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The Floating Dwellings of Chong Kneas, Cambodia

This study focuses on the community of Chong Kneas, Cambodia—primarily its floating houses—in order to understand the ideas of place making, identity development, sense of belonging, and the crucial role that built environments and object placement play in defining these concepts. The study first discusses social rules and relationships and appropriation practices as the processes that link people to their domestic environments. Next, the paper discusses symbolic oppositions related to gender, age, and kinship; how they are expressed in Cambodian cosmology and in the physical domestic space; and how these oppositions enculturate occupants who live and move through their home environments. The discussion simultaneously deals with dwellings in terms of their structural and cosmological aspects. In a broader framework, this vernacular study investigates the dialectic relationship between the rhythm of the lake and the culture of its inhabitants.

Tonle Sap Lake is the largest freshwater lake in Southeast Asia and lies in the central plains of Cambodia. The main tributary of the lake, the Tonle Sap River, exhibits an extraordinary hydrological phenomenon. As the rainy season commences, the excess water from the Mekong River is diverted into both the South China Sea and the river. In the latter case, this excess water actually reverses the direction of flow of Tonle Sap River and leads, as a consequence, to the inundation of 1.25 million hectares of forest and agricultural land for several months each year. During this period, the surface area of the lake more than quadruples from 2,500 square kilometers to 11,000 square kilometers, and its depth increases from one meter to ten meters.[1]

Periodic flooding has rendered the entire area one of the most fish-abundant regions in the world and, as a consequence of its rich biodiversity, UNESCO declared the area a biosphere reserve in 1997. The people of Cambodia have relied upon the abundance of fish and the agricultural richness of Tonle Sap Lake and the surrounding area for their livelihood for centuries. Tonle Sap Lake plays a key role in shaping the cultural identity, the economic health, and stability of the Cambodian people. The rhythm of the lake defines the rhythm of the culture. The vast majority of the population in the Tonle Sap area lives in poverty; livelihoods depend solely on the resources that the lake has to offer.[2]

The population density around the Tonle Sap area has varied greatly over the centuries. At the turn of the nineteenth century, the Tonle Sap region was only sparsely populated. However, toward the middle of the nineteenth century, the Khmer people began to move onto the lake for purposes of subsistence fishing. They moved into the area when the fishing season was most favorable and, once they had harvested enough fish for their yearly consumption, returned to their villages. Subsistence fishing was easily learned and required only a very small initial financial investment. Inexpensive gillnets and dip nets were used to catch fish and, once the amount for daily consumption was set aside, the rest of the catch was sold to buy rice. Khmer presence at the lake became more prominent after the Khmer Rouge regime disbanded. The trend toward increased

Figure 1. Vietnamese houseboat, 2007. Photograph by author.

Figure 2. Typical Chong Kneas house assembly, 2007. Photograph by author.

settlement in floating villages continues today; reasons include lack of land tenure, family disputes, economic issues, and lack of education and skills. An estimated 80,000 people live in floating villages around Tonle Sap, and the Khmer population makes up the majority.[3]

While Cambodian villages are predominantly located on the land surrounding Tonle Sap Lake, a substantial number of Cambodians also reside in floating villages. Chong Kneas, a collection of some of these floating villages, exhibits its own unique rhythm in response to the changing seasons. The villages have their own enclosed communities that encompass diverse cultural groups, including the majority ethnic Khmer, as well as the Vietnamese, Cham Muslim, and Chinese minorities. Chong Kneas serves as the main harbour for Siem Reap, the capital city of Siem Reap province. Even though its landing facilities are rudimentary, Chong Kneas acts as a transfer point for transporting fish that are caught on the lake. Dry shipments across the lake also come through Chong Kneas. In addition, it is one of the main transportation hubs for local traffic and for passengers travelling from Phnom Pen. There is significant tourist boat traffic resulting from visits to Prek Toal Wild Life Sanctuary and the water-inundated forest at Kompong Phlunk.

The floating houses of the village are of various sizes and types, and shift location with the changing water level (Figures 1, 2, and 3). Some of the houses are built on platforms, while others are designed like rafts and simply float when the water level rises. Still others are designed as small boats, which reside permanently on the water. The buildings, simple timber post-and-beam structures, are built predominantly from lightweight bamboo, mangrove, and wood. The flooring is made of timber plank or plywood sheet. The roof structure is mostly bamboo leaf thatching, although corrugated sheet metal applications are often used as a substitute. Exterior and interior non-load-bearing partitions are filled in with bamboo or light timber material that allows the integration of full-length louvered windows to provide much-needed ventilation. The homeowners renew their houses approximately every three years, and each occupant generally adheres to the same materials and forms in order to maintain their cultural and economic position within the community. On average, floating houses are twelve meters long and six meters wide, surrounded by a half-a-meter-wide patio and docking area.

The village proper contains not only floating dwellings but also educational and recreational facilities. Most of the commercial and educational facilities display greater permanence by utilizing timber plank exterior cladding and corrugated metal and timber roofing materials. Some of the commercial and retail activities are conducted in mobile stores, which float from house to house. Floating churches serve members of the Catholic community. The sound of the muezzin calling the faithful to prayer can be heard from the floating mosque.

A typical domestic setting consists of an indi-

vidual floating house flanked by the supporting family boats, which are used for fishing and additional storage. Some houses also support family-scale fish farms, and these fenced enclosures are located close to the main house. Together, they create small-scale family compounds that contain the main house, several fishing boats and canoes, and the fish farm or a floating animal pen (Figures 2 and 3).

During the wet season, the residents of Chong Kneas cluster around the base of a mountain called Phnom Krom, which is a rocky outcrop rising 140 meters above the seasonal flood lines. During the dry season, the movable boathouses are clustered at a boundary zone (or ecotone) between the lake and the plains. Changes in location occur in approximately twelve distinct stages. The mobility of the village collective enables the occupants to move freely between the lake and higher ground. The village composition is therefore less structured than those of the rice farmers' villages of the upper plains.

Chong Kneas also contains migrant fishermen who come from the lower Mekong River basin, primarily from Vietnam. Fishing on the lake is limited to the period between December and May. Migrating fish spawn from June to September, and high winds and storms make October to December a dangerous time to venture out onto the flooding lake.[4] Approximately 1,100 families live in Chong Kneas in their floating structures. The predominantly Khmer population of the village is around 5,800.

At first, one is struck by the complex mixture of types of floating structures. On the lake there are banks, barbershops, general stores, tailors, churches, mosques, schools, and pig and fish farms. Upon close inspection, the houses look homogenous in size and form. There seems to be no governing logic to the alignment of the houses at each of the temporary stopping places in the perpetually moving village. The locations of these stopping places between house movements are somewhat arbitrary and depend solely on natural conditions and the changing floodwater levels (Figure 4).

However, further investigation of the sociocultural structures and the cosmological beliefs of the community reveals that there is indeed a logic to the configuration of the village at each stopping place. I will first discuss the sociological aspects and then the cosmological elements that determine the village alignment and assembly. The village layout discussed here is based on its location during the 2007 dry season.

