

DIRECTIONS : INFLUENCE ON ESTABLISHING BEARING AND SETTLEMENT

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Abstract

People in different cultures have their own unique ways of constructing bearing points and directions to orient themselves with their environment and to give meaning to the world around them. Along with this cognition process, there are social values connected to directions and spatial organization. This article explores the notions of directions and reference points and how they influence the orientation of architectural structures and settlement in different cultures.

Introduction

Cardinal points and other reference points are all culturally constructed. They are the product of cognition process which stems from human actions and reactions to the spatial environment.

The system of thinking, understanding, organizing, and valuing places, positions, and directions is an essential part of culture. In other words, it is an “ethnogeography” or the indigenous cognition of geographical phenomena which include social values connected to spatial organization and directions.

Nowadays, it may be difficult to conceive of cardinal points as something cultural because there exists an international standard for directions which is accepted world-wide. Different styles of compasses have been invented, and the science of cartography and standardized methods of making maps have been developed. Every standard map is marked to indicate north so that common understanding can be established in reading and interpreting a map. This “standard” is actually a part of western Culture. Claudius Ptolemy (C 87-150 A.D.) Greek geographer and astronomer was the first to draft a world map in the second century.

A map is a symbolic form representing land and water. Modern cartography or the art and science of making maps originates from a western cognitive system. Despite this, maps have gained worldwide acceptance as have other symbolic constructions such as cardinal points and imaginary lines like longitude, latitude, the meridian, the equator, and the international date line.

The indigenous map making system without influence from western cartography is generally without reference points. One local Thai map found intact is a military route map called “The Strategic Map in the Reign of King

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Ramathibhodi I” The map is a traditional map drafted from geographical cognition and depicting topographic features such as rivers, mountains, forests, natural obstacles, fortresses, barracks, towns, and villages. The distance is reflected in travelling time, such as 1 day’s travel or 3 nights’ travel, instead of distance such as *wa*³ or *yote*⁴. In many traditional societies, travel is considered an inseparable dimension of distance. In Thailand, distance is sometimes measured by time, as in the sayings “ข้าวห่อข้าวเดือด” (the time needed for rice to boil) “ข้าวเคี้ยวหมากแตก” (the time to chew a betel nut to pieces) and “ข้าวแล่น” (the time for a short run or in the nick of time).

The strategic map mentioned above is the product of the local cognition system without any influence from western cartographic knowledge. It was drawn during the reign of King Rama I of Bangkok but completed during the reign of King Rama III of Bangkok (Royal Thai Survey Department 1884:1). At the time, the use of maps was limited to a specific circle of travelers, navigators or sailors, warriors, and nobles. Common people had a mental map as a foundation for their daily functioning. A type of map of interest to common people was a treasure log, but unlike most maps which are drafted for easy reading so that a person can understand and get to a specific place, a treasure log is encrypted and encoded. A person needs to interpret and decode it in order to find the hidden treasure.

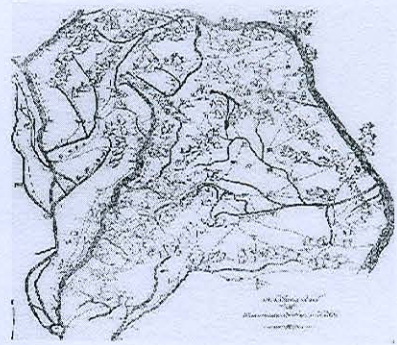


Figure 1: Strategic map drafted in the reign of King Ramathibhodi I, depicting topographic features such as rivers, mountains, forests, natural obstacles, fortresses, barracks, towns, and villages.

Another form of ethnogeography is the beliefs and practices of *Feng Shui*. Literally “*Feng Shui*” means wind and water. It is a principle of spatial arrangement and allocation in harmony with nature. It is believed that appropriate space arrangement in accordance with natural power will bring happiness, peace, and prosperity to those living or working there. Nowadays, the principle of *Feng Shui* has been developed and universalized. There are institutes and even universities which teach *Feng Shui* and geomancy as part of their curriculum.

Experts on *Feng Shui* are called *Feng Shui* Masters, Geomants, Geomancers, or Spiritual Ecologists. From observation and calculation, these experts give advice on spatial arrangement; site selection for a home or village; planning and orienting houses, offices or buildings, etc. Particular attention is focused

³ Traditional Thai measurement of distance, equal to 2 meters.

