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# POWER AND PRAGMATISM
# IN THE POLITICAL ECONOMY OF ANGKOR

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Figure 1 Location map

## Abstract

The relationship between the Angkorian Empire and its capital is important for understanding how this state was sustained. The empire's political economy is studied by analysing data from Pre-Angkorian and Angkorian period inscriptions in aggregated form, in contrast to previous studies which relied mainly on detailed reading of the texts. The study is necessarily broad to overcome the constraints of having relatively few inscriptions which relate to a selected range of topics, and are partial in viewpoint. The success of the pre-modern Khmer state depended on: its long-established communication and trade links; mutual support of rulers and regional elites; decentralised administration through regional centres; its ability to produce or acquire a surplus of resources; and a network of temples as an ideological vehicle for state integration. The claim that there was a centrally controlled command economy or significant redistribution of resources, as for archaic, moneyless societies is difficult to justify. The mode of control varied between the core area and peripheral areas. Even though Angkor did not have money, it used a unit of account. Despite being an inland agrarian polity, the Khmer actively pursued foreign trade. There are indications of a structure, perhaps hierarchical, of linked deities and religious foundations helping to disseminate the state's ideology. The establishment of these foundations was encouraged by gifts and privileges granted to elite supporters of the rulers. Contrary to some views, Angkor was not excessively rigid or unusually hierarchical and autocratic when compared with contemporary analogous states. Its political economy is marked by three simultaneous cycles indicative of changing power relationships: cycles of royal inscriptions; of non-royal inscriptions; and fluctuating control over peripheral territories. Its processes and strategies were sufficiently flexible for it to endure as an empire for approximately six centuries, despite internal and external disturbances.

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This thesis had its beginnings in the decision to do something I had been advised against many years ago, on the grounds that women in the field of archaeology had few opportunities for employment. The relevance of this piece of logic had now passed.

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For Terry

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# 1 The political economy of the Khmer Empire: an introduction

> At the (magical) centre of the Kingdom (i.e. the central point of the city) rises a Golden Tower (Bayon) flanked by more than twenty lesser towers and several hundred stone chambers. On the eastern side is a golden bridge guarded by two lions of gold, one on each side, with eight golden Buddhas spaced along the stone chambers.
>
> (Zhou 1993[1297]: 2)

## 1.1 Introduction

The great wealth of the capital city, Angkor, recorded by a visiting Chinese envoy at the end of the 13th century, symbolises the large quantity of resources which the state had been able to accumulate. Yet while the legacy of Pre-Angkorian polities (6th–8th century CE) and the Khmer Empire (9th–15th century CE) has been studied for over a century, many aspects of their political economies are only partially understood. The material remains of the pre-modern period are a wealth of religious monuments, artefacts and some inscribed texts. Temples were constructed to house religious foundations dedicated to specific deities, and many of the inscriptions carved on their walls relate to the endowment of these foundations. They detail assignments of land, working personnel, crops and animals, declarations specifying their upkeep, and provisions for the future. Texts emanating from rulers were concerned with royal foundations or were ordinances dealing with the establishment or administration of private or non-royal foundations. Inscriptions in Old Khmer and Sanskrit, found most commonly in temple precincts on *stelæ* and door jambs, and ranging in age from the 4th or 5th century CE to the 14th century CE, have been an important source of information about the society which produced them, but have also left scholars with many unresolved questions. Historical research has been hindered by the limited data, the lingering influences of early research priorities, and economic theorising that is often inapplicable to Angkor and the Khmer Empire or to pre-modern Southeast Asian societies in general. While much of the economic data for the Khmer state was largely ignored, what research has been undertaken on Angkor's economy has, to some extent, relied on rather over-literal interpretation of the texts, with the assertions and assumptions of writers in the 1960s and 1970s taken at face value and reiterated up to recent times. The deficiencies and apparent inconsistencies in the historical data have served to delay studies which might depict the Khmer state and its economy in greater detail. In part because some characteristics of its agrarian economy and its people appear to have changed little over time, and because pre-colonial and colonial society was seen to prefer looking to the past for how things should be done (Thion 1993: 96-97; Chandler

1996[1982]: 45-60; 1996[1983]: 2; 10), Angkor has been portrayed as somewhat inflexible and conservative. It has also been characterised as poorly commercialised and insular in comparison with neighbouring contemporary states (Hall 1985: 171, 177; Jacques 1986: 330; Lieberman 2003: 223; Vickery 1998: 314). Transactions outlined in the inscriptions seem, at first sight, to be consistent with the absence of money in the archaeological record and suggest barter being conducted without the benefit of a unit of account. Its economy is said by some to have been closely controlled, yet almost paradoxically its gross political structure is depicted by others as flexible and unstable.

Early research focused on restoration of temples and the study of architecture and sculpture as well as the stone inscriptions, and resulted in the first site maps and inscription inventories (Aymonier 1900-1904; Lunet de Lajonquière 1901; 1902-11; Parmentier 1916; 1927; 1931; 1939), which documented chronologies and architectural styles. Much of the interpretation was based on the premise that Khmer culture derived from India. This view can be seen today as being in the context of Europeans justifying their colonialism, under which change could be brought about through external influence (Trigger 2006: 268-270). The Khmer were rarely mentioned in other contemporary writings and this reinforced an impression that much of Khmer culture was of little interest other than as a colonial extension of another culture. This research, did, however, provide us with a large proportion of the corpus of transliterated and translated texts and laid the foundation for systematic documentation of the Khmer historic record by Cœdès and the other epigraphers whose work underpins much of this thesis. Parmentier (1916) was the first to see the potential for plotting the locations of inscription sites as a way to visualise the extent and shifting dimensions of the Khmer Empire. Yet while the inscriptional legacies of states such as Pagan and those of Central Java have provided useful insights into their political economies, the Khmer inscriptions have been perceived by some researchers as having limited scope, and Angkor still seems to be something of an enigma in Southeast Asia. Was it substantially different from the other polities or did it differ only in degree?

Many of the research deficiencies are now being remedied by archaeological work, a revised appreciation of the role of indigenous innovation in the development of the Khmer society, and by continuing detailed approaches to the inscription material. A critical issue is that some long held views of Angkor's political economy are based on models developed for other regions, and have not been examined using Khmer data, or if they have, overlook important aspects of its complex and variable political economy.