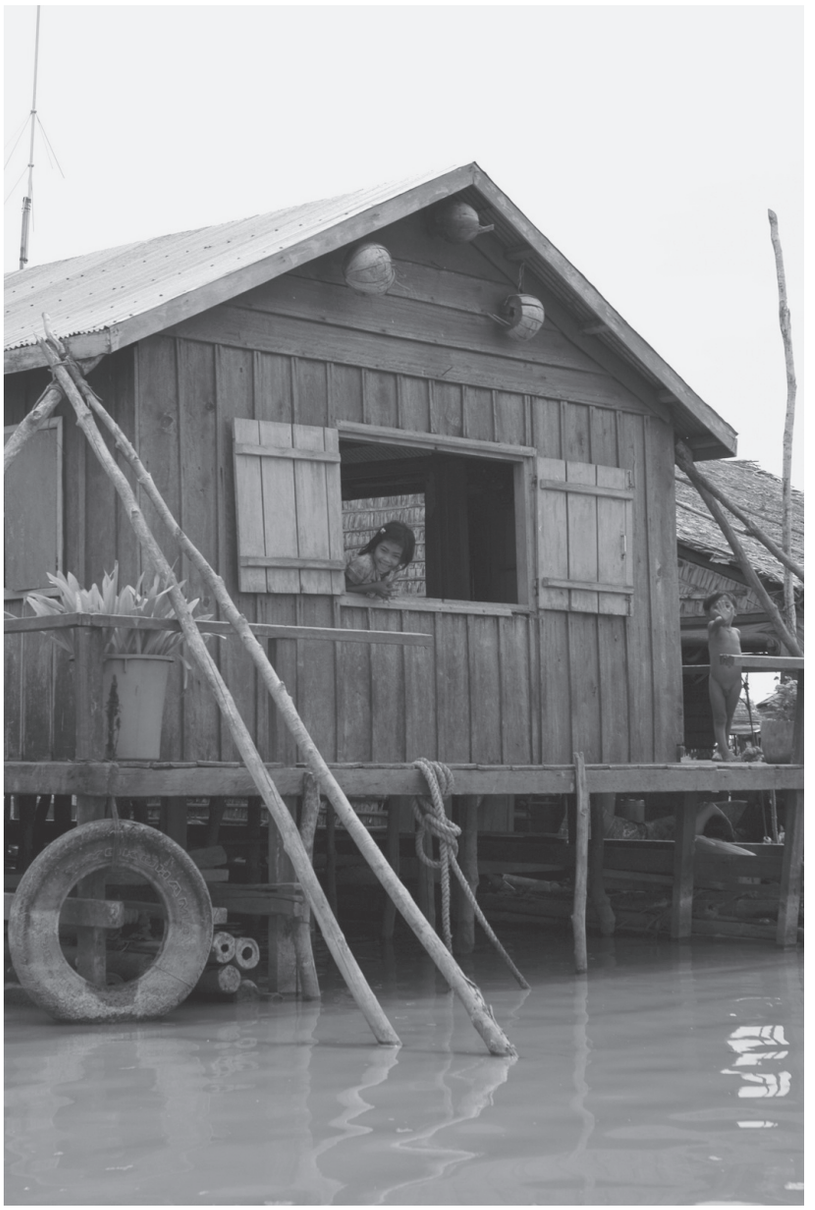

Figure 3. Typical Khmer floating house in Chong Kneas, 2007. Photograph by author.

Ordering the Landscape

Social rules encompass a wide range of dynamic relationships, affective and emotional bonds, cultural norms and practices, and communications.

Figure 4. Chong Kneas, May (dry season) 2007. Most of the village is situated on the lake during May. In order to respond to the upcoming wet season and rising floodwaters, some residents have already positioned floating houses along the channel. Drawing by Nicolette Lane and author.

Figure 5. Chong Kneas and Tonle Sap Lake during the dry season, 2007. The figure shows a view from the intersection of the channel and the dirt road leading to Moat Peam. The Vietnamese section is separated from the main part of the floating village, as seen in the oval on the top right of the image. Photograph by author.

In Chong Kneas, the socioeconomic status of the occupants is one determining factor in the spatial alignment of the floating dwellings. Economically viable families and commercial and regulatory agencies occupy the first row along the "main street" in a relatively orderly manner, without any ethnic differentiation. The main street allows fisherman and the village occupants to access Moat Peam, where the fish are brought to shore and processed. Access to the land from Moat Peam via a dirt road is also available during the dry season. Less economically solvent families occupy the second and third rows, and these streets show more emphasis on ethnic and extended family clustering. In general, kinship structure determines the grouping of the dwellings. It is an uxorilocal society, meaning that various members of a clan cluster together near the home of the wife's parents. The back rows have no distinguishing features with respect to alignment.

Within the village proper, ethnic groups cluster. In particular, the Vietnamese group is distinct and located far away from the other ethnic groups due to ongoing political and economic tension between Cambodia and Vietnam. Religious clustering is also evident in the village. Cham Muslims cluster around the mosque and occupy the second row of the main street (Figure 5).

The fixed elements in the village include educational structures and some of the commercial structures. The school location is fixed along the channel leading the way to Phnom Krom,

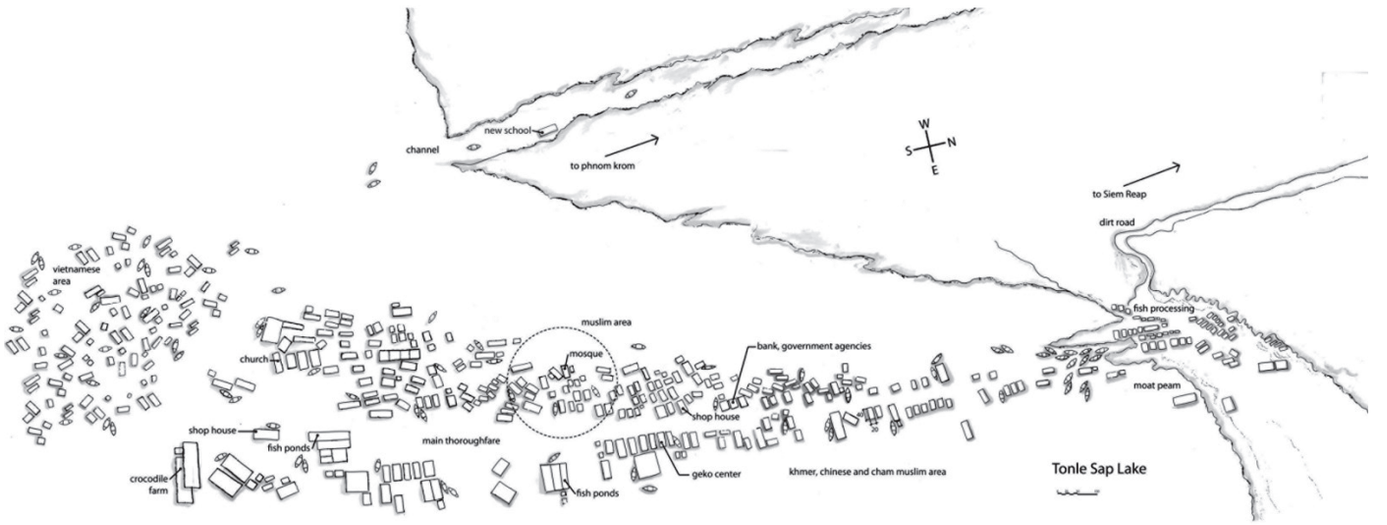

Figure 6. Chong Kneas Settlement plan. The sketch is extracted from aerial photographs taken on May 27, 2007. The narrow sides of the rectangular houses are aligned to face east since Cambodian traditional folk belief perceives the East auspiciously and the West inauspiciously. The Vietnamese ethnic group is located in the southern part of the village (left in the figure) and is distinctly separated from the rest of the community. Their houseboats and houses do not adhere closely to the cosmological orientation rules. Drawing by author and Kristie Spencer.

independent of the movements of the village. Another fixed element is the Crocodile Farm, a main tourist destination (Figure 6).