⁴ Traditional Thai measurement of distance, equal to 16 kilometers.

on orientation, landscaping, and auspicious timing of activities. Even for the dead, it is necessary to select appropriate grave sites so that they may rest peacefully in harmony with natural powers.

Direction and Reference Points

Insects and other animals such as Monarch butterflies, migratory birds, and salmon migrate a long distance using only natural instinct. Humans do not have this instinct, or at least it is not as well-developed as in these animals. Those who get lost in the forest or in the desert usually end up walking in a circle. Therefore, a person who has a “good sense of direction” is a person with keen observation skills, able to recognize land-marks and orient him/herself with ease.

Humans need to identify “bearing” in the environment or surrounding in order to travel or navigate. Ocean navigation during the pre-compass era required great observation skills. Celestial navigators sailed the vast oceans with their knowledge of celestial bodies. Navigators needed to be knowledgeable and have keen observation skills on “way-finding.” Waves and current patterns, bird and fish behavior, humidity in the air, were all clues which navigators used to reach their destination.

Navigators who sailed to different islands using the maritime skills of recognizing ocean current pattern sometimes made a “map” showing the position of islands and the current and wave

patterns in between those islands. This map or “stick chart” was made with bamboo strips, seashells, and cords. It was both a mnemonic device and an accurate navigational tool traditionally used on several islands in Micronesia.

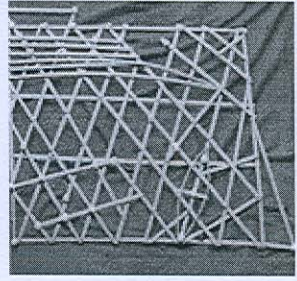


Figure 2: Micronesian stick chart showing current patterns and islands.

Ancient navigators depended on wind power to propel their vessels. Thus, they were very knowledgeable about wind direction and seasonal change. In several places, the names of the wind derive from their original direction. For example, people in Malaysia and southern Thailand call the wind from the north “*uttara*” (Pali for north). The wind from the south is called “*selatan*” (meaning south), and the wind from the west is called “*phrad*” (*phrad* or *barat* means west) (Suthiwong 1986:3124-25).

Nowadays, navigation depends on modern technology. There are modern instruments like compasses, radar, and Global Positioning System or GPS which is now very small and portable. People can carry this GPS anywhere they go so that they always know their position through satellite signal. With the use of this advanced technology, modern navigators neglect knowledge of their forefathers’ way-finding and become totally dependent on these new

navigational tools.

Traditional people who are skillful travelers include the Inuit who traverse arctic ice fields in search of polar bears seals, and fish. The Inuit live in the tundra zone covered with snow and ice. There are practically no tracks or bearing to recognize as reference points. Furthermore, landscape is ever changing due to seasonal change and snow-storm. The Inuit have to seek tracks on seemingly trackless land, search for patterns on the land with seemingly no pattern. Life on the ice field requires sharp observation skills and accurate memory of the landscape.

Traditionally, Inuit travel is not measured in kilometers or miles but by overnight rests along the way. Thus the Inuit talk about “sleeps” as a measurement of distance, the same cognitive system as found in the Thai strategic map mentioned earlier. Distance and travel time belong to the same dimension and are not seen as separate categories.

The Inuit have a mental map filled with bearing and reference points. Several arctic explorers have used this navigational knowledge for their travel in the tundra zone. For example, Knud Rasmussen, who traveled across an ice field in Barrens in 1922, used a map drafted by an Inuit. On this map, north is at the bottom, opposite to modern maps which usually show north at the top (Pelly 1991:58-64).

Nowadays, although the Inuit use modern motor vehicles such as snowmobiles instead of dog sledges, some of them still employ the traditional navigation techniques passed on from their ancestors.

These techniques require two major qualifications: observation and memory.

Nevertheless, a number of the Inuit have settled down permanently and discarded their traditional nomadic life. The traditional skills have been neglected. Inuit children go to school and become part of an urbanized population. After the change in their way of life, it has been found that myopia among Inuit children is on the rise. This may be partly due to visual strain; instead of looking at objects in the distance, children are more focused on shorter distance objects. This degraded eyesight may also be due to a change in diet which causes malnutrition for the development of eyesight.