The aim of this study is to elucidate processes and strategies which enabled Angkor's rulers to accumulate resources and sustain the state. Those which are discerned can be broadly categorised as: enhancing the communications and trade network; maintaining an effective decentralised administration; maintaining the support of regional elite; maintaining systems for

accumulating wealth; or enhancing state integration through a network of temples. Their operational details (modes of communications, administration, commerce and the role of the temples) are peculiar to Angkor, but can be broadly compared with those of analogous contemporary states in South and Southeast Asia.

The analysis of the corpus of Khmer inscriptions, the principal source of data in this study, provides new perspectives on how Angkor functioned as an empire. Three areas of Angkor's political economy which are poorly understood are key elements of the state's integration. These are: the operation of the administration and its communication system; the mode of carrying out commercial activities; and the role of the religious foundations in the state's integration. This study shifts the focus of research to a broad analysis of trends over time and space of markers in the political economy. It analyses such characteristics as: the actions and interactions of rulers, other elites and non-elites; the numbers of inscriptions produced in different periods compared with other material or socio-political indicators; their distances from the capital Angkor; and their spatial distributions within a network. In contrast to many previous studies, the epigraphic data is systematically collated in a database[1] and analysed quantitatively.

In this chapter, both Angkor the city and the empire of the same name are defined and the record of Angkor's historiography is outlined. The aims of the research are then set out, and the broad framework adopted for the analysis is summarised.

## 1.2 Angkor: city and empire

### 1.2.1 Angkor the city

The capital city, Angkor, was in the north-central part of present-day Cambodia, located on a sandy plain, bounded on the south by the Tonle Sap or Great Lake and on the north by the Kulen range (Figure 2).

Angkor was once the location of a large low density pre-modern metropolitan area (Fletcher, Evans et al. 2004; Evans, Pottier et al. 2007) and is the site of major monumental structures that were built by a succession of Khmer rulers between the 9th and 13th centuries CE (Appendix 1). The urban complexes, about 1,000 square kilometres in area in the 12th and 13th centuries, covered sites already occupied in the Pre-Angkorian period by temples and a mosaic of mounded and moated villages and inhabited by subsistence farmers and fishermen. An estimate of the population of the city at its height, based on aggregate rice yields for different modes of crop production, indicates an upper limit of three quarters of a million people (Lustig 2001: also cited in Fletcher, Barbetti et al. 2003). Even after the weakening of

[1] For link to database, see Table of Contents.

the empire in the 15th to 16th century, and the eventual shift of a Khmer capital to the Phnom Penh region, the Angkor area continued to be occupied (Engelhardt 1995: 19; Jacques 2007: 47). However, the population decreased considerably and much of the area was reclaimed by tropical forest.

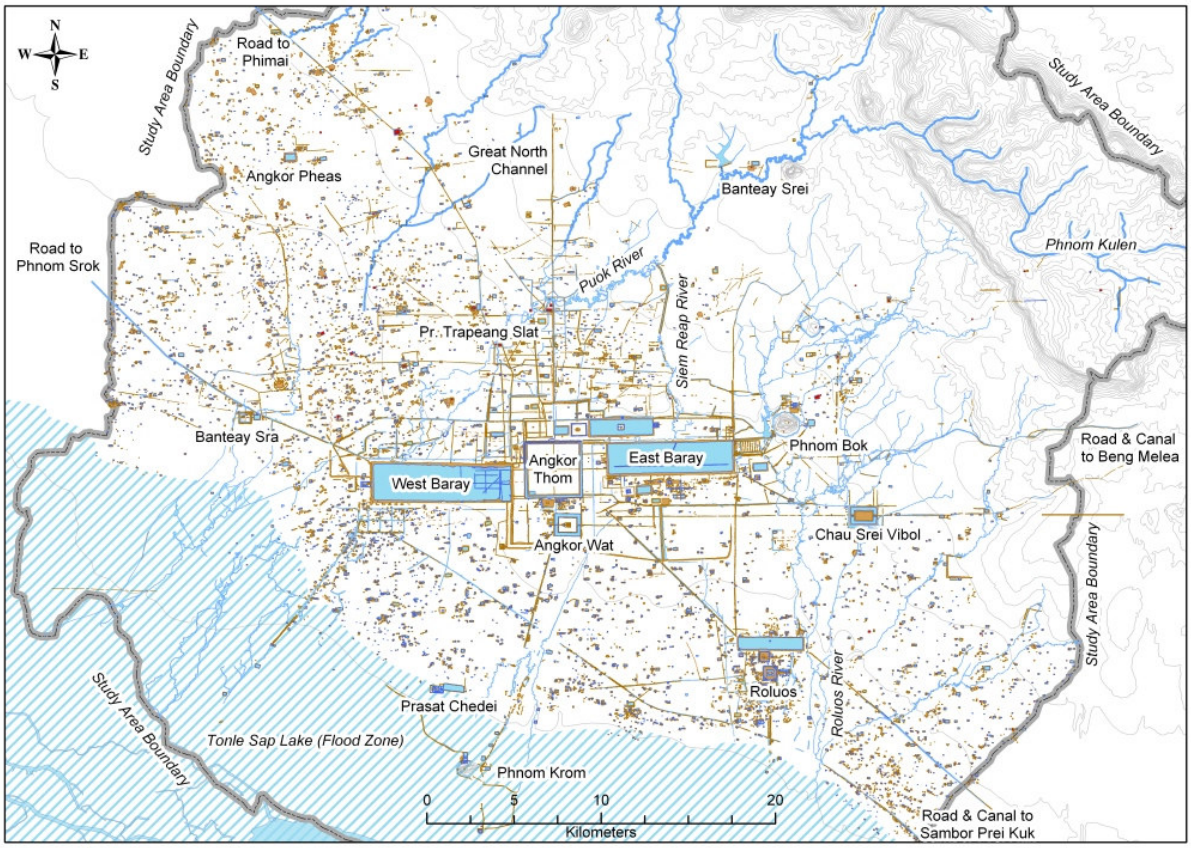



Figure 2 Angkor the city and study area of Greater Angkor Project. (Pottier 1999; Evans 2007)

The many ruins, several hundred in number, built of laterite, brick and sandstone, range in size from tiny pavilions to vast temples, the largest being the iconic Angkor Wat (early 12th century) and the Bayon (late 12th century), standing in a landscape criss-crossed by embankments and canals. The massive rectilinear temples are constructed inside enclosures, bounded by moats, and interconnected by roadways. Their architecture and bas-reliefs, depicting Hindu epics, the battles of kings, as well as Buddhist images and scenes from the daily life of the population, have long attracted scholars (e.g. Vickery 2005a; Roveda 2007) and admirers. However, while the monuments have been painstakingly studied, information about the urban complex within which they were situated is less certain. The houses of most

of the population (and probably many other buildings) were of organic materials, such as wood and thatch, and have not survived.