Tourist boats access the village at the center point through the channel and create noise and water pollution on their way to the Crocodile Farm and other destinations on the lake.

The cosmological belief system defines the parameters of village orientation. Theravada Buddhism is the official religion of the Cambodian people. However, Buddhist beliefs are generally superimposed onto the traditional animistic beliefs. Furthermore, Buddhist and animistic beliefs coexist with Hinduism.[5] Animism is the oldest belief system in Cambodia and offers a pantheon of supernatural beings. Buddhism encourages the integration of society on all scales, from family to village to nation, in order to create harmony, respect, and affection among believers. Buddhism is tolerant of other religions and, while it explains the existential questions of life and the afterlife, it is animism that provides a coping mechanism to deal with the day-to-day activities of the present. The Cambodian people greatly respect the invisible powers called *Neak ta* (ancestral spirits). They are the guardian spirits that protect the welfare of the thing or the area they inhabit. Cambodians believe that these spirits inhabit large trees. This has significant implications for the selection of timber for house construction. The construction of space on any scale depends on the beliefs and practices for appeasing the ancestral spirits. In common with other Southeast Asian and Austronesian societies, Cambodians believe all inanimate objects and animate beings possess a soul and interact with each other to create cosmological harmony.[6]

The Cambodian term *phum* refers to "a village," or "a group of houses," or even to a single house, but with an underlying connotation of sacredness.[7] In order to establish harmony between people, nature, and the spirits from the village, Cambodians follow certain rituals in house construction. Specific animistic beliefs, such as orientation according to cardinal points and the hierarchical notions of high to low and up to down, directly influence house construction and village layout.[8]

The residents of Chong Kneas generally orient their houses according to the cardinal points. They align the narrow sides of the rectangular houses that contain the entrance to face east since Cambodian traditional folk belief, following Buddha's instruction, perceives the East as auspicious and the West as inauspicious. The ridge pole of each house, which is a horizontal beam at the ridge of the roof, is aligned with the flow of the sun. This arrangement of the village is maintained during each temporary stopping place and does not vary from year to year or from season to season. The intersections of roads, rivers, and cardinal axis points are considered to be unlucky and are usually left unoccupied.[9]

There is a distinct gap, or unoccupied space,

in the village layout between the main village proper and the Vietnamese section. There are several possible reasons for this separation. The village elders determine the location of the center point of the village, which is called *phchet phum* (village naval). Villagers consider this location to be inauspicious and leave it unoccupied. This belief, along with the persistent political tensions, leads to a distinct spatial separation of the Vietnamese ethnic group from the rest of the community. Practical reasons, related to the provision of easy access for fishing and tourist boats to the processing harbour located at the end of the channel close to Phnom Krom, contribute as well. The Muslim minority in the village collectively orients its mosque and houses so as to face the direction of Mecca. In contrast with the rest of the village occupants, the Vietnamese section of the village observes the rules of orientation only loosely (Figure 6).

In summary, the prevailing factors that determine village morphology are socioeconomics, sociopolitics, ethnicity, the direct effect of the family kinship structure, and finally cosmology. Furthermore, village morphology drastically changes from dry to wet seasons, although somewhat similar layouts are executed from year to year for each season.

In the upper dry lands, villagers choose the location of a new settlement with consideration and care. The initial step is to delineate the wild from the domesticated and to protect village dwellers from the invisible forces that inhabit the wild. This is the sine qua non for both secular and religious entities of the village. While the forest is unknown and wild, the village is where people and spirits live in harmony; it is constructed with different levels of domestication and order. Regardless of the absence of physical boundaries around the village, every villager would recognize the line separating wild and domesticated.[10] In Chong Kneas, the lake replaces the forest and there is once again a clear understanding of the delineation between the wild and the domesticated. The landscape is one of the primary elements that determines settlement morphology and, in broader terms, the way of life in Chong Kneas. During the dry season, the hot tropical climate of Chong Kneas is conducive to expansive, calm vistas on Tonle Sap Lake. By contrast, the incessant monsoons, wind, and tropical storms that characterize the wet season render the great lake formidable, wild, and claustrophobic. In the following segment I examine the broader context (the landscape) and its dialectical relationship to the inhabitants.

James Fernandez, in his work on the Fang and Zulu people, asserts that the relationship between people and their environment is reciprocal and mutually assertive. Environment influences people who acquire or take in qualities of that environment. This process is critical to the creation of meaningful cultural metaphors. It initiates identification with place and shapes identity. Once individuals have absorbed the qualities of a larger context (landscape), they will in turn project them onto built environments, settlement plans, and objects.[11] Fernandez further discusses the architectonics of landscape and its reflection on the Fang and Zulu people of Africa. He finds correlations between village morphologies and the physical experiential aspects of landscapes among African tribes. He emphasizes the contrasting nature of man-made and natural environments in which tribes live—the wide-open savannahs of South Africa in the case of the Zulu, and the dense rainforest of Gabon in the case of the Fang. According to Fernandez, Fang culture shows centrifugal tendencies in its rectilinear open settlement plans and architectural forms, while Zulu culture exhibits centripetal qualities in its circular built environments and settlement plans.[12] Chong Kneas, with its multiethnic, multireligious fabric, moves location without any physical territorial division and assumes different forms during different seasons. By using Fernandez's framework, it is possible to employ the architectonics of landscape to gain insight into the settlement arrangements of Chong Kneas. The general morphology of the village is isomorphic with its context and respectively centripetal and centrifugal in the dry and wet seasons. Environmental pressures on Chong Kneas are heightened during the wet season, a hostile, enclosed environment. Consequently, the village is dispersed around Phnom Krom Mountain. On

the other hand, the tranquil vastness of Tonle Sap Lake during the dry season is manifested in the centripetal village form.

Fernandez also asserts that people project the qualities of the natural environment onto buildings as part of the larger "architectonics" of landscape.[13] The Zulu create round buildings, while the Fang create huts that are rectilinear in shape. However, contrary to these findings, the rectangular shape of the individual houses in Chong Kneas remains constant in spite of dramatic seasonal changes in the architectonics of the landscape.

The House

In order to understand the cultural makeup and built environment of Chong Kneas villages, anthropological methodologies were combined with architectural research techniques. Ethnographic observations were documented through photography, video, and field sketches. Specifically, the study gathered qualitative and quantitative data in the areas of environment, materials, resources, production services, decoration and symbolism, and typologies and uses.