Reference points using cardinal directions (north, south, east, and west) may have less meaning for people in several cultures, especially those residing on an island. The Hawaiian, the Balinese, and the Moken sea nomads are examples of those who use two main reference points –the direction towards the inland, and the direction towards the sea.

The Hawaiian islands originated from volcanic eruptions, so the inner part of the islands consists of volcanic mountains. The main reference points for people on the islands are “*mauka*”, or the direction towards the mountain, and “*makai*”, or the direction towards the ocean. People who live in Honolulu, the capital of Hawaii on Oahu island have other two reference points: “*Ewa*” or southwest where the town “Ewa” is located, and “*Diamond Head*” or northeast where the old caldera of Diamond Head is located at the end of famous Waikiki Beach.

In Hawaii, especially in Honolulu, casual conversation or even traffic report, use these four reference points. There is a saying that you will know the person is from Hawaii by their use of these local reference points instead of using cardinal directions.

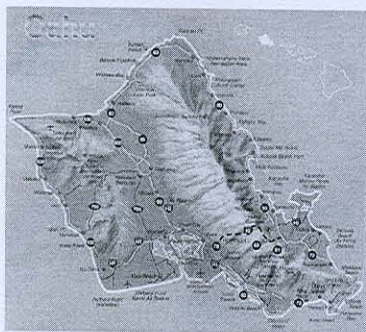


Figure 3: Map of Oahu, showing mountain range and ocean which are used as the main reference points for direction.

On the island of Bali, which is also of volcanic origin, the people use four main reference points but the important ones are *kadja* or towards the mountain and *klod* or towards the sea (Covarrubias 1972:76). The Moken sea nomads, who spend their life travelling to different islands in the Andaman Sea, also use two main reference points of *kotan* or towards the inland and *ta-ao* or towards the sea.

For people residing on an island, there may be reference points other than “towards the inland” and “towards the sea”. As the island is a body of land surrounded by water, there are other possible references such as influential wind and the nearby mainland or land mass.

For Oahu and other islands in the Hawaiian Archipelago, the influential wind is the trade wind which blows into the



Figure 4: The Moken sea nomads who are skillful navigators use two reference points of *kotan* and *ta-ao*.

eastern side of the islands, making the area rainy and lush. This is in contrast to the western side where high mountains block the wind and humidity brought in on the eastern trade wind. Thus the western side of the islands is more arid. The reference points which are determined by the trade wind are the eastern “windward” side and the western “leeward” side.

Figure 5: Reference points of an island

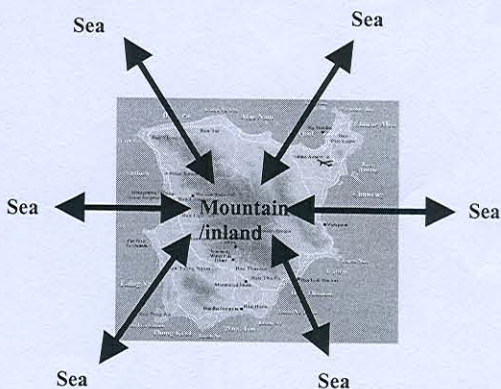


Figure 5.1: Reference points of an island – following geographical features of the island (mountain, sea).

For an island situated not far from the mainland, people may use the mainland as a reference point. Some sea folk in southern Thailand use the reference terms “*na koh*” (หน้าเกาะ) or “front of the island” and “*lang koh*” (หลังเกาะ) or “back of the island”. The front is the side turned towards the mainland, and “the back” is the side opposite to the open sea.

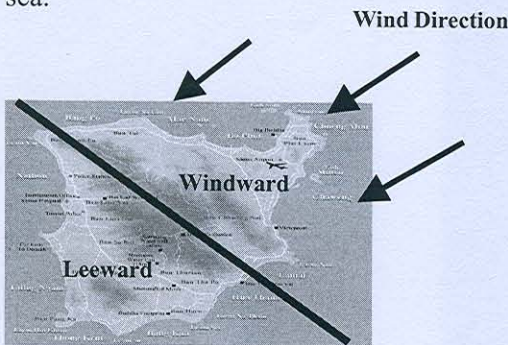


Figure 5.2: Reference points of an island – following influential wind(s).