Bunded rice fields occupy the spaces between temples and infrastructure and extend beyond into the rest of Siem Reap province. On satellite and aerial photographs, the old field patterns, still visible under some of the new land subdivisions, tend to be much smaller and may run at a different angle to the present land holdings (Engelhardt 1995: 22). They often seem to be in groups, oriented to small temples and canals (Pottier 2000: 112). The monuments, fields and house mounds distributed across the landscape suggest that the population of Angkor was producing much of its own food. Mapping (ibid.) has shown that the house mounds, either scattered or in clusters, were often associated with *trapeang* (artificial ponds). Excavation and coring in the east-west channel south of the Preah Khan temple indicates that people also lived along the banks of canals, mostly dug into the natural ground and bounded by earth embankments at least on the downslope side, and also on embankments which were built for roads as well as for water control (Fletcher, Barbetti et al. 2003; Evans 2007: 176-177).

Visitors to Angkor are immediately struck by the grandeur of the past they glimpse at the site. How the Khmer achieved this impressive scale and reordered the landscape have long been the subjects of speculation. The first western visitors to Angkor in the 16th century, who were Portuguese and Spanish, could not believe that the amazing ruins of the temples they saw, half buried in the jungle, had been built by the Khmer. Consequently, they ascribed them to the Jews, Alexander the Great, the Romans under the Emperor Trajan or the Indians (Argensola 1609, cited in Higham 2001: 140; Groslier 1958: 79-81; Mabbett and Chandler 1996: 2). However, many temple inscriptions testify that Khmer kings built and endowed the large temples. A visiting Chinese envoy, Zhou Daguan (1993[1297]), in 'The Customs of Cambodia', described the wealth and grandeur of the large temples and court life. The account was written 80 years after the death of Jayavarman VII (1181-ca.1220 CE), whose reign represents Angkor at the height of its power.

A key to Angkor's wealth and power, and its greatest asset, was its location on the Tonle Sap. The Mekong River, fed by melted snows from the Himalayas and rainfall in China, Myanmar, North Vietnam, Laos and Thailand, rises and falls about nine metres each year. It meets the Tonle Sap River at Phnom Penh, where the water divides to flow down the Mekong and Bassac Rivers to Vietnam and the sea. As the river level rises, some water also flows back up the Tonle Sap River into the Lake, which increases from about 2,700 ha to more than 10,000 ha between May and November (Delvert 1961: 80), flooding forests and providing the habitat for a large number of fish. Today, the lake and the river that flows from it provide 60 percent of Cambodia's protein needs (Osborne 2000: 13). The floods inundate a multitude of small rivers, channels, lakes and ponds, which receive rich deposits of silt. At the end of the

wet season, the floods recede rapidly and the subsequent dry marks the end of much of the agricultural production, particularly the rain-fed rice.

The site of Angkor may also have been attractive because the slope of the land there is relatively steeper than many other places around the lake, allowing it to be closer to the shoreline in the dry season (Acker 2006). The area around the lake is relatively flat, with some 'irregular rocky islands' — hills projecting from the plain — providing excellent lookouts, the most prominent of which are the Kulen Hills to the north and north-east of the city of Angkor (Hendrickson 2007: 243). The location allowed it to benefit from the Lake, as well as the sandstone quarries of the Kulen Hills and laterite quarries at Beng Mealea to the east. Access to the north and routes to the east and west may have also have influenced the choice of site (Mabbett and Chandler 1996: 87; Hendrickson 2007: 91-92).

### 1.2.2 Angkor's empire

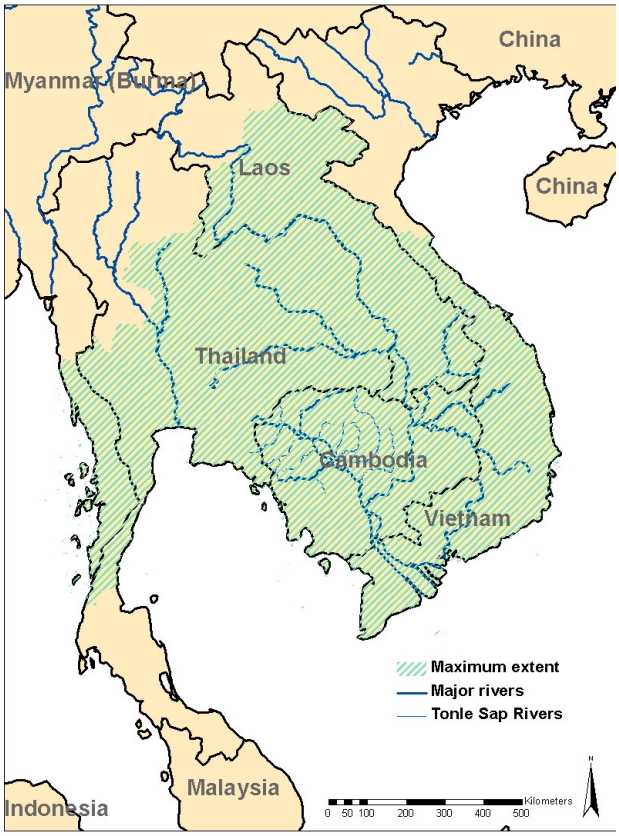
Jayavarman II is considered to have established the Khmer kingdom in the early 9th century CE at Roluos, near present day Angkor, on the northern shore of the Tonle Sap. The capital moved in the late 9th century to sites around Phnom Bakheng, the designated centre of Angkor. Successive rulers built impressive temple-mausolea and large rectangular reservoirs, or *baray*.

While Jayavarman II's kingdom continued from earlier monarchies, there is a distinct discontinuity between the earlier competing polities of 'Chenla', as the area of central Cambodia was known to the Chinese, and the empire centred at Angkor that developed from the 9th century (Mabbett and Chandler 1996: 88; Vickery 1998: 84-85). The kingdom which emerged and which, within a century and a half, could be deemed to have had the markings of an empire, endured for six centuries. While the empire is known to have experienced various political disturbances — attacks from outside and internal revolts which sometimes resulted in the overthrow of a dynasty — its survival must have depended on successful strategies which could not simply have been imposed despotically by rulers upon compliant subjects.