I completed the first stage of the fieldwork during the end of the dry season in April 2007. During this period I visited twelve houses (three from each of the four dominant cultural groups), drew and documented the physical environments, and interviewed each head of the household. I limited the sample to twelve houses since the pattern of data was established by the end of the second set of four houses. Interviews with the community leaders also provided a political and structural perspective. The interviews revealed that the community of Chong Kneas was comprised of 1,101 families with a total population of 5,800 people. The cultural matrix was composed of 776 Khmer, 278 Vietnamese, 37 Cham, and 10 Chinese families.

The data-gathering process consisted of three distinct segments. First, I used a questionnaire to collect household information from each ethnic group about education, economic structure, ownership, family makeup, and social engagement. Second, I used photographs and video to record architectural elements, space planning, decorations, uses, and functions along with materials and production. Finally, I measured and drew plans and elevations of representative floating structures; these documents provided in-depth information about architectural elements, interior planning and functions and, to a degree, space-use patterns. I selected three households at random from each ethnic group. An English-speaking guide from Siem Reap and two local guides from Chong Kneas supplied transportation and translation. The local guides also provided cultural and traditional introductions to the individual homes. In addition to gathering data in Chong Kneas, I investigated the northern shores of Tonle Sap Lake and documented a few similar floating villages, including Prek Toal and Kompong Plunk. Aerial documentation of the overall village layout supplemented the body of the research.

The first step in the analysis consisted of translating field drawings into working drawings in order to understand the subtle differences between the forms and the floor plans (Figure 7). The data showed similar basic needs—such as protection, gaining a livelihood, comfort, and shelter—for all ethnic groups. However, Khmer house plans were characterized by a single interior partition and clearly established the fundamental unit plan for all the structures of the remaining cultural groups (Vietnamese, Cham Muslims, Chinese), with the exception of two or three bay additions (Figure 8).

House forms and roof lines also showed parallel unit aggregations of form. A close inspection revealed that the unit form was predominantly adopted by the economically deprived Khmer households. Pierre Clement, in "The Lao House among Thai Houses," identified a "simple" Lao house in the Vientiane area, which had an interior partitioning system and a front entry location similar to the basic Khmer unit house in Chong Kneas.[14] Sophie Charpentier's extensive work in the Vientiane and Luang Prabang areas of Thailand also showed similarities in house form and interior partitioning system to a Khmer floating house (Figure 9).[15] One exception was stilts, which were replaced by floater systems in the dwellings of Chong Kneas. The

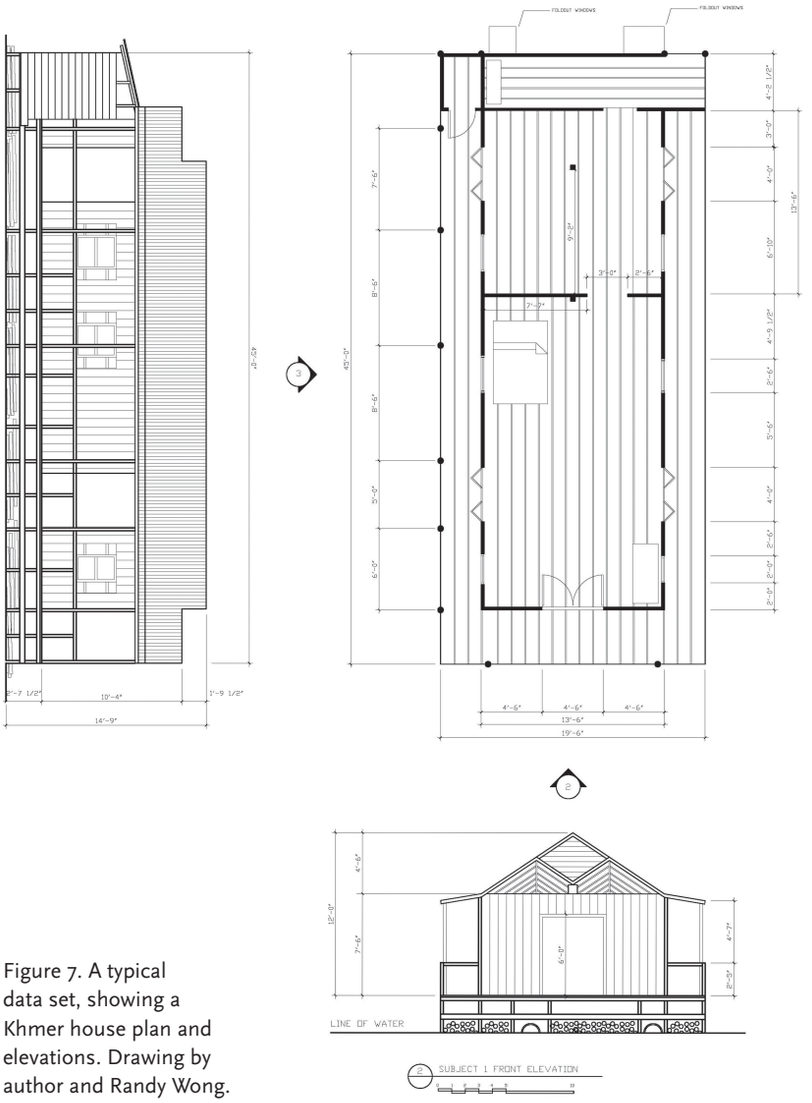

Figure 7. A typical data set, showing a Khmer house plan and elevations. Drawing by author and Randy Wong.

multiethnic fabric of the village is quite conducive to the adaptation of house forms from neighbouring regions; therefore, the basic house form of South East Asia finds continuity in Cambodia.

Home owners in Chong Kneas observe and reflect their social status in the aggregation of units. Occupants with higher economic power and social status— into which the Chinese minority falls—have opted for house plans with two or three unit additions. The Khmer interior configurations also have similarities to Kantaing houses, which migrants from China developed and introduced into Cambodian culture via Vietnam.[16] In Chong Kneas, the typical back porch of the Kantaing house has become a narrow wrap-around porch that accommodates boat and canoe landings (Figure 10).

In his work on Berber houses, Pierre Bourdieu argues that the social structure of the house is a reflection of the social world at large.[17] He discusses homological relations between house and universe, both of which are governed by the same oppositional organization. For both, the processes and the forms of space use provide a potentially powerful means to decipher sociocultural aspects of society. In his study of Berber houses, he grafts certain spatial oppositions to encode opposed social categories such as female/male, senior/junior, kin/stranger. Bourdieu gives these categories a visual expression by mapping them onto spatial contrasts such as front/back, up/down, left/right, inside/outside. Although Bourdieu's main focus is gender relations in the Berber house, I will use a similar approach to understand Chong Kneas and its built environments; by that, I mean that I employ space-use patterns to illuminate the notion of place making (Figure 11).

I have selected the Khmer because they constitute the dominant cultural group; their houses create the base unit for the spatial developments of the community. Understanding the Khmer house from a structural and cosmological perspective will provide a unit or baseline of understanding for the rest of the built environments of Chong Kneas. Furthermore, one can only discuss the Khmer house in terms of a combination of the process of construction and cosmological properties since it is nearly impossible to separate these two defining elements.

An animistic belief system is the predominant determining element of house construction, from timber selection to location, from interior layout to overall building alignment. The energy of the spirits, which inhabit the trees, infuses the house and its occupants with vitality and well-being. Therefore, dealing with timber from the time of cutting to selection requires special attention. Cambodians usually cut during the dry season because it is considered to be an auspicious time. They only select straight trees with smooth surfaces and, during construction, builders erect columns in the same order as that of tree growth,

with the root end at the bottom and the branch end at the top of the column. These rules governing timber orientation and selection are significant for two main elements of house construction: *mé sâsâr* (the central column) and *mé dâmbaul* (the ridge beam).[18] The central column is where the spirit of the male ancestor lives, and it acts as protection against evil spirits. It is the defining element of the male domain, which is the public part of the house. The ridge beam hosts *mneang phteah* (the lady guardian) of the house and is adorned with *yantra* (a piece of red fabric with a diagrammatic drawing that provides protection from evil spirits coming from eight directions).[19] The female domain is where the domestic activities such as washing, cooking, and sleeping are dominant; it corresponds to the private section of the house and is reinforced by the presence of *mneang phteah*.

Houses in Chong Kneas are built with three rows of columns. *Sasar choeng rieng* (side columns) are shorter than the row of central columns, which is known as the ridge column row. In most floating dwellings, the central column row consists of two or three columns that are sometimes freestanding and, at other times, are embedded in the partitioning wall, thereby rendering the whole wall assembly sacred. This is where occupants display photographs of family ancestors. Additional side columns are fastened onto the base of the structure to support the roof of the surrounding porch. Usually, builders select the trunk of a tree for the most sacred components of the structure, the ridge beam and the central column. In general, the rest of the post-and-beam structure of the house is a mixture of available lumber and bamboo. Nevertheless, lumber use throughout the house is not uncommon.

Body metaphors similar to those of Austronesian cultures are incorporated into the design of the structural elements of the house, such as the *sâsâr trung* (column of the chest) or *thvear* (the main entry door), a term that makes direct reference to female anatomy.[20] The house is a female domain, while prayer halls and monasteries are the male realm. Men are expected to leave the house to engage in fishing or other income-generating activities. Women remain in the house

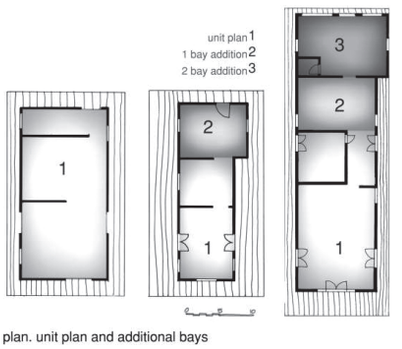

Figure 8. Unit plan and additional bays. Drawing by author and Kristie Spencer.

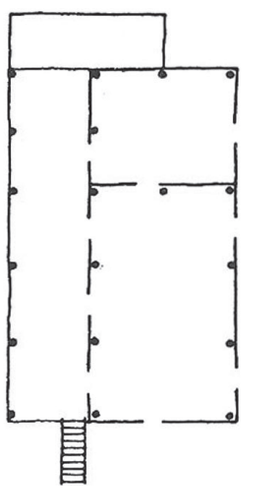

Figure 9. Simple Lao House in Vientiane. Drawing reproduced from "The Lao House among the Thai Houses: A Comparative Survey and Preliminary Classification," in *The House in East and Southeast Asia: Anthropological and Architectural Aspects,* ed. K. G. Izikowitz and Per Sorensen, Scandinavian Institute of Asian Studies Monograph Series 30 (London: Curzon Press, 1982), 72. Courtesy of Curzon Press.

and undertake child-rearing and all other domestic activities. However, due to the unpredictability of subsistence fishing—as well as for other economic reasons—most of the family members, regardless of gender and age, take part in family income generation. Although the sacred

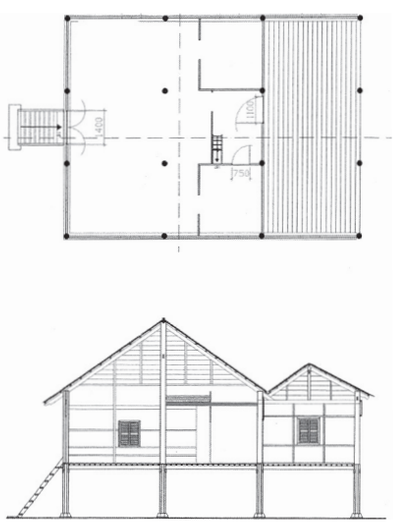

Figure 10. Kantaing House plan and side elevation. Drawing reproduced from Prak Vireak, "Wooden Houses of the Early Twentieth Century: Settlement Patterns, Social Distinction, and Ethnicity," in Tainturier, *Wooden Architecture of Cambodia: A Disappearing Heritage,* ed. Francois Tainturier (New York: Rockefeller Foundation, 2006), 84. Courtesy of the Center for Khmer Studies.

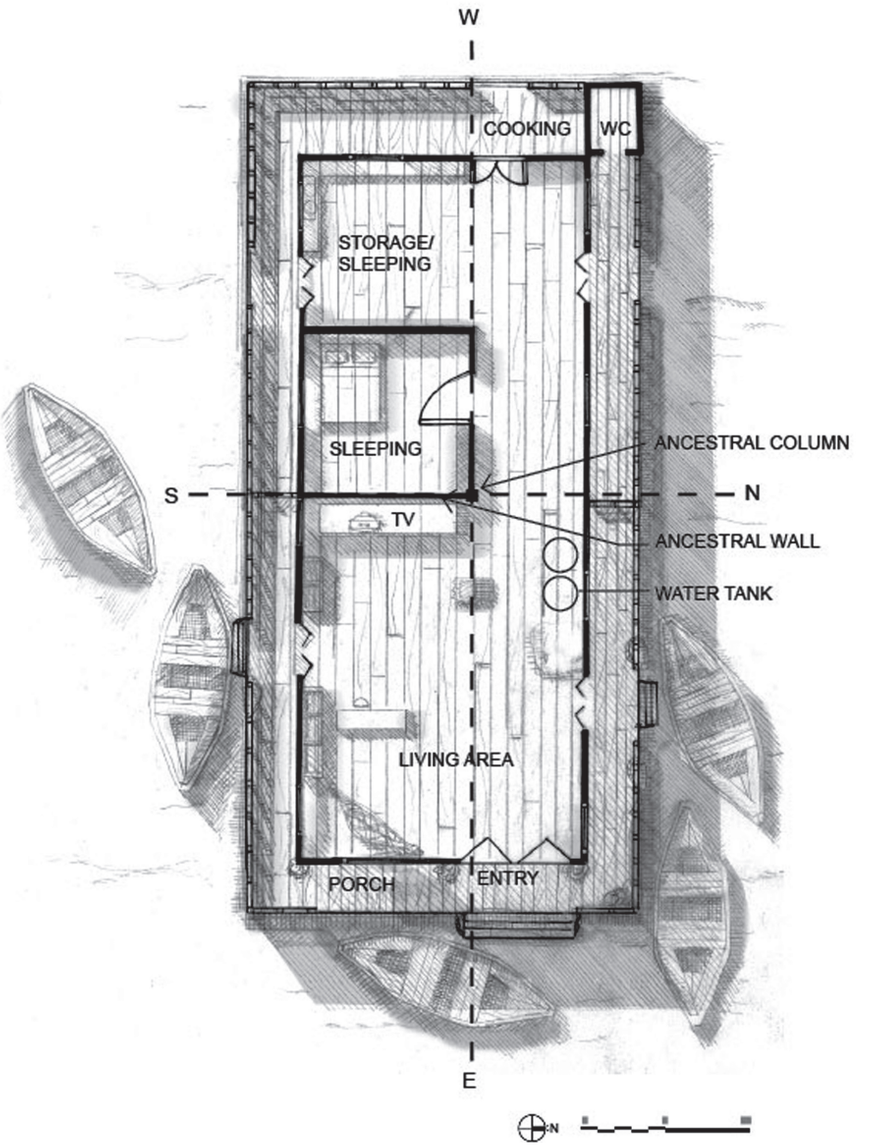

Figure 11. Khmer Interior. Drawing by Maggie Khounthav, author, and Kristie Spencer.

wall demarcates female and male domains, there is diffusion between the two domains, and similarly for the gendered attributes of inside and outside and day and night.

The building process is not arbitrary; builders measure and achieve correct proportions according to the function of the building, the status of the occupant, and the type of construction.[21] Essentially every male member of the family is informed about the basics of building *khtòm* (a hut); however, the construction of a robust floating house requires an expert house builder or carpenter.

In Cambodia the basic social unit is the nuclear family, the building block of social life. All members of the nuclear family live under the same roof, and the dwelling itself is the primary context for family life wherein the family can live in harmony with people, nature, and invisible spirits.[22] Therefore, the ritual of home building—requiring careful consideration of the selection of materials, time of construction, location and morphology—provides an additional opportunity for dwellers to bond with invisible spirits, the community, and members of the household.[23]

In general, two main types of dwellings in Chong Kneas, *phteah* (a house) and khtòm, are distinguished by construction materials (Figures 12, 13, and 14).

A house usually employs wood, bamboo, corrugated metal, prefabricated sheet goods, medium density fiberboard (MDF), or laminated particleboard, while a hut is made mostly of bamboo, sugar palm leaves, and wood. The traditional land-based Cambodian wooden house has a limited life span (materials are usually chosen not to exceed the life span of the owner) and a certain level of mobility (tongue-and-groove construction without nails allows owners to relocate the house if necessary). Dwellers of Chong Kneas lead a much more precarious existence.[24] They renew their homes every three years to combat environmentally induced wear and live in a state of constant mobility. Their material selection is less discriminating and they use nails throughout construction.

Figure 12. Khmer floating house in Chong Kneas, 2007. Photograph by author.

Figure 13. A front view of a Chinese shop house with a newly painted roof in Chong Kneas, 2007. Photograph by author.

Figure 14. Khtòm (a hut) is one of the principal types of dwellings in Chong Kneas, 2007. Photograph by author.

Journey to and through a Floating House

The typical journey to a Khmer house starts from the shores of Tonle Sap Lake in a canoe or a motorboat. Upon reaching the landing area around the house, one must ask for permission to dock. Once the home owner grants it, the visitor must remove all footwear at the porch area prior to entering the interior. The porch area, often surrounded with a two-foot-high wood fence, contains all the plants and vegetables of the household, some of which are decorative. The fence acts as a boundary marker and delineates the private from the public domain and, more importantly, demarcates the point of entry into the house. At first glance, one perceives the floating dwelling of Chong Kneas as a single level, but closer inspection reveals the presence of an additional level below the floor. The house dwellers reserve the main floor for day-to-day activities, while they store domestic animals and additional household items in the space between the floorboards and the floats. Cambodians consider this to be a dark and dirty space, not suitable for human habitation.

The main floor is divided into small *bântup* (rooms). Two axes separate the Khmer floating house, the north-south axis and the east-west axis that intersect at the ancestral column. Based on this main division, I superimposed an abstract matrix on the house plan in order to analyze the spatial organization in terms of space use and movements within the space, thus permitting a deeper understanding of the differentiation by gender, age, and kinship (Figure 15).

After crossing the house threshold, which is located at the narrow side of the rectangle facing

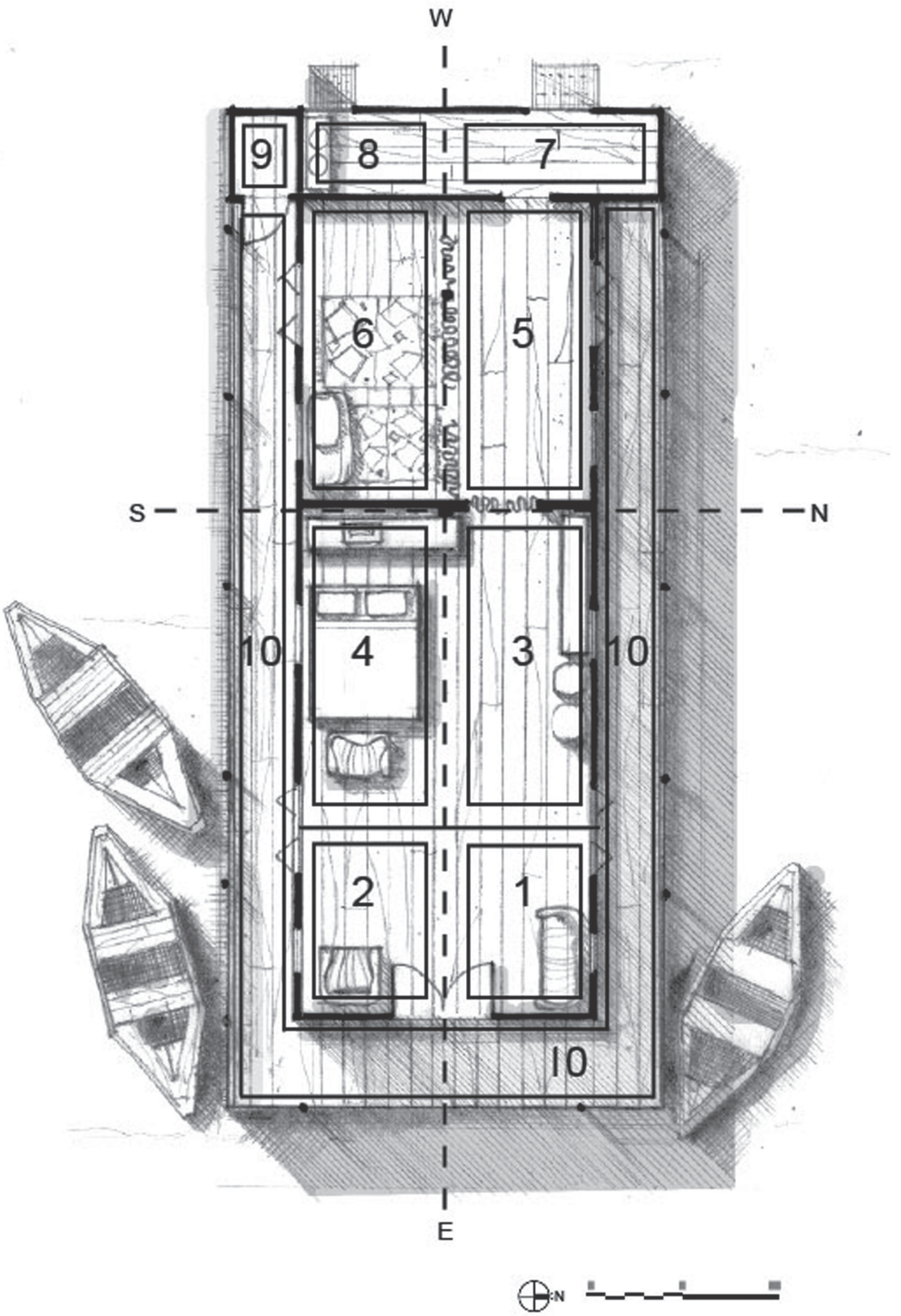

Figure 15. Khmer House analysis matrix. Legend: 1. Entry, public area; 2. Guest reception, family living area; 3. Passage from public to private realm/storage; 4. Dedicated to family religious activities/ sleeping area for the elder family members; 5. Storage; 6. Young daughters' bedroom; 7. Food preparation/ storage/pantry/ laundry; 8. Cooking; 9. Washroom; 10. Porch. Drawing by author and Kristie Spencer.

east, one finds oneself in the public area of the house (1 and 2 on the plan). This is where the family receives guests, serves dinners, and also stores tanks for potable water. It serves a multitude of family activities. This transitional area is where the family formalizes non-kin relationships. It has a direct view of areas 3 and 4. Small chairs or benches are located in this area for use by visitors. Area 4 is reserved as a sleeping area for the elder members of the family. It also contains mé sâsâr. A small altar, which holds the offerings to the spirit of the house to ensure protection, is mounted on this column on or near the ridge beam. The family permanently displays these religious icons in the public domain of the house at ceiling level, thus establishing the spiritual vertical axis of the interior. "Up" is auspicious while "down" is inauspicious. The family hangs various flowers and amulets from mé sâsâr for good luck and protection. They display ancestral photos on the partitioning wall and at or around mé sâsâr. It is the most spiritually charged area of the house.

Areas 3 and 4 contain most of the family objects, from hand crafts to family photographs and a television set. The TV, powered by batteries, is functional and is the most prominently located utilitarian object (Figure 16).

It reflects the social status of the family and is displayed on the sideboard, which also contains all other small-scale decorative and functional objects. It is a symbol of the occupants' identity and of their position in the community and, as such, they choose its location to provide the highest visibility. Furthermore, they align it with the most sacred element, the male ancestral column. The wall, within which the ancestral column is embedded, behaves as the area of intersection of all the religious and secular elements of the Khmer ethos (Figures 17 and 18).

Area 3 is a transitional space from the public to the most private realms of the house. Lace curtains separate the public realm from the private realm. Occasionally, doorframe decorations and flowers articulate this threshold of passage from area 3 to area 5. More family photos appear around this area, which also functions as storage for teacups and teapots. Area 5 is the multipurpose storage area for the family kitchen's tools and utensils, which are displayed on the vertical surfaces of the north wall. Area 5 is also a transitional area to the outdoors, the porch, and the kitchen. It serves different functions depending on family occupation and structure; sometimes

Figure 16. Television sets displayed in the living room. Both units, in working order, symbolize material accumulation and the financial solvency of the family. Photograph by author, 2007.

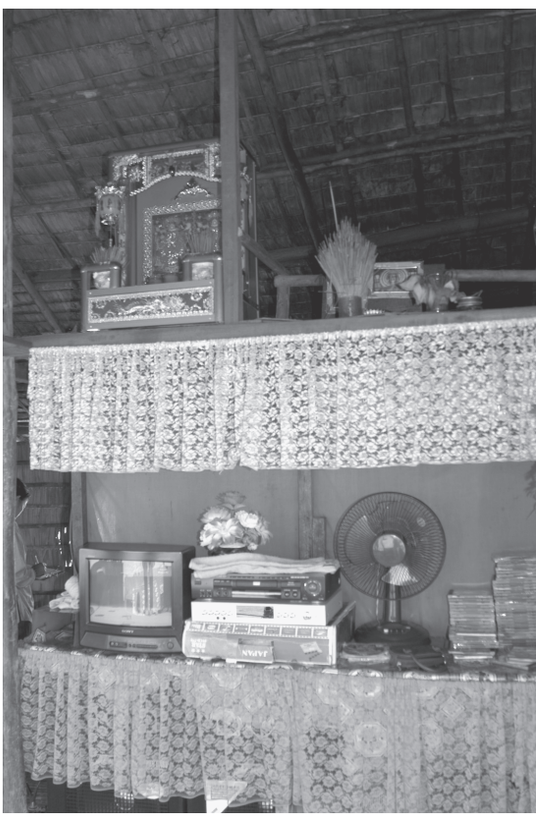

Figure 17. Secular objects like the television, fan, and VCR are located on the lower shelf, while the spirit house is placed along the spiritual axis, closer to the ridge beam. Photograph by author, 2007.

Figure 18. Khmer floating house interior. The view was taken from an entry toward the ancestral wall as occupants took part in the field interview, 2007. Photograph by author.

it is used as a storage area for the family business and sometimes as a sleeping area for parents.

Area 6 is the only partitioned room of the dwelling. The most private area in here is the sleeping area. Located toward the left-hand side of the house when viewed through the front entrance, it is reserved for young daughters and is inaccessible to outsiders, non-kin guests, and males. The private part of the dwelling is not centered on an ancestral column like the public part and does not have a collective living area for the family.

The spatial development of house plans also reflects the family structure and the sociocultural makeup of the community. In general, sleeping arrangements are dispersed around the house, with the exception of the designated sleeping area for young daughters. Once boys have transitioned from childhood to adulthood, they are expected to sleep wherever space is available—most often in the family boat or the canoe docked next to the house—to protect the family and their possessions. Roll-away floor mattresses provide sleeping areas within the dwelling for parents and the rest of the family at night. The arrangement and placement of the interior partitioned room in the back of the house reflect the cultural desire to protect family lineage and, consequently, the chastity of unmarried daughters. In all other respects, Khmer house plans are relatively open and uniform.

Food preparation, the responsibility of the eldest daughter or the daughter-in-law, takes place at the back of the house on or around the porches. This area is regarded as an exclusively female domain; there is a hierarchy among women of the household, based on age and marital status (area 7, 8). In some houses, the food-preparation area is located one foot below the main floor. Families store all kitchen utensils vertically on the walls and do their cooking in clay pots on an open wood fire. They serve daily meals at the front of the house and consume them mostly on the floor. Families with higher income usually replace the open-pit fire with modern butane-gas cooktops. All cooking and washing activities take place in and around these areas. The personal hygiene area (9) at the back of the house is limited to a three-foot-by-three-foot enclosure, with no infrastructure and limited privacy.

The narrow wraparound porch (10) plays a pivotal role in the social life of the community. It is a transitional space and the initial point of interaction with the social realm. It also acts as a privacy filter with respect to the public gaze. Most domestic chores and activities take place on or around the porch, which is covered at the roof level to provide protection from rain and sun. Activities such as personal hygiene, food preparation, and clothes washing move to the edge of the domestic enclosure. Thus the boundaries of the domestic domain expand to the exterior and transform the thresholds between interior and exterior into functional and habitable spaces. As a

consequence, a significant portion of social interactions and community connections take place on and around the semipublic domains of the porches. In principle, porches are considered a female domain; however, the movement and activities of male/female, kin/non-kin, and young/old are convoluted within these transitional spaces.

The fishing season has the most profound effect on the Khmer people and their environment. During the fishing season, house boundaries extend to accommodate fish-processing activities such as drying and cleaning. Families use the roof, porch area, and vertical surfaces of exterior walls. They erect bamboo structures to provide further surfaces to accommodate these activities. Interior spaces provide storage for fishing gear and nets. Daily homebound activities adjust to accommodate the fishing seasons. The boys' school cycle terminates so that they may help the adult men with their fishing activities. Daily routines adapt to a larger-scale cycle, men to a work cycle, children to a school and work cycle, women to both of these cycles and to the neighbors' and the community's cycles. Furthermore, these all adjust to a larger seasonal cycle. Thus, adaptation involves temporal cycles that are embedded hierarchically within one another. The other salient, overlapping, cyclic event is the change of flood levels: families move their houses an average of twelve times a year in order to provide protection against the monsoons and the wind. These two dominant cyclic events define the community, and all other activities, including personal cycles, adapt to these main salient cycles.

The objects displayed within the interiors play a significant role in place attachment (emotional or affective bond between people and place). Furthermore, they are the signifiers of the personal and cultural norms of occupants. During my visit, a Vietnamese doctor referred with pride to his diploma, which he had framed and displayed over the entry. The diploma has a salient presence and is a central object for establishing the owner's identity, social status, and place attachment. The diploma acts as a symbol that establishes the owner's superiority over others while referring to past, present, and possible future successes.

The salience of an object or a place in the home is variable. Its significance can rise and fall at different times, acting in a dynamic fashion. In particular, bucolic images, which are displayed in the living room as a reference to ancestral lands or as a reflection of yearning for the dry lands, can change in significance over time and be replaced by other objects or images.

The importance of social status in Khmer society is evident on every scale, ranging from alignment of homes, house plans, and forms of housing, to the smallest household object. Photographs of grandparents and wedding photographs of family members are also prominently located at and around the ancestral column (wall) and entry points; they create temporal references from past to present, with future implications of success. They are objects of social integration and forge the owners' relationship to the sociocultural context. Rituals and traditions of religious practices also contribute a vertical dimension to the spatial arrangement of the home. The positioning of religious objects and the objects themselves connect the owner to his religious group.

The object attachment (emotional or affective bonds between people and objects that are foundational to the definition of self) facilitates foundational processes such as identity development and place attachment, personal efficacies, and familial and cultural bonding. The temporary nature of the dwelling—in terms of construction, form, size, and mobility—renders interior spaces and objects within as the central elements of object attachment, which gives meaning to the built environment. Meanwhile, the land continuously moves and changes in Chong Kneas; only interior elements and objects remain fixed. Therefore the use of space, movement within the interior, and object attachments are the primary contributors to the identity- and place-attachment process.

Roxana Waterson studied the idea of the house as a "living thing" in Austronesian societies.[25] In Chong Kneas, the house is similarly infused with energy provided by spirits who inhabit trees. Rules and rituals observed during construction, coupled with a strong cosmological belief system, ensure that the house has a

life force. Body metaphors reinforce the idea of the house as a "living thing." The house is an animate being with its own vitality and is united with spirits and occupants. Furthermore, Janet Carsten and Stephen Hugh-Jones propose that the house and the body are intimately connected, being extensions of each other.[26]

Nancy Munn defines space as conceptualized movement in a space–time continuum, rather than as a mere container.[27] Munn builds a notion of "mobile spatial fields" based on Lefebvre's concepts of "field of action" and "basis of action." The field of perception expands from the body and moves through locales, thereby creating mobile spatial fields. Munn argues that place making is a construct that originates simultaneously from the mind, land, custom, and bodily practice. The body as a mobile spatial field makes its own place in the world.[28] One can think of the limitations imposed on the land and the perpetual mobility of homes in Chong Kneas from a spatiotemporal point of view. Thus, the unified living house is a basis of action from which the spatial field of action extends. A social space moves with the house from locale to locale, and place making thus becomes a mobile notion centered on the house and its inhabitants. Therefore, within the continuum of time and space in Tonle Sap Lake, the sense of space is defined and redefined by the fluidity of the movement of its occupants.

During interviews, most of the time occupants did not answer the question, *"How do you determine where to go each time you move?"* Sometimes they answered with ambiguous comments like, *"We go to the same place."* Perhaps clarification of these vague answers lies in the interaction between restrictions induced by the landscape and the mobile field of action. Interdicted spaces on terrain defined by the shallow waters, the temperament of the climate, and cosmological beliefs carve out negative spaces. In turn, negative spaces create repeatable transient boundaries. The boundaries of these carved-out spaces define where occupants cannot go. Perhaps movement through these interdicted spaces is habitual and has established an obvious pattern of movement that rendered my field questions trivial to village occupants. Location determination requires further study and specific empirical data. Boundaries define paths and, within these boundaries, place making or sense of space is not only defined by the act of moving through spaces as "mobile fields of action;" interiors and objects within also play an important role. They are the only constant elements, providing a sort of "frame of reference" within the fluidity of Chong Kneas.

Closing Remarks

In essence, the arrangement of physical space, the objects it contains, and the use of the physical environment reflect socioculturally defined behaviors and ideas. These collective behaviors and ideas are the definitive elements of the physical environment of a home. I have only touched on the greater meaning of Khmer domestic environments. In order to understand the cultural identity and its connectedness to the built environments, I studied social behaviors, space appropriations, and use through the filter of opposites such as male/female, young/old, upper/lower, secular/religious, inside/outside, kin/nonkin. I investigated the transactions between the material and immaterial world of domestic space on various scales, discussed how these transactions are modified, and showed how they affect each other. Interiors, centered on the ancestral wall, are pivotal in the day-to-day activities of the Khmer.

Built environments and their interiors are the central elements of a network of systems. They facilitate a form of identification and help engender a sense of belonging for the occupants of Chong Kneas in their fluid environment on all scales. However, I also argue that the act of moving through space also establishes a sense of place that is dependent on sociotemporal aspects of the land and its inhabitants. At present, as Chong Kneas challenges assumptions of fixed space and boundaries, it continues to maintain traditional built forms (although attenuated), building traditions, and the Khmer ethos.

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