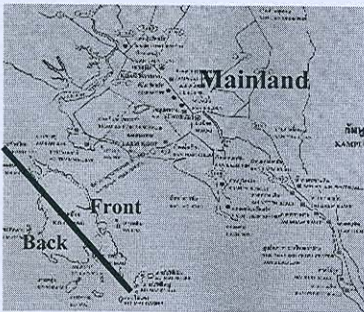


Figure 5.3: Reference points of an island — following the direction of nearby mainland

Directions and Body Orientation

Site selection and orientation for houses, buildings, and settlements may be determined by geographical rationale – wind and sun direction, or it may be in-

fluenced by spiritual beliefs. During their daily prayers, Moslems in Thailand, Malaysia and Indonesia turn their face and body towards the west, in the direction of the Kabah stone at Mecca – the holy city in Islamic belief. That direction will change according to where the persons are. Moslems in England turn their face and body towards the east when they pray. With the same principle, Mosques are generally oriented towards the holy city of Mecca as well.

“Headwise Direction” or Southern Side and “Footwise Direction” or Northern Side (ทิศเบื้องหัวนอน และทิศเบื้องตีนนอน)

King Ramkhamhaeng’s inscription I⁵ (ศิลาจารึกพ่อขุนรามคำแหง หลักที่ 1) portrays the town of Sukhothai in detail, describing places like temples, houses, rice fields, and fruit orchards. The reference points used in the inscription are “western side, eastern side, footwise side, and headwise side”.

A comparison of remaining places and other evidence indicates that the headwise side is the south, and the footwise side is the north which *Burapharam* temple inscription no. 286 specifies as “*dan hon teen*” (ด้านหนตีน) (Narumon 1996: 308-310). In southern Thai dialect, the north is called “*sa teen*, *pla teen*, or *kang teen*” (สตีน ปละตีน ข้างตีน or footwise side) and the south is called “*hua non*” (หัวนอน or headwise side).

⁵ There is a suggestion that the inscription was produced at a later date.

Reference to the north as the footwise direction and the south as the headwise direction is not only found in Thai culture. Khmer people also have the words “เชืง” (*cheung*) which means feet or the north, and “ตบุง” (*taboong*) which means head or the south (Banjob 1983:57). The belief in and practice of orienting one’s body during sleep stems from Buddhism, particularly from the *Thikhanikaiphatikawak* scripture (คัมภีร์ที่มณฑลพายุกวรรค) in the *Tripitaka* (ไตรปิฎก) which mentions the six directions or quarters (Phra Rajavaramuni 1975: 158-164) and the analogy of those directions to different groups of people one must associate with.

It also describes the appropriate behavior towards these different people.

The six directions are:

- 1) The east or the direction in front, which is analogous to one’s parents, as they are the propagators who care for us.
- 2) The south or the direction to the right, which is analogous to one’s teachers, as they are the ones who taught us many things.
- 3) The west or the direction behind, which is analogous to wife and children, as they are the ones who follow and support us in many ways.
- 4) The north or the direction to the left, which is analogous to friends and companions, as they help us overcome obstructions and support us.
- 5) The “nadir”, which is analogous to servants and workmen, as they help us work and are the foundation of our strength.
- 6) The “zenith”, which is analogous to monks, as they are morally superior and act as spiritual leaders for us.

In the sitting or standing position, Lord Buddha always turned his face towards the east because it is considered the “front” side, thus representing the side of the father and mother. While in bed, however, Lord Buddha adhered to the healthy practice of sleeping on his right side which is good for the heart and overall blood circulation. Thus, facing east, and laying on his right side, his head naturally turned towards the south, and his feet towards the north. Therefore, Buddhists traditionally followed Lord Buddha’s practice in orienting the body while in bed, and turning the head towards the south.

The traditions of pointing the head towards the south while in bed date back to the Sukhothai era. This body orientation during sleep has influenced the orientation and planning of houses, vihara, and other sacred structures. For example, the Nakhon Srithammarat town plan reflects the spiritual attitudes and beliefs of the people. The Grand Relic Stupa was placed at the southernmost part of the old city, embraced by rectangular walls. This is not by accident, as it is in accordance with the old custom of positioning one’s head southward while in bed, so that all the people residing within the old city limits would point their heads respectfully in the direction of the Grand Relic Stupa when sleeping (Nid 1994:6).

On the island of Bali, there is a belief and practice about orienting the body in line with sacred places. Most Balinese are pious Hindus, and there are numerous Hindu temples on the island. The major sacred shrine on the island is Besakih temple on the slope of Gunung Agung, the sacred mountain which is

believed to have originated from *Mahameru*, the abode of the Gods and Goddesses in India. With the height of 3,142 meters or 10,350 feet, it is the dominant feature of East Bali and has a profound significance in the life of the Balinese. Communities orient their houses, temples and shrines towards the great mountain. The people pray and point their head during sleep towards the “mother temple of Bali” of Besakih (Covarrubias 1972:92-93).

Orienting one's living body during sleep is as interesting as positioning the dead in the grave. Archaeological excavation of grave sites reveals that in several cultures, dead bodies are positioned according to the local beliefs about death and the next life. In many societies, the east is considered to be the direction of birth and beginning, and the west is the direction of death or the end. Therefore, dead bodies are positioned so that their heads point towards the west, in the direction of death so that the spirits may travel to the land of death and rest peacefully there (Chin 1969:38-41).

Archaeological excavation in the Batanes Islands in northern Philippines reveals that traditional people on the islands have a unique burial practice. That is, the dead bodies are placed in a sitting position, under rocks arranged into a boat shape. Two large flat rocks mark the bow and the stern of the boat. Interestingly, the bow always turned towards the sea. It is believed that these people were seafarers whose maritime livelihood rendered a strong spiritual attachment to the sea. At the end of their life, they even built the grave site to symbolize this attachment, and the boat burial reflects that they will sail out to

sea again during their afterlife.

Grave sites decorated as boat burials can only be found in the Batanes Islands in the Philippines, the Lan Yu Islands in Taiwan, and in certain Scandinavian countries. There has not been a comparative study of these sites to find out whether boat burials from different parts of the world are related through cultural diffusion or whether they were an independent invention.



Figure 6: Boat burial in the Batanes Islands in the Philippines. The flat rock representing the bow of the boat always points towards the sea.

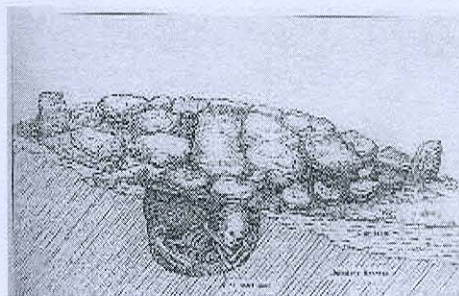


Figure 7: A Sketch of a boat burial grave site. Underneath the boat-shaped rocks lies a dead body (Courtesy of the National Museum of the Philippines).

Direction and the Orientation of Architectural Structures

For several thousand years, humans observed and calculated time and the orbit of the sun with precision. Structures like

Stonehenge in England and Phanom Rung Sanctuary in Thailand are examples of architecture built with reference to the sun's orbit.

Stonehenge is a circle of large rocks located near the town of Salisbury in England. It is estimated that this circle of rocks is more than 3,500 years old. The rock position indicates the sun's orbit, so Stonehenge is virtually an ancient calendar. In mid-summer in the west (which usually falls on June 22), the sun is at the highest point of its orbit, and the people who stand in the circle of these rocks will see the sun rising and positioning itself with the outer circle of rocks as if it is balancing between the two rocks. It is said that Stonehenge was built in order to predict solar and lunar eclipses as well.

Phanom Rung Sanctuary is a Khmer architectural site constructed out of Saiva Hinduism belief. Architectural orientation and design reflect that the architect(s) had detailed and accurate knowledge of directions and the sun's orbit.

In building a house, it is necessary to position the structure to match with local geography and climate for comfortable living. Each culture has its own customs or traditions of house building, and this is a folk wisdom reflecting keen observation of the environment, especially the direction of the sun and the wind. It also reflects an attempt to adapt and produce an architectural style in harmony with nature, instead of adapting nature, to fit the needs and comfort of human as in modern times.

There is a Thai custom prohibiting the

building of a house against the path of the sun (อย่าปลูกเรือนขวางตะวัน). This is a wise architectural practice which avoids too much exposure to the sun and allows as much breeze to flow through as possible. A house has to be built so that its longer part turns towards the south; the narrow side, which is the shorter part of the house, is exposed to the morning sun from the east and the afternoon sun from the west. The front of the house faces south, in order to get the breeze from the prevailing southern wind.

Positioning the house towards the south in Thai culture is in congruence with the Chinese custom of building houses, temples, and palaces. Nevertheless, the same practice stems from different rationales. In China, structures are built towards the south in order to be exposed to the winter sun when the sun is at the lowest orbit in December.

The custom of building a house in New Zealand follows the same rationale. Due to its position in the southern hemisphere, New Zealand has the custom of building houses facing north in order to get sun exposure during the winter time, when the sun is at its highest orbit in June. Therefore, the front part of the house is generally called the "sun porch".

People on the Batanes Islands in the Philippines have to consider more than the sun's orbit to build their houses. The islands lie in the typhoon belt, so the houses are built to withstand strong winds, which may last for weeks. Therefore, traditional houses are built very low. Walls are built from rocks or stones, and the roof is thickly thatched (sometimes more than a foot thick) with cogon grass. Doors and windows are

just small openings in the house. Most importantly, the thick solid rock wall turns towards the direction of the wind. Therefore, most houses in the Batanese Islands turn their backs towards the wind.



Figure 8: Houses in the Batanese Islands are built from rocks. The back wall is thick, solid and turns towards the wind. Doors and windows are but small openings and minimal in number.

Geographical influence is not the only factor determining the positioning of houses and other structures. Spiritual beliefs also play an important role in shaping customs about structural orientation. For example, in Thai temples, each *vihara* has Buddha image(s) whose faces are turned towards the east. As mentioned earlier, Lord Buddha usually sat or stood facing east or in the front direction. Consequently, building and positioning the *vihara* follow that custom and practice of Lord Buddha. In addition, this custom is influenced by the *mahayana* belief that the west is *sukawati* (สุขาวดี) or *Bhudda kaset* (พุทธเกษตร). When we *wai* or pay respect to Buddha images, we turn our face towards the west, where *Amithapha* Buddha rests (Nid 1994:6).

Nevertheless, the custom of orienting temples and *vihara* find some exception

in the case of those situated by a river or canal. Temples by a canal usually turn their front towards the river or canal, which is not always towards the east. This is due to the significance of the waterway, which acts as a transportation line and as an important water source for the people. Houses and temples by the river and canal not only turn their front towards the waterway, but also has a small pavilion with a landing which serves as a place for the people to bathe, wash, and get in and out of boats.

Bangkok and the Expansion Towards the South

After the fall of Ayutthaya and the decline of Thonburi, King Rama I of Bangkok, the first king of the new dynasty, decided to move the capital to the left bank of the Chao Phraya River. The Grand Palace was then established on prime land on the left bank already occupied by the Chinese community led by *Phraya Raja Setti*. The whole Chinese community was granted a new piece of land, immediately outside the newly built city wall, called *Sam Pheng*, a distance of two kilometers downstream from the area they were requested to vacate. *Sam Pheng* grew rapidly by leaps and bounds and became known as China Town.

During the early Rattanakosin period, people were still nostalgic from the old capital of Ayutthaya which had maintained its glory for over four centuries. Bangkok was an attempt to retrace and revive the old form of Atutthaya. With the former capital in mind, the city fol-

lowed very closely the Ayutthaya tradition of locating palaces and temples. To reflect the development pattern of the former capital, the Grand Palace was located at the upper middle portion of the city island, while the Palace of the Front was situated at the upper right corner of the island, as in Ayutthaya. King Rama I also built the Royal Chapel in the palace compound to resemble *Wat Sri San Phet* in the compound of the former Royal Palace in Ayutthaya. He also ordered the digging of the *Maha Nak* Canal for the annual boat festival to echo the delightful custom observed in old Ayutthaya (Shiranan 1989:372).

Furthermore, a traditional belief has affected the growth pattern of Bangkok. This is another form of indigenous town planning or organizing settlement pattern in congruence with traditional beliefs and attitudes. Out of respect for the king's palace as the principal focus of the city, foreign nationals in the past were granted land downstream and never upstream for their settlements. This is a practice conceived and followed by common social attitudes and which became an unwritten rule. The exceptions are Yuan (Annamese) and Khmer villages (nowadays located in *Samsen*), as these peoples have populated the area since the Ayutthaya period, prior to the establishment of Thonburi and Bangkok respectively.

During the Ayutthaya period, the Portuguese, Dutch, French, Japanese, and other national communities were all located downstream from the Grand Palace in the island city of Ayutthaya. During the Thonburi period, King Taaksin granted Father Corre a sizable piece of land for the Portuguese com-

munity together with the Santa Cruz cathedral on the right bank of the Chao Phraya River. The site was called "The Settlement of Holy Cross" and was situated half a kilometer downstream from the King's Temple of Dawn Palace.

In 1820, King Rama II granted Carlos Manole de Silveira, a Portuguese consul, a piece of land formerly occupied by the Annamese Prince Ong Chiang Sue, a little further downstream from China Town. It later became the site of the Portuguese Embassy, with its entrance on present day Captain Bush Lane. After treaties with western nations, King Rama IV granted land to these foreigners to establish their consulates and legations further downstream beginning from the mouth of the Phadung Krung Kasem moat toward the districts of Bang Rak and Yaan Naawa. According to the map drafted during the reign of King Rama V (1896), consulates and legations were all located along the Chao Phraya River—Austro-Hungarian, German, Portuguese, British, American, French, Danish, and Norwegian-Swede.

During the reign of King Rama V, the French consul requested permission to establish a mill somewhere upstream. Yet the Foreign Affairs Department responded that it was not appropriate to build a mill upriver. The map of 1896 showed no rice mills or saw mills upriver beyond Rattanakosin Island.

We may reasonably assume from the above-mentioned observation that the attitude and belief concerning the esteem of one's head, the most important part of the body, or consideration for the direction of the flow of the river in ref-

erence to one's location, probably contributed to Bangkok's tendency to expand towards the south. The expansion kept going further south until it reached Bang Kho Laem's Thonon Tok, a Thai name meaning "land's end", at the southernmost end of New Road, then swung back further away from the river towards the east along the four newly built parallel roads namely *Sathorn*, *Silom*, *Suriwong*, and *Si Phraya*. Financial institutions and international corporations started to develop and expand along the four new corridors, especially Silom Road, where land prices are the highest in the country today (Hinshiranan 2000:3).

At present, there is an idea to develop real estate on Rama III Road, which is scattered with piers and warehouses, so that the area will accommodate business expansion from Silom and Sathorn roads. From *Feng Shui* perspective, the area along Rama III road is considered a good site because of the curve which resembles a dragon's belly. It is believed that the site is auspicious and will bring prosperity and success to businesses.

Since the Ayutthaya era, and through the Thonburi and early Rattanakosin periods, we can see that urban development has been determined by the traditional beliefs and worldview of the people, especially their rulers. The expansion of communities, towns, even rice mills, saw mills, and warehouses southward along the Chao Phraya River helps to conserve the natural and cultural environment of the city.

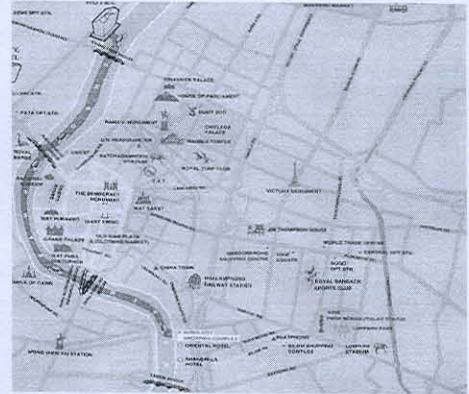


Figure 9: Bangkok map, showing the expansion towards the south as a result of traditional attitudes and beliefs

Nowadays, Bangkok is undergoing uncontrollable growth. The sprawl is not curbed by any rules or regulations. Therefore, it has become a city filled with myriad problems, and often the solution to one problem becomes a parent to several other problems.

Conclusion: The Notion of Directions as Culturally Constructed

Examples from several societies and cultures mentioned above reflect that the system of thinking about directions, orientation, site selection, and settlement patterns is an essential part of culture. Human have constructed the notion of direction as an attempt to adapt to the environment and to categorize and give meaning to the world around them.

Nowadays there is an accepted "standard" about cardinal points and imaginary lines which serve as a universal bearing or reference point. The development of western cartography, along with the advanced technology of aerial

and satellite photography, makes mapping and positioning even more accurate.

Universal reference points and standardized cartography yield common understanding among people from different cultures. This is a part of the globalization process, making the world into one. Yet in the age of globalization, the exploration and understanding of "ethnogeography" or folk systems of thinking about their space or are important because it provides an insight into the interactions between humans and the environment. There are lessons to be learnt from these interactions, especially how humans adapt to live harmoniously in the local environment.

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