At its greatest extent at the end of the 12th century, the Khmer Empire covered most of mainland Southeast Asia, including what is now Cambodia, much of Thailand and the southern parts of Vietnam and Laos (Figure 3). Much of the settled region is on flat land, which, together with the tropical climate, makes rice cultivation relatively easy. Three quarters of the cultivated areas are covered by bunded rice fields.

The Annamite, Elephant and Cardamom mountain chains in a sense acted as boundaries to Khmer settlement (Figure 4). The Dangrek Range north of Angkor, between Cambodia and Thailand, extending about 130 km, did not restrict communication between the Tonle Sap floodplain and the upland area, as is evidenced by the archaeological and epigraphic record of

the Pre-Angkorian period (Groslier 1998[1986]: 256-257; Hendrickson 2007: 92). Beyond the Dangreks to the north lies the Khorat Plateau, the 'second home' of the Angkorian Khmer (Groslier 1998[1986]: 261). The plateau is drained by the Mun and Chi Rivers, which flow east into the Mekong.




source: http://ecaimaps.berkeley.edu/animations/2003_03_khmer_animation.swf

Figure 3 Currently proposed maximum extent of Angkorian Empire, c. 1206-1217

Settlement first concentrated in the south and later in the Angkorian period in the centre and north. It was always directly influenced by the geography, as were communications for administration, defence, access to resources and, ultimately, the mode of control by the Khmer rulers. The Mekong 'corridor' has been vital to the formation and sustenance of the Khmer state. The Mekong River system, though impassable to river traffic at the Khone Falls on the Laos-Cambodia border, has been the predominant influence on settlement in the region, and is so today, as can be seen by the population densities in the region (Appendix 13). Groslier (1998[1986]: 256) depicts the geography of Cambodia as a huge basin dominated by plains, 'only broken by the spread-eagled "Quatre-bras" ' consisting of the Mekong in two directions, the Bassac and the Tonle Sap, with Phnom Penh in the centre. He

has noted a core area, or heartland, of the Khmer Empire, in the lower Mekong River catchment, lying between the Mun valley, the Tonle Sap and the middle Mekong (ibid., 260-261). Much Angkorian settlement was within this core area, in the floodplain around the Tonle Sap Lake and areas connected to it by a number of navigable rivers, making the Lake a natural focus for water transport (Hendrickson 2007: 92).


Figure 4 Map showing rivers and mountain ranges

## 1.3 Research agendas

### 1.3.1 Indianisation and colonisation

At the beginning of the first millennium CE, immigrants, traders and travellers brought features of Indian culture to Southeast Asia, and some of these were absorbed locally. The impact may

have been largely through traders[2] (e.g. de Casparis 1961: 247-248; Wolters 1967: 64; 246; Wheatley 1975: 238-42; Mabbett 1977b: 346; Junker 2004: 233; Miksic 2004: 238) or educated Brahmins invited by local rulers (van Leur 1955: 97-8; Cœdès 1968[1964]: 23), but in the process Southeast Asian rulers began to make use of 'Indian concepts' to legitimise their political status, and also to stratify the society (van Leur 1955: 104; Wheatley 1961: 186; Wolters 1982: 10; 1983: 298-303; Terwiel 1996: 321-22). For example, the presence of Indian Brahmins in courts and the possession of inscriptions were used by elites to enhance their prestige (van Leur 1955: 98; Kulke 1990: 18). Stone inscriptions were thought likely to contain spiritual potency, as were religious manuscripts as late as the 19th century in many parts of Southeast Asia (Edwards 2007: 104-5).

Southeast Asians apparently selected material culture and interpreted Indian ideas to suit their own ways (Bellina and Glover 2004: 73-83). This is seen in the adoption of Indian religious concepts. Wheatley (1983: 295), for example, underscoring the dynamic relationship between Indian ideas and indigenous culture in the Cambodian context, has described Śaivite devotionalism as 'a powerful means of intensifying chiefly charisma without necessarily effecting radical change in the religious and ethical conceptions of early Khmer society'. Mus (1975[1934]) and others (e.g. Groslier 1958: 116; 1998[1974]: 127; Maxwell 2007: 115) have argued that the Brahman and Buddhist deities of Indian religions were acceptable because they accorded with Southeast Asian indigenous spiritual concepts, in particular animistic beliefs such as in agrarian divinities and water spirits, which were typically associated with particular locations, and which could be expressed through the language and thought of India. The similar concepts of indigenous divinities dwelling in natural stone objects and of natural *liṅga* as the loci of Śiva manifestations, exemplify this association.

A primary concern of early epigraphic researchers was to produce a chronology, in particular of Khmer monarchs, which would be the basis of a linear historical narrative. Much of the research (Barth and Bergaigne 1885-1893; Cœdès 1937-1966; Dupont 1952; Majumdar 1953: xvi; Briggs 1999[1951]) expressed greater interest in the content of the Sanskrit parts of the inscriptions which gave details of the royal chronologies than in the Khmer language parts which provided most of the information on the political economy. Although contributing significantly to the establishment of an historical chronology for the Khmer empire, the Sanskrit scholars regarded India as the external source of Southeast Asian cultural development, including its religions, architecture and statehood (Cœdès 1968[1964]: xvi-xvii; 16-32; 252-4; Mabbett 1977b; Vickery 1998: 38-45; 1999: 3; [1984]1999: 1-4). These views were current during the period of French colonial rule in Indochina, in a climate of European cultural

[2] Indian penetration into Southeast Asia was facilitated by the reorientation of Indian commercial interests resulting from changing political conditions in the Mediterranean and Central Asia. The trading voyages were aided by innovation in ship construction; ships were now rigged so that they could sail closer to the wind (Cœdès 1968: 20-21; Wheatley, 1961: 188-9).

superiority over the East, with the wish to restore some of Cambodia's past glory justifying their actions (Saïd 1978: 40-41; Kulke 1990: 10; 1994: 158; Edwards 2005: 13-16; 23). An Indian perspective was that Cambodia had been a colony of India (Majumdar 1953: xviii; 1980). Khmer culture was often depicted in terms of idealised medieval Indian models, whereas indigenous Khmer traits, not to mention their transformations, were overlooked until recent times (e.g. Polkinghorne 2007).

Since Sanskrit, the language of the texts that Sanskritists such as Barth and Bergaigne (1885-1893) were translating, was one of the Indo-European languages, often considered to be the most evolved of the language families, this language was seen as the mechanism of Indian influence on Southeast Asia, the conveyor of its culture and presumably the link between the cultures (Polkinghorne 2007: 61). Several scholars have noted the high quality of some of the Khmer-produced Sanskrit texts, several authored by kings or Brahmins (Mabbett 1977b: 432; Wheatley 1983: 307; Pollock 1996: 220; Dagens 2003: 217-20; Sanderson 2003-4: 380-82). Indian ideals and religious, political and legal treatises referred to in the Cambodian texts were interpreted as being implemented literally (Majumdar 1953: xvii-xviii; Cœdès 1968[1964]: 253-255; Sahai 1970). Even now, although Khmer society is today also compared with other pre-colonial societies in Asia and elsewhere (Vickery 1998: 7), there remains a tendency to view key features of the Angkorian culture as derivative of the Indian (ibid., 6; 51-60). A recent expression of this is Gaucher's (2004: 58-86) view that the design of Angkor Thom was influenced by what he considers to have been an Indian 'ideal' model.

In this intellectual milieu, there has been relatively little research linking the various aspects of economic life within Khmer societies, and this is still particularly so for the Angkorian period. For example, the economic circumstances of a small but significant section of the population — the temple workers — have been little considered because it was felt that not a great deal could be learned about their roles or the wider society of which they were part. Aymonier (1900-1904 I: 408), for example, refers somewhat dismissively to the 'interminable name lists' in inscription K. 183/ 928[3)] at Koh Ker.[4] Cœdès (1968[1964]: xix), who considered that establishing a chronological framework was essential for the study of Angkorian civilisation, commented that the main interest of inscription K. 956/ 10th c. was its reference to a ceremony performed by Jayavarman II (1964: 129). In fact, it traces in detail the history of various lands, foundations and associated families (Vickery 1998: 16), thus providing an insight into the history of territorial organisation in its area and a substantive link to an emerging

[3] The alphanumeric index of an inscription is followed by its latest CE date or date range (e.g. K. 348/ 954).

[4] Cœdès (1937: 52-54) provided a partial list of *sruk* (villages, districts) from where the workers came. The lists of names are yet to be published.

archaeological record, as well as significant information on the establishment and maintenance of temples.

### 1.3.2 Indigenous innovation

The post-colonial period saw an increasing interest in, and recognition of the continuity and uniqueness of indigenous cultures (van Leur 1955: 102; 148; 169; Wolters 1982: 9). By the mid 20th century, it was acknowledged that indigenous cultures had had their own innovation and development (Cœdès 1968[1964]: 33; Wales 1974: 18). For example, Vickery's (1998) Pre-Angkor study showed that the political and social hierarchies that developed were the outcome of internal transformations, not Indian influence. Thus, the Pre-Angkorian *poñ* who adopted Indic names were the same ruling chiefs of early communities (ibid., 19-21).

Numerous scholars have studied the transmission of Indian cultural features and the extent to which they were adopted in Southeast Asia, including by the Khmer (Wheatley 1961; Cœdès 1968[1964]: 27-33; 1975; Mabbett 1977b; 1983; Kulke 1990; 1997; Vickery 1998: 58; Smith 1999: 10-18; Sanderson 2003-4). From their findings, it became increasingly clear that Khmer cultural expressions did not have the same meanings as in India. Moreover, it is now understood that India as well was undergoing 'Indianisation' at the same time as Southeast Asia was being transformed (Pollock 1996: 234; Smith 1999: 3; Maxwell 2007: 75). For example, Sanderson (2003-4: 353) argues that the Indian Śaiva texts, said to have prescribed religious practice in Cambodia, were superseded on the Indian subcontinent soon after their transference to Southeast Asia. Moreover, they originally provided only a broad framework of practice, not an elaboration. In addition, the form or the meanings of words at times deviates from that of the original Indian texts (Bhattacharya 1997: 45; Filliozat 2003: 14). Despite the assertions in the Khmer corpus texts, we should not assume that Khmer Hinduism and Buddhism were Indian Hinduism and Buddhism (Maxwell 2007: 74), and it is important to note that the Khmer 'caste' system (*varṇa*) was not identical to the Indian caste system having the same designation. In fact they were not divisions of the general population, but an elite stratum (Chakravarti 1972-73; Mabbett 1977).

While the early inscriptions seem to describe Indian political models, there is no evidence that declarations of Indian ideals of governance were actually implemented, even in India (Vickery 1998: 418). It has been remarked that the extent to which even the elite understood the texts was probably limited (e.g. Cœdès 1968[1964]: 33; Jacques 1986: 328; Pollock 1996: 223). Sahai (1970; 1976; 1977a; 1977b; 1978) has documented many of the concepts of the political economy recorded by the inscriptions, dealing separately with different areas of administration: central, territorial, judicial and fiscal. His treatment was somewhat synchronic and more focused on the institutions than on a working system, but it was an important move away from the focus of earlier Sanskritists. Chakravarti's (1980) commentary for his translation

of K. 235/ 1052, aptly subtitled 'A study in Indo-Khmer civilization', dealt with political and social institutions, including the controversial issues of divisions of society, the hierarchy of titles, the *devarāja* cult and units of measurement. However, both Sahai and Chakravarti still considered that the Khmer elite would have interpreted and acted upon the Indian treatises in much the same spirit as Indians did.

An increasing body of evidence indicates that Southeast Asian cultures were developing state level organisation before 'Indianisation'. Elements of an indigenous character are apparent in Southeast Asian architecture, sculpture, politics, law and social structures. For example, excavations at Oc Eo in south Cambodia-Vietnam, which flourished during the early 1st millennium, have yielded over 10,000 imported and locally manufactured objects (Malleret 1959-62: 60-63; Manguin 2004: 291-92; Stark 2006: 100), pointing to indigenous technology and commerce. It is now thought that Asian sea trade resulted from Southeast Asian technological proficiency for ship building (Manguin 1980; Kulke 1990: 22; Smith 1999: 6). It is also evident that many of the factors that were associated with 'urbanism' existed before contact with Indian cultural influences (Miksic 2001; Stark 2006: 100-101). Indeed, Southeast Asian elites had long taken advantage of exotic symbols to legitimise their authority (e.g. Kulke 1990: 18-20; Grave 1995; Mabbett 1997: 350-51; Smith 1999: 11; James 2003).

The latter part of the 20th century saw some new perspectives gaining prevalence, as the complex interrelationships between the many strands of political economies were better understood. This is seen in the more elaborate models of states and in the trend towards multi-disciplinary studies. Today it is widely accepted that Khmer culture developed largely out of indigenous influences. However, it remains that much of our understanding of the political economy, especially of the Angkorian period, derives from studies whose scope was limited, in part due to the influence of the Sanskritists. As seen in this thesis, the Khmer inscriptions have more to offer.

### 1.3.3 Value of the epigraphic data for studying Angkor's political economy

Views still differ about the extent to which the inscriptions may be relied on to understand the Khmer economy. One group of scholars has argued that they do not inform us about the economy because they are only a component of it. Wheatley (1975: 258) has remarked:

> Because, generally speaking, these records preserve the deeds and values of elites, they emphasise those institutions that were devised for ritual, administrative, governmental, and to some extent educative, purposes.

According to Jacques (2002: 3):

> The inscribed stones and objects are exclusively religious: with the temple, its gods, or the properties of gods, as their subject. At times, the inscriptions intruded into 'civil' life which was closely bound up with religious life, but this deviation was really no more than

> accidental. The inscriptions are an essential contribution to the history of the land of the Khmers, but they must not be asked to provide more than they can deliver: the inscriptions are not history textbooks and only say what matters to them.

Michael Vickery (1998: 307) takes a somewhat different position, arguing that although the inscriptions 'provide only a fragmentary picture of the [economy], it is legitimate to draw inferences about the economic and social relationships which they reflect'. This view is adopted. Moreover, in this study, all the relevant epigraphic data is analysed in aggregate to draw inferences about the wider political economy from broad trends.

While primarily text-based, the study also draws upon the research of other fields. The occasional publication of a new text will provide additional insights into the political economy of Angkor, but the total number of inscriptions available to researchers seems likely to remain relatively small. This suggests that further understanding of Angkor's political economy will need to come about through combining archaeological studies and textual analyses. Pottier's (2003) study of the relationship between epigraphic accounts of Buddhist *āśrama* at Angkor and the surrounding archaeological landscape illustrates the value of integrating archaeological and epigraphic studies. The integration of other sources of historical data is also vital. These include Chinese reports about the Khmer pertaining largely to trade, beginning in the Funan period in the 3rd century CE (Pelliot 1903; Stark 1998) and occurring intermittently through to the Post-Angkorian period[5] (Pelliot 1903; Wheatley 1959; Mabbett 1977; Vickery 1998; 2003-4). Newly emerging data provided by modern techniques, such as remote sensing, palynology, dating technologies and underground sensing (e.g. Fletcher, Evans et al. 2004; Evans, Pottier et al. 2007; Evans 2007; Hendrickson 2007; Penny, Pottier et al. 2007[2005]) are now also contributing to a composite picture of Angkor's changing political economy. The many influences affecting the development of this political economy date back to well before Angkor's formation from Pre-Angkorian polities. These inevitably included resistance from some of those affected by the increased power exercised by the emerging state.

## 1.4 Power and early states

### 1.4.1 The exercise of power

According to Claessen and van de Velde (1985: 256-257), a new polity, such as the Angkorian state, will inevitably be modified if it is to remain intact. The success of the initial organisational

[5] Some of these have been described as less than reliable, showing cultural bias, or being based on second or third hand reports – a critique which might be levelled at many historical accounts. Bourdonneau (2003) argues that Chinese sources from the 5th century CE, following China's exposure to Buddhist thought and increased trade with Southeast Asia, would have recorded the society with some accuracy.

structure will engender responses in those involved, be they changes in wealth or inequality, opposition to change, or engagement with neighbours. For Angkor to survive such responses, it had to adapt and its organisational structure had to change — in turn setting off a new set of actions and responses, so that as long as Angkor survived as an integral unit, it had to continually adjust.

A state's operation is a function of the exercise of different types of power by ruling elites, controlling the division into social classes. Skalnik (1978: 597-598) tentatively suggests five 'fundamental spheres' for analysing the processes which help to maintain the integrity of the state against internal and external threats, namely administrative, economic, ideological, military and political. These categories are formulated for analytical purposes only, as they are in fact intertwined.

Claessen and van de Velde (1985: 255-256) introduced their *Complex Interaction model* for the development of socio-political organisation and leadership, proposing that the socio-cultural system consists of three subsystems: socio-political, economic and ideological:

> (1) the societal format (societal size, population distribution, infrastructure); (2) the set of economic factors (resources, technology, including magic and applied science, relations of production, which will generally include the kinship system); and (3) the set of ideological factors (myths, religion, and science; law and norms, including kinship ideology).

Mann (1986: 2) has described societies as 'multiple overlapping and intersecting socio-spatial networks of power' (see also Claessen and van de Velde 1985: 256). He suggests that their structures and histories are best explained in terms of the interrelations of four sources of power: political, economic, military and ideological, which are employed by ruling elites in different combinations for controlling people and territories. While military strength was used to gain control over new areas, political power, economic power and ideology[6] were used to sustain control, thereby economising on the need for force (ibid., 1-32).

Claessen and van de Velde (1987: 6; see also Claessen and van de Velde 1985: 253), argued that war and conquest should have a 'secondary role as a corollary of economic, or possibly, ideological competition.' Following this logic, the exercise of power is categorised in this thesis into three basic types: political, economic and ideological, following Gledhill and Rowlands (1982: 145). However, as also recognised by these authors, the components of the three categories of power are interrelated. Thus, assigning a particular component to a given

[6] The role of ideology has been widely discussed: its function in transmitting concepts of kingly power (Pollock 1996); monumental architecture (Trigger 1990); in Meso America (Blanton, Feinman et al 1996; Brumfiel 2001; Morris 1998); in Rome (Wolf 2001); in Vijyanagara (Fritz 1986; Sinopoli and Morrison 1995); and in Southeast Asia (Geertz 1980; Heine-Geldern 1956; Tambiah 1977; van Leur 1955; Wheatley 1983; Wolters 1982).

category can be somewhat subjective and can depend on the scope of the question being addressed, and the type of information available. For example in this study, taxation, normally considered an economic matter, is analysed as an ideological, rather than as an economic process, since taxation immunities to the foundations, the issue being examined here, served indirectly to promulgate state ideology. On the other hand, status and hierarchy, normally factors in ideological control, are discussed here in the context of economic processes, since they are observed as affecting payments in transactions associated with temple foundations. In order to elicit those interrelated factors which are applicable to Angkor, it is useful to assess various models which have been used previously to represent its behaviour and that of similar states.

### 1.4.2 Models of early states

A number of models of state integration and development used to represent the Khmer state were originally developed to explain the diagnostic features of medieval European, and South and Southeast Asian states. Some models, discussed in Section 2.3, were formulated to represent a specific polity, location or time, and are considered not relevant to the Khmer state. They may take account of temporal variations or spatial differences. Some may be primarily political, others largely economic, still others, ideological. Yet while these models fall short of the need to consider at least three types of interacting modes of control when studying states such as Angkor, they do highlight matters for consideration when eliciting information from the Khmer epigraphy.

Karl Marx' theories have had an important influence on the study of political economies. His AMP (Asiatic Mode of Production) was a model of an early form of class society. Defined as a pre-feudal stage of state development in societies such as in India and China, it was introduced to distinguish 'Asiatic' from other pre-capitalist forms. Sedov (1967; 1969; 1978), who viewed Khmer society in terms of the AMP, was the first to examine the Khmer economic data in detail. He argued that there was a hierarchy of linked temples from village (or personal) temples through to royal temples. The concept of the temple hierarchy, which was developed further by Hall (1985), is investigated in the thesis. Vickery (1998: 16) has argued for Angkor to be an AMP-like society, though one having some characteristically Southeast Asian modes of production. His work (e.g. 1985; 1996; 1998; 1999a; 2002; 2005; 2006; [1984]1999), in marked contrast to Khmer studies of the earlier Sanskrit school, is concerned with economic, social and political structures and examines changes undergone by Khmer society.

Wallerstein (1974), also of the Marxist school, has proposed the *Core-Periphery model* which recognises spatial differences in the methods of control between core areas and more peripheral regions. In recognition of the related issue of the non-permanence of state boundaries, some models of loosely integrated states have been formulated — the

*Segmentary State* (Southall 1953; Sahlins 1972; Stein 1980; 1995); the *Theatre State model* (Tambiah 1977; Geertz 1980) stressing the use of ideology in asserting royal authority; and the *Mandala model* , combining the impermanence of states and the reliance of rulers on the allegiance of the elites of rival polities. The last model has been used widely to depict the Angkorian state (Mabbett 1978; Wolters 1982; Hall 1985; Hagesteijn 1989; Higham 1989).

Various researchers have articulated the view that the activities of states have an economic basis and are thus linked to resources (Smith 1976; Brumfiel and Earle 1987; Smith 2004). *World Systems* modelling (Wallerstein 1974; Kohl 1987; Abu-Lughod 1989; Gills and Frank 1993; Frank 1998), which incorporates the *Core-Periphery model*, examines the power relations between centres of economic growth or capital accumulation in central dominant polities and in subordinate or peripheral regions. In this study, the control of resources is seen as being the key factor in a state's political economy. The *Territorial-Hegemonic model*, which incorporates strategies ranging from low control-low extraction to high control-high extraction of resources, is flexible enough to represent the range of alternative forms of power that are available to elite decision makers (Luttwak 1976: 192; Hassig 1988: 100-101; D'Altroy 1992: 19-24). When used in conjunction with a *Networks model* for assessing systems such as communications, the *Territorial-Hegemonic model* can provide a powerful tool for analysing the behaviour of empires such as Angkor.

Two models apply specifically to Angkor (Section 2.4). Hall (1985) combined Sedov's *Temple Hierarchy model* and the *Mandala model*, also using economic theory derived from Polanyi (1944; Polanyi, Arensberg et al. 1957; Polanyi and Rotstein 1966; 1975), who regarded the economies of archaic societies as essentially redistributive and lacking true markets. He stressed the use of ideology, through the redistribution of 'symbolic capital', in the state's integration. Kulke (1986; 1995) developed the primarily political *Processual model* [7] for South and Southeast Asia, using the Khmer Empire to illustrate salient features. The model outlined the state's development from chiefdom through to the imperial kingdom. While both are clearly pertinent to the Angkorian state, neither the *Temple Hierarchy model*, which deals with ideological and economic aspects, nor the *Processual model,* which is essentially political, explains how the state's political economy was integrated, in particular how resources were acquired, used and distributed.

## 1.5 Aim of research and thesis questions

The study aims to identify processes and strategies used to sustain the Khmer empire. Following the work of Michael Vickery, a supplementary objective is to demonstrate that the Khmer epigraphy can play a greater role in discerning features of the political economy than it

[7] Written as 'processural' in Kulke (1995); spelling adopted here is 'processual'.

has to date. This thesis demonstrates a method complementary to close reading of the texts for studying the inscriptions, entailing a broad analysis of material and non-material inscription data which are treated as quantifiable discrete items. Other historical data, from inscriptions, chronicles and records of trade and trade missions of other states are also included. Documented evidence from contemporary states can potentially suggest analogies or contrasts where the Khmer inscriptions are silent or ambiguous. The findings challenge a few currently held views (e.g. that transactions were conducted without a unit of account), corroborate others (e.g. that officials based in regional areas acted in multiple roles, including the collection of levies), and provide some additional insights into the political economy of the Khmer state (e.g. that there were clusters of temple sites of long duration together forming communication corridors). The research design has been formulated progressively, starting with recognition of the need for a new approach to studying the Khmer political economy from the textual data. In order to ascertain where the texts had more to offer, a pilot study, using Microsoft EXCEL as a database, was undertaken to assess the feasibility of collating and analysing easily accessible inscription data. About 200 Pre-Angkorian and Angkorian period inscriptions were studied. Material items, together with their numerical or compositional data, were aggregated from lists of donations and temple inventories to discern their temporal distributions. The results indicated significant differences in the temple economy between the Pre-Angkorian and Angkorian periods. Some sections of the data showed consistent relationships, while others indicated marked differences. The results also suggested a number of provisional categories for the material items which might assist in analysis of the data. The pilot study indicated that a detailed investigation of specific aspects of the Khmer political economy, using evidence principally from the temple inscriptions, could provide useful insights. The idea of examining textual socio-economic data in terms of frequency of occurrence, trends over time, spatial location, etc in the same way as an archaeological approach might study material data, arose from this pilot study.

A relational database for storing, sorting and analysing the Khmer inscription data is used in conjunction with other analytical tools, such as Geographic Information Systems (GIS) and spreadsheets. The topic is approached at different scales of analysis and behaviour: at the scale of empire in the context of other empires and large states (by observing its interactions, especially trade and conflicts with other polities); at the level of its internal political and economic organisation (by examining its methods of taxation, administration, communications, monetisation and marketisation); and at the scale of its micro-political economy (by analysis of material data, human actions and individual transactions). The operation of an empire consists of various interacting processes. For example, the utilisation of a valuable natural resource might lead to the establishment of new urban areas, transportation links, taxation strategies and local power structures. Furthermore, an empire does not operate in isolation, so that an

event such as an altered trade route of one state may result in changed trading patterns and new ways of distributing goods in another state. The recognition that the political economy of an empire is not static is fundamental to this study, which seeks to link the temporal and spatial changes observed in the Khmer inscription data with events in the wider political economy.

Actions of ruling elites ensure the production, acquisition, transport, storage and distribution of resources, both subsistence and prestige goods. The issues investigated are largely concerned with the movement of wealth and the exercise of power. The areas of enquiry are: political processes (the administration and communications); economic processes (money, markets and trade); and ideological processes (the relationship between the state and the temple foundations). In reality, as already noted, these are all components of a single political economy, but for practical purposes, each component is analysed separately. A key aspect of the study is the relationship between Angkor the city and its empire, often incorrectly taken to be coterminous — in particular the capacity of rulers to administer regions and mobilise resources within the empire.

The broad question addressed by this study is summarised as:

*What processes and strategies contributed to sustaining Angkor's empire?*

Better documented pre-modern societies, in particular those bearing similarities to the Khmer state, provide potential comparisons with Angkor to be investigated. Other Indic polities — in Java between the 8th and 14th centuries (Southeast Asian; insular; monetised with coinage and marketised), 'classical' Pagan of the 11th-13th century (Southeast Asian; inland agrarian; trending towards monetisation), the 9th-13th century Chola dynasty and Vijayanagara between the 14th and 16th centuries (South Asian; monetised with coinage and marketised) — can be compared and contrasted with Angkor. The South American 15th-16th century Inkan Empire, differing culturally and ecologically in many ways from any in Southeast Asia, is considered also, because it was neither monetised nor marketised and was highly controlled, and therefore may have resembled patterns of behaviour that have been ascribed to Angkor. An important issue in undertaking this study is to discern ways in which the Khmer organised themselves much the same as, or differently from these analogous states.

### 1.5.1 Political processes

Imperial states employ a range of strategies which can be considered as predominantly political, including alliance formation and incorporation of local elites to assist with administration. This thesis examines evidence of administration of the state through officialdom, taxation and the judicial system. Communications, which are essential for

administration, but also for trade, ideology and defence, are discussed here under the category of political processes.

Strategies of control are not explicit in the texts. The inscriptions mention various characteristics, such as specific titles and roles of officials, which although often not well understood, could be regarded as political markers. An examination of the nature of Angkor's political control over its subject populations is addressed through spatial and temporal analyses of the distributions of selected epigraphic indicators. The broad question for assessing Angkor's exercise of political power, namely:

*How did the Khmer state's control and influence vary spatially and temporally?*

seeks to address issues relating to the extent and variation of centralised administration, the effectiveness of the communication network and how they both developed.

### 1.5.2 Economic processes

The significance of Angkor's lack of money, the purported absence of a unit of account and the claims that Angkor was disinterested in commerce are evaluated. One explanation for these phenomena is that the economy was controlled and depended on redistribution, rather than on market principles. The records of material data in temple and transaction contexts are re-examined in the context of the epigraphic genre.

The following question addresses the issue:

*In the absence of money, how did the Khmer economy function?*

This question encompasses a number of associated questions relating to: the evidence for redistribution in the Khmer economy; temporal changes in the material economy; differences between the temple sector and the secular sectors of the economy; and engagement in international commerce.

### 1.5.3 Ideological processes – the state and the religious foundations

A widely accepted model of state economic and symbolic integration is centred on a model of material and non-material redistribution through a temple hierarchy. It depicts the Khmer state as having been integrated through ideology and the movement of small quantities of resources through amalgamated temples. Individuals were encouraged to establish foundations through certain privileges, such as immunities from state and local levies. Such a model, however, leaves many unanswered questions about production and distribution of resources including infrastructure, state production and taxation collection. In examining these issues, this study considers the following broad question:

*What role did the religious foundations play in the integration of the Khmer state?*

Investigation of this question entails: enquiry into the evidence for a hierarchy of temples and its function; analysis of the role foundations played in collecting state taxes; examination of the practice of granting immunities to foundations; and analysis of the practice of amalgamating religious foundations.

## 1.6 Structure of thesis

Research in other regions has highlighted the importance of studying spatial and temporal variations in the processes of imperial political economies (e.g. D'Altroy 1992; Sinopoli 1995; Morrison 2001; 2001; Stein 2001). These approaches are adopted for studying Angkor's political economy to discern the patterns of change which occurred during the recorded history of the state and how the state was sustained. How Angkor's political economy compared with those of other analogous states is also assessed. Specific questions about the operation of the Khmer state arising from critiques of some models of empires and large states, and for Angkor in particular are formulated in Chapter 2. A number of the models, some developed for other regions, tend to emphasise one aspect only of a state's development – political, ideological or economic. These models may overlook spatial or temporal variations or important economic considerations, including the production and distribution of resources and — of relevance to this study — the nature of the polity's commercialisation. The shortcomings of these various models underlie some of the questions of this thesis. Two models developed specifically for Angkor are outlined: one, the '*Temple Hierarchy' model*, attempts to show how a network of linked temples helped to integrate the state economically and ideologically; the other, the *Processual model*, depicts the transformation from chiefdom to imperial kingdom. More recent conceptions have depicted the relations within and between states as networks, or links between nodes. This may be used for transportation networks, as well as power relations. The *Territorial-Hegemonic model* is used as a frame of reference here in conjunction with the *Networks* concepts to view the spatial and temporal variