetheless instrumental in understanding the cultural processes that lead to the transformation of boats into mythical creatures from the Hindu pantheon.

The general consensus is that the boats of Angkor were dugouts,¹⁹ or expanded dugouts,²⁰ a theory that is supported by the iconography and the written account of Zhou Daguan, a Chinese emissary who visited Angkor at the end of the thirteenth century, wherein it is said that very large boats were made with hardwood broken into planks held together with iron nails, while smaller boats were made from a single very large piece of wood, hollowed out by chiselling and then stretched using heat from a fire and wooden timbers.²¹ According to this source, smaller boats were broad at the centre and pointed at either end.

While there are no archaeological remains that can provide additional data on large vessels, the suggestion that smaller boats were made from a

single log of hardwood was confirmed by the archaeological record when two dugouts were found in the area of Siem Reap: the Angkor Thom boat, dated to the thirteenth century,²² and the Kra Raleung boat, dated to the fifteenth century.²³ The Angkor Thom boat is an unfinished vessel that shows the same process of wood carving as the one documented in contemporary Cambodia and in the delta region of Southern Vietnam, as will be discussed later on. On the other hand, the remains of the Kra Raleung boat show a series of holes drilled on the boat at equal intervals,²⁴ which are marks that can be interpreted through the ethnographic data as *chak bansak*: A series of holes drilled on the hulls to even out the walls of the dugout. The use of embers and timbers to expand the walls of the dugout mentioned by Zhou Daguan also resembles the technique documented in contemporary dugouts, and the description of the hull design (large in the middle and pointed at either end) could easily be applied to contemporary Cambodian vessels. In Cambodia, boats are also made of *koki* trees (*hopea odorata*), like the Angkor Thom and Kra Raleung boats. Hence, the archaeological, historical and ethnographic record shows a certain degree of continuity. Conservatism among maritime communities is widely documented; since environmental conditions tend to remain persistent (i.e. currents, flow, winds), once an optimal solution has been achieved the introduction of new designs are met with skepticism.²⁵ This is mostly due to what Hunter calls common sense: The optimised design has proven to be efficient in facing the dangers involved in navigating the waters that it was designed for, so change appears superfluous and risky.²⁶ Given the accumulated archaeological, historical and ethnographic evidence, and taking into account the aforementioned conservatism, this study will use ethnographic data to provide a more comprehensive view of the archaeological material of common watercraft that forms the basis of decorated watercraft at the centre of this study.

Khmer boat-building in an ethnographic context

In the cultural biographies of objects the first thing that needs to be addressed is who made the object—in this case the boat—and why.²⁷ In contemporary Cambodia it is usually a man, who will become a private owner, who orders the construction of the boat.²⁸ The construction of a boat has an economic and apotropaic character, as it is expected to provide good business and bring good luck to the family.²⁹ Hence, since its conception the boat is already expected to have its own agency that will affect the safety of the journeys and the prosperity of its owner. Before explaining the rituals surrounding boat-building in Cambodia, it is important to provide a context to these actions, as they form part of the Khmer traditional system of beliefs. According to this system, the world is divided into two different spheres: the world of the forests (*prei*) and the world of the village (*srok*). The former is governed by wild spirits while the latter corresponds to domesticated spaces.³⁰ These are not immutable landscapes, as forests

can be transformed into domesticated spaces, and the forest can take them over if the proper ritual is not followed.³¹ So even though there is a clear demarcation between the *prei* and the *srok*, there is also a fluid relationship between them.

There are two ways in which this system of belief affects boat construction today: the processing of the wood and the location of boat-building activities. First, it is thought that the spirits inhabit trees,³² therefore there is a ritual procedure destined to get permission from the spirit before felling the tree.³³ The way the wood is processed is also very revealing; the wood is given form with chiselling tools, and the fire used for opening the walls of the dugout is fuelled with the debris of the hollowing-out process. Helms has proposed that as living forms with ascribed supernatural potencies, trees that were transformed into boats likely retained the extraordinary powers of the parent tree,³⁴ a proposition that seems to be in place in Khmer boat-building traditions. The ideological context surrounding work in the forest would have required the boat-builder to carefully manage the intangible forces contained in the material.³⁵ In this sense, the consumption of the boat's debris from the hollowing-out process in the fire on which the boat is later placed should be seen as part of this material processing wherein the discarded wood is burnt and made part of the boat again through the smoke and the heat. The way in which wood is processed in Cambodia for the construction of dugouts therefore ensures the continuation of the tree's supernatural powers (and agency) into the boat. The need for other-than-human agency in watercraft that could contribute to safe and profitable journeys explains the survival of this type of wood processing for boat-building in Cambodia up until the early twenty-first century even though other technologies (i.e. plank-built ships) were available through contact with other cultures.³⁶

The second way in which the Khmer traditional system of beliefs affects boat construction is the location of work. The tree is felled in the forest, which is a space controlled by wild spirits, so while the work takes place in this landscape there are a series of taboos related to behaviour (i.e. no loud conversations, no laughter) that need to be observed. Additionally, offerings and rituals have to be conducted to protect the boat-builders from the wild spirits.³⁷ Once work in the forest is finished the boat is called *touk kamrol*, wild boat; then a ritual is performed to ask the wild spirits for permission to leave the premises and take the boat, and another ritual is performed in the village to ask the domestic spirits for protection.³⁸ The polishing of the boat then takes place, and the village's shaman takes over the rituals.³⁹

The final transformation of the wild boat into a boat is marked by two actions and accompanying rituals. First, a pair of symmetrical eyes for the boat are carved from wood and placed on the hull. These will help the spirit of the boat see any dangers on the river and avoid collisions.⁴⁰ The second action is the launching of the boat once it is finished; the owner and the family get on board and the shaman (*acar*) directly addresses the boat to

let it know that in the forest it was a *koki* tree, but in the village it is now a boat and its name is luck and prosperity.⁴¹ The processes involved in the construction of dugouts in Cambodia are thus conducive to the creation of watercraft imbued with other-than-human agency destined to bring luck and contribute to the safe journey of the owners.⁴² Malinowski posited that the need for this type of apotropaic ritual stems from the anxiety that the sea provokes in humans.⁴³ This shows that the Mekong River Basin can exert the same kind of apprehension in humans.

The archaeological, historical and iconographic evidence clearly shows that dugouts were used during the Angkor era, and that these were made in a similar fashion to the ones documented in the ethnography. More importantly, wood processing was done in the same manner: chiselling the log and never using saws.⁴⁴ Taking this into account, it seems likely that similar ritual practices and apotropaic attributions were therefore in place during the Angkor period (ninth to fifteenth c.), but given the pre-Indian elements present in rituals it seems highly likely that the nautical tradition predates the arrival of Indian merchants. Similar practices have been documented in Borneo,⁴⁵ which may point to regional pre-Indian traditions.

The activities of these utilitarian vessels, such as fishing and transport,⁴⁶ would have dangers associated with them⁴⁷ that could result in the loss of cargo, loss of life or both. Creating apotropaic mechanisms that would contribute to safe and profitable journeys suggests that even though the people of Angkor used the Mekong River basin, they perceived it as a dangerous space for which other-than-human agency was needed. Furthermore, the identification of the boat as a living entity is furthered in the way boat parts are named in Khmer, as each part of the boat is named akin to the human body: the bow is called the *khbal* (i.e. head); the section between the bow and the first thwart is called the *ka* (i.e. throat); the first thwart is known as the *sma* (i.e. shoulder); the walls of the boat are called the *sach* (i.e. flesh); the central section of the boat is the *troung* (i.e. chest); the ribs are called the *chhaeing* (i.e. skeleton); and the section between the last thwart and the stern is known as the *chrak ka kansay* (i.e. heel).⁴⁸

The ritual behaviour that surrounds contemporary boat construction in Cambodia indicates that the utilitarian boats of Angkor, which the evidence suggests were made in the same way from a technological perspective, possessed the same apotropaic and other-than-human agency attributions as their modern counterparts. The need to create a functional object with independent agency to bring good luck to the owner and help in the success of the journey was likely the result of the perceived dangers of navigating the Mekong River basin. However, the cooperation of the spirit came at a cost in terms of construction process, material processing and ritual behaviour that had to be observed throughout the life cycle of the boat. The perception of boats as living creatures that were owed respect not only marked the way ship-building traditions developed, but also set the tone for the modifications and uses that will be seen below in the context of social practice.



FIGURE 10.2 Decorated boats are used by the elite in a variety of settings; the scene located on the west wall of the pond lying just outside the northeastern wall of the Phimeanakas complex, in Angkor Thom, represents seven boats, five of which are carrying noble people toward the stairs in the middle of the pond's wall. Containers are seen onboard the vessels, and in one instance a nobleman is reaching into a chest held by one of his servants. Source: V. Walker.

From plain forms to zoomorphic shapes

Khmer nautical iconography, generally dated to the twelfth to thirteenth centuries,⁴⁹ has 77 decorated boats out of 106 boat depictions: 45 are used by the elite in peaceful activities, while 32 take part in warfare activities.⁵⁰ Focusing on barges involved in peaceful activities, these are often of small or medium size, and are found in areas of the temples where access could be controlled (i.e. inside enclosures or in pavilions with doors; Figure 10.2), which marks the private character of these depictions. The only representations of decorated boats in public spaces are found in Preah Khan, where the causeways that lead to the temple are decorated with nautical iconography, as well as the side doors of the west *gopura*.

The most important features of Angkorian-decorated boats are on the one hand that the hulls have been modified and transformed into zoomorphic shapes tapping clearly into Indian iconography, and on the other hand that the boats are used exclusively by the elite in what can be interpreted as socially charged activities. It is therefore clear that the transformation of the boats is linked to social activities of the elite, likely of ritual character given the location of the representations in private spaces and the events that take place in the representations.

The archaeological, historical and ethnographic data discussed above suggests that the utilitarian vessels of Angkor were imbued with other-than-human agency, and that they acted as liminal apotropaic agents between nature and humans. The boats of Angkor's elite are characterised

by a zoomorphic transformation through decoration; boats are no longer utilitarian objects but fantastic mythical animals with prominent heads and tails, and in some instances, with bodies made of scales. Although there are no physical remains of the decorated boats of Angkor, the extensive iconographic corpus shows these decorations in minute detail. The modification of the decoration suggests a need to amplify the boats' potency by transforming the common hull into a mythological animal, so decorations need to be considered within their context of usage.

Hull decorations (i.e. the main body of the boat) are not very common in boats engaged in peaceful activities, and they only depict *makara*, a hybrid mix of crocodile, fish, tapir, bird and elephant, which is very common in Khmer architecture.⁵¹ Stempost decorations are more common, and they depict the *garuda*, the *nāga* and/or the *reachisey*. The *garuda* is a mythological bird that represents birth, ambrosia and heaven.⁵² This bird-like figure is the mount of Vishnu and is invoked in the *Mahabharata* as a symbol of martial prowess, speed and violent force.⁵³ In Khmer art, its figure is tightly linked to the *nāga*, a serpent-like creature that is considered to be 'the guardian of the treasures of the earth, the keeper of the energy stored in water, and the safeguarder [sic] of the prosperity of the region, traditionally related to water availability'.⁵⁴ The most common combination of these two is with *garuda* mounting on the *nāga*, profusely depicted in the balustrades of Angkor Wat. This combination, however, is not present in boat decorations. The *reachisey*, on the other hand, is another mythical creature of the Khmer pantheon associated with water that has a head of a lion, a small trunk-like nose and is covered in scales.⁵⁵ Although it seems to have common features with the *gajasimha*,⁵⁶ it is thought to be a mutation of the *makara*.⁵⁷ The *nāga* and the *reachisey* are hard to tell apart, as they both sport clenched teeth; however, the presence of a goatee and/or scales have been interpreted in this analysis as part of the *reachisey*. It seems likely that the decorations were related to either the purpose of the event in which the boat took part, and/or to the rank of the user, but this discussion is out of the scope of this chapter as the main interest lies in the processes involved in the transformation of undecorated boats to fantastic animals.

Transforming the myth into reality

The earliest depiction of zoomorphic boats in Angkor appears in the twelfth century as part of the mural decorations of Angkor Wat. The carving covers the majority of the wall and contains a single scene of two very large vessels set in a natural environment (Figure 10.3).⁵⁸ The one in the upper section has a *reachisey* decoration with its distinctive goatee.⁵⁹ A contiguous line of paddlers wearing livery and high chignons propel the boat toward the west. There are two elevated platforms filled with women, some with children. A grand central pavilion is located amidships where two men are playing chess,⁶⁰ the traditional pieces of the game in the Khmer version are visible.⁶¹



FIGURE 10.3 The figureheads of the two barges depicted in Angkor Wat represent an idea of how the boats used during the Dvaravati Water Festival would have looked. The boat from the lower registry has a heavily ornate *hamsa* (goose). Source: V. Walker.

The vessel on the lower section has a *hamsa*, an avatar of Vishnu in the form of a swan or goose, decorating the bow.⁶² Paddlers are also wearing livery, but they are only spread at the fore and the aft. At the centre there is a couple depicted in a large size surrounded by children. On the left room there are two women embracing each other, while on the right-side room there is another large bearded male figure⁶³ looking at a cock fight that is taking place on the aft platform. The scene seems to depict the mythical story of the Dvaravati Water Festival described in the *Harivamsa* II: 45–46.⁶⁴ Dvaravati is the city of Vishnu from where he departs on a maritime pilgrimage to a city called Pindaraca.⁶⁵ Vishnu encourages all those taking part in the nautical parade to indulge in the pleasures of life as they board magnificent vessels shaped like geese, peacocks and sea monsters, with golden pavilions decorated with gold and precious stones and crowned with garlands. Music, singing, dancing and love games are enjoyed by all on board.⁶⁶ The identification of this scene with the Dvaravati Water Festival story suggests that the boats depicted here are the way in which the artisans of Angkor envisioned the boats described in the story.

Political power and legitimacy in Angkor depended on the ability of the king to demonstrate his association with the divine world through ritual

re-enactment and the configuration of centres of power that represented the divine macrocosm in the mundane world.⁶⁷ These urban centres relied on the Hindu idea that there is a parallel between the macrocosm of the gods and the microcosm of humans. The power of the kings of Angkor thus depended on their ability to demonstrate to their subjects that they could tap into divine sources of power. This was done by creating symbolic associations that attempted to reconstruct the divine macrocosm in the mundane microcosm; in this way, the outer moat, the axial towers and the main tower of Angkor Wat are symbolic representations of Mount Meru surrounded by the ocean and the mountains. If the festival in the southwest corner pavilion of Angkor Wat is interpreted as the Angkorian interpretation of the boats used in the mythological story, then it seems logical that in attempting to reproduce the divine macrocosm into the mundane world the boat builders of Angkor would have copied these models for the boats of Angkor. While the agency of spirits in utilitarian vessels may have been good to exert influence on the mundane world, the transformation of boats into zoomorphic creatures from the realms of the gods suggests that these were more than apotropaic mechanisms to deal with the perils of navigating mundane waters. The transformation of boats into mythical creatures that are believed to inhabit the threshold of the divine world suggests that the elite of Angkor was seeking to colonise the metaphysical space attributed to the aquatic environment and reinforce that connection between the divine and the mundane.⁶⁸ The correspondence between the Angkorian decorated boats and the divine creatures after which they were modelled would have transformed boats into important symbols of the elite since this symbolic correspondence would mean that by using these boats the owners or users would become the divine counterpart of the creature depicted in the bow.

This phenomenon is well documented in Thailand: When the king, who is considered to be an avatar of Vishnu on earth, boards the royal barge *Anantanāgarāj*, boat and king are considered to be the living representation of the *Vishnu Anantaśāyin* myth.⁶⁹ *Vishnu Anantaśāyin*⁷⁰ is a theme from Hindu mythology where Vishnu is represented sleeping on the serpent Ananta on the cosmic ocean from where all things will be created. Vishnu's dream between creations and the birth of Brahma, who is the creative force that will generate a new universe, are the main elements of the *Vishnu Anantaśāyin*, while the role of Ananta is to be the floating bed of Vishnu, which to all effects could be seen as a zoomorphic boat (Figure 10.4).

Although the first representations of this mythological theme in Cambodia depicted Ananta as a coiled snake, this form was eventually substituted first by the elongated form of the snake, and then eventually by a *reachisey*. The reasons for this change are unclear, but it may be related to the personification of the ocean in the figure of the *dragon-makara-reachisey*; Bénisti reckons that Ananta is one and the same with the ocean, and reminds that one of the names of the ocean is *makarālaya*, the residence of the *makara*.⁷¹



FIGURE 10.4 One of the carvings of Vishnu Anantasayin bathed by the waters of Kbal Spean in the Kulen Mountains. Seeing the water touch the body of the snake, it is easy to imagine the serpent Ananta as a zoomorphic boat. Source: V. Walker.

The round sculpture of *Vishnu Anantaśāyin* that was consecrated in the island temple of the West Mebon in the early twelfth century by Suryavarman II⁷² could be construed as a precursor of this symbolic correlation. This colossal figure, which measures 6 m in length,⁷³ was placed at the centre of the West Baray, the largest manmade body of water of Angkor.⁷⁴ It has been suggested that by placing the round figure of Vishnu *Anantaśāyin* in the West Mebon Suryavaman II aimed to sanctify the waters, which were both a functional water mechanism and an intensely ritualised space.⁷⁵ Although it is difficult to tell when the boats of Angkor were transformed into zoomorphic creatures, by the thirteenth century, the multiheaded *nāga* decoration was already used on the flagship in the festival scene of the Bayon, which suggests that this symbolic correspondence was being used at the time. The use of a multiheaded decoration to evoke the serpent *Ananta* and associate the user (i.e. the king) with Vishnu and transform the water where they navigate into the cosmic ocean (thus sanctifying them) is a clear example of how this correlation may have worked. The variety of stempost decorations suggests that these were linked to specific activities or specific ranks. In a highly hierarchical society like that of Angkor, where insignia were ascribed to people according to their rank,⁷⁶ it would be surprising if the decorated barges were not regulated. Examples of this type of regulation are found in the royal barges of Thailand. During the Ayutthaya period the decoration of the barges were linked to the rank of the user: Those belonging to

the modification of these vessels into zoomorphic beings and their use as part of the elite's reconstruction of the divine macrocosm. As Stuart-Fox pointed out, the power of the Angkorian kings was dependent on their ability to reflect the heavenly realm of the gods on earth.⁸¹ The designs of the decorations may have stemmed from Hindu or Buddhist traditions, but the ability to infuse them with the necessary meaning was embedded in Angkorian culture.

The Angkorian mastery of wood carving and the ability to add weight to the boats without affecting their stability was down to a long-standing ship-building tradition, while the savvy use of movement and colour in the rowers' livery and paddles would have brought the zoomorphic shapes to life. This performative act hoisted the elite into the realms of the gods, a display that likely motivated and inspired those who partook in or witnessed the event. But while stage and performance were crucial, perhaps what really allowed the king to use boats as symbolic representations of magical creatures was the social behaviour surrounding boats. The attribution of agency to boats and the accompanying rituals would have been a fertile ground for the creation and use of a fleet of zoomorphic boats imbued with magic character. The careful choice of decoration shows creatures that acted as liminal agents between the human world and the world of the gods. Water was therefore seen as a threshold of the divine world within the context of boat use, which is consistent with Khmer cosmological traditions where the ocean features prominently.⁸²

Starting from the conceptualization of the Angkorian utilitarian boat as an entity with other-than-human agency endowed with apotropaic qualities, this chapter has discussed how pre-existing nautical traditions intertwined with a selection of Indian motifs to create zoomorphic barges for an elite whose power depended on displaying their connection to the divine world. While the Khmer made a conscious choice to select aspects of Indian culture that best expressed their understanding of the maritime realm, travellers who shared the same Indian influences would have felt a sense of familiarity with – and understanding of – the choice of iconography used in the royal barges. This overlapping of local and foreign traditions to construct new nautical realities are but an example of how intensive interactions through trading routes resulted in the development of new practices at the same time that it supported the spread of an iconographic corpus that helped to anchor the coasts along the Indian Ocean.

Notes

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- 28 C. S. Hoc, Le touk Khmer, *Techniques & Culture*, 2001, 35–36, p. 515.
- 29 Hoc, Le touk Khmer, p. 515.
- 30 C. Ang, *Les êtres surnaturels dans la religion populaire Khmère*. Paris: Centre de Documentation et de Recherche Khmères, 1986; A. Forest, *Le culte des génies protecteurs au Cambodge: analyse et traduction d'un corpus de textes sur les Neak Ta*. Paris: L'Harmattan, 1992; L. Arensen, 'Making the srok: Resettling a mined landscape in northwest Cambodia'. Doctoral thesis, University of Edinburgh, 2012.
- 31 For a study on the re-colonization of an abandoned village after the Khmer Rouge conflict in the late twentieth century; see Arensen, 'Making the srok'.
- 32 Forest, *Le culte des génies protecteurs au Cambodge*, pp. 45–46.
- 33 Hoc, Le touk Khmer, p. 514.
- 34 M. Helms, 'The master(y) of hard materials: Thoughts on technology, materiality, and ideology', in P. Clark, (ed.) *Bronze Age Connections: Cultural Contact in Prehistoric Europe*. Oxford: Oakville: Oxbow, 2009, pp. 149–158, p. 151.

- 35 Helms, 'The master(y) of hard materials', p. 151.
- 36 It is worth noting that the changes in boat-building traditions in Cambodia toward the end of the twentieth century are related to deforestation, which has increased the costs of the logs, and to a loss of ritual knowledge (see Hoc, 2001: 515). The latter can likely be blamed partly on the Cambodian genocide of the Khmer Rouge that took place between 1975 and 1979. The displacement and murder of large portions of the population would have necessarily affected the passing of knowledge from one generation to another. Fear of retaliation of the spirits for not knowing the proper ritual likely prevents people from taking up the trade. Likely as a response to this problem, the Cambodians now use the *touk loeuk kdar*, a boat that has the same hull design and retains the bow and stern as chiseled elements but is made of planks (see appendix for description).
- 37 Hoc, 'Le touk Khmer', p. 514.
- 38 Hoc, 'Le touk Khmer', p. 514.
- 39 Hoc, 'Le touk Khmer', p. 514.
- 40 Hoc, 'Le touk Khmer', pp. 514–515.
- 41 Hoc, 'Le touk Khmer', p. 515.
- 42 Hoc, 'Le touk Khmer', p. 513–514.
- 43 B. Malinowski, *Magic, Science and Religion and Other Essays by Bronislaw Malinowski*. Edited by R. Redfield. Glencoe, IL: The Free Press, 1948, pp. 13–14.
- 44 Harris, *A Record of Cambodia*, p. 78.
- 45 See I. Nicolaisen, and T. Damgård-Sørensen, *Building a Longboat: An Essay on the Culture and History of a Bornean People*. Roskilde: Viking Ship Museum, 1991 and E. Petersen, *Jukung-Boats from the Barito Basin, Borneo*. Roskilde: Viking Ship Museum, 2000.
- 46 Guaranteeing safe journeys would have been an important aspect for the fishing communities from the Sambhupura transport zone who were documented in the early twentieth century to have travelled yearly to the Tonle Sap basin following the river's fish migration patterns (see A. Gruvel, *L'Indo-chinoises richesses marines et fluviales: exploitation actuelle, avenir*. Paris: Société d'Éditions Géographiques, Maritimes et Coloniales, 1925). Those travelling from Stung Treng would have had to cover more than 200 km to reach Kompong Cham (Wat Nokor), and over 300 km to reach the entrance of the Tonle Sap River. If similar human movement patterns can be assumed for Angkor based on fish migration and fishing traditions, these communities would have had to face long and perilous journeys every year. These fishermen would have had to develop a cognitive map of the landscape to navigate safely from one transport zone to another; the attribution of agency to the boats would reflect the perception of danger that surrounded this journey.
- 47 Walker Vadillo, 'The fluvial cultural landscape of Angkor', Ch. 5.
- 48 See terminology in Hoc, 'Le touk khmer'.
- 49 V. Roveda, *Images of the Gods: Khmer Mythology in Cambodia, Thailand and Laos*. Bangkok: River Books, 2005 and V. Roveda, *Sacred Angkor: The Carved Reliefs of Angkor Wat*. Bangkok: River Books, 2003.
- 50 Although the largest number of decorated vessels appears in the two naval battles of Bayon and Banteay Chmar, these are tightly linked to warfare requirements and have been discussed in M. Jacq-hergoualc'h, *L'armement et l'organisation de l'armée khmère* and in Walker Vadillo, 'The fluvial cultural landscape of Angkor'.
- 51 A *makara* is understood here as a hybrid mix of crocodile, fish, tapir, bird and elephant, which is very common in Khmer architecture as described in V. Roveda, *Khmer Mythology: Secrets of Angkor*, third edition. London: Thames and Hudson, 2000, p. 75.
- 52 A *garuda* is understood here as a mythological bird that represents birth, ambrosia and heaven as described in Roveda, *Khmer Mythology*, p. 76.

- 53 See for example Mahabharata Book VIII: Karna Parva, section 77; Book VIII: Karna Parva, Section 59.
- 54 Roveda, *Khmer Mythology*, p. 76.
- 55 J. Boisselier *Manuel d'archéologie d'Extrême-Orient, Asie du Sud-Est. tome I: Le Cambodge*, Paris: A. and J. Picard 1966, p. 320.
- 56 A variant of the makara, this creature has the body of a lion and the head of an elephant according to Roveda, *Images of the Gods*, 2005, p. 209.
- 57 A *nāga* is a serpent from the Hindu mythology, the *reachisey*, on the other hand, is a mythical creature of the Khmer pantheon associated with water that has a head of a lion, a small trunk-like nose, and is covered in scales. Although it seems to have common features with the *gajasimha*, it is thought to be a mutation of the *makara* according to Roveda, *Images of the Gods*, p. 209.
- 58 For a detailed description see Roveda, *Sacred Angkor*, pp. 122–126.
- 59 Roveda, *Sacred Angkor*, p. 123 uses the term dragon, but for consistency, if the dragon has a goatee here it is identified as a *reachisey*.
- 60 Roveda, *Sacred Angkor*, pp. 122–126.
- 61 For an example of Khmer chess pieces see G. Gifford, *Thai Chess and Cambodian Chess: makruk and ouk chatrang*. Marston Gate: Lulu Publishing, 2011.
- 62 Roveda, *Sacred Angkor*, pp. 122–126.
- 63 B. P. Groslier, *Le Bayon: Inscriptions du Bayon*. Paris: Ecole française d'Extrême-Orient, 1973, p. 172 suggests that the bearded man was of Chinese origin, and compared this scene with the one in Bayon with the plank vessel; however, this discussion is out of the scope of this chapters, as the focus is placed here in the nautical event.
- 64 see Groslier, *Le Bayon: Inscriptions du Bayon*, p. 172; Roveda, *Sacred Angkor*, pp. 122–126.
- 65 Roveda, *Sacred Angkor*, p. 125.
- 66 Roveda, *Sacred Angkor*, p. 125.
- 67 M. Stuart-Fox, and P. Reeve, 'Symbolism in city planning in Cambodia from Angkor to Phnom Penh', *Journal of the Siam Society*, 2011, 99: pp. 105–138, p. 105.
- 68 Stuart-Fox and Reeve, 'Symbolism in city planning in Cambodia from Angkor to Phnom Penh'.
- 69 R. Buapradit, *Guide to the National Museum of the Royal Barges of Thailand*. Bangkok.: Department of Fine Arts, 2006, p. 28.
- 70 Following M. Bénisti, 'Représentations khmères de Viu couché', *Arts Asiatiques*, 1965, 11(1): 91–117, there are references to the Anantaśāyin story in Khmer inscriptions as early as the fifth century CE; however, the iconography does not appear until the seventh century. During the first phase of representation (seventh century), Ananta appears coiled under the body of Vishnu, with its hood inward over the head of the god. A second phase of representation has been dated to between the second half of the tenth and the first half of the eleventh century, when the body of Ananta appears both plied and elongated under the body of Vishnu. A third phase toward the end of the eleventh century shows the serpent's body without any folds, with a crest added to the hood. A fourth phase dated to the first half of the twelfth century corresponds to the art of Angkor Wat, a temple dedicated to Vishnu where images of Ananta with Vishnu show the body of the snake completely elongated and its hood forward like a fan, although in one instance (central sanctuary) it seems its body is coiled. On the twelfth century, however, the figure of the serpent is replaced by what Bénisti calls a dragon (1965: 98) and Roveda a *reachisey* (2005: 55). As seen earlier, the *makara* and the *reachisey* seem to be different expressions of the same creature, or at least creatures with the same influence over the aquatic world. Bénisti notes that the transformation of the *nāga* into a dragon (*makara*, *reachisey*) would have been a natural process, as both are gods of the waters. In some instances, Vishnu is

reclining over an elongated Ananta resting on the body of a *reachisey* (Bénisti, 1965: 99; Roveda, 2005: 58). The combination of these two creatures in the same image led Bénisti to suggest that there never was a transformation of the *nāga* into the *reachisey*, but rather a substitution that was likely connected to autochthonous traditions (Bénisti, 1965: 99). After Angkor Wat, the Vishnu–*reachisey* combination becomes the norm while the serpent disappears from the iconographic theme completely (Bénisti, 1965: 101).

- 71 Bénisti, ‘Représentations khmères de Viu couché’, pp. 105–106.
- 72 M. Feneley, D. Penny, and R. Fletcher, ‘Claiming the hydraulic network of Angkor with Viṣṇu: A multidisciplinary approach including the analysis of archaeological remains, digital modelling and radiocarbon dating: With evidence for a 12th century renovation of the West Mebon’, *Journal of Archaeological Science: Reports*, 2016, 9: 275–292, p. 290.
- 73 Feneley, Penny and Fletcher, ‘Claiming the hydraulic network of Angkor with Viṣṇu’, p. 286.
- 74 Incidentally, these waters were sanctified with representations of Visnu Anataśāyin carved on the riverbed of the spring that feeds the reservoir as discussed in Feneley, Penny and Fletcher, ‘Claiming the hydraulic network of Angkor with Viṣṇu’, p. 290.
- 75 Feneley, Penny and Fletcher, ‘Claiming the hydraulic network of Angkor with Viṣṇu’, pp. 290–291. Feneley, Penny and Fletcher have proposed a coiled Ananta as the likely platform of the reclining Vishnu, of which there are no remains. However, it is also possible that Ananta was depicted with its elongated body, making it look like one of the decorated boats of Angkor.
- 76 See Zhou Dagan’s chapters 2, 3 and 4 where he discusses the different residences, clothing and insignia (palanquins and parasols) ascribed to different ranks in Harris, *A Record of Cambodia*, pp. 49–52.
- 77 N. Gervaise, *The Natural and Political History of the Kingdom of Siam*. 1989 edition. Bangkok: White Lotus Press, 1688, p. 213.
- 78 Gervaise, *The Natural and Political History of the Kingdom of Siam*, p. 96.
- 79 see M. Ribadeneyra, *Historia de las islas del archipiélago filipino y reinos de la gran China, Tartaria, Cichinchina, Malaca, Siam, Cambodge y Japón*. 1947 edition. Madrid: Editorial Católica S.A., 1601; Gervaise, *The Natural and Political History of the Kingdom of Siam*; Tachard, G. *A Relation of the Voyage to Siam Performed by Six Jesuits*, trans. 1981 edition, A. Churchill, Bangkok: White Orchid Press, 1688.
- 80 Kopytoff, ‘The cultural biography of things’, p. 67.
- 81 M. Stuart-Fox, *A Short History of China and Southeast Asia: Tribute, Trade and Influence*, Crows Nest: Allen & Unwin Ltd, 2003, p. 51.
- 82 See Ang, ‘In the beginning was the Bayon’, in Clark, J., Ang, C., Woodward, H., and Vickery, M. (eds.) *Bayon: New Perspectives*. Bangkok: River Books, 2007; Dolias, J. *Le crocodile ou la nagî: l’océan dans l’imaginaire cambodgien*. Paris: Les Indes Savantes, 2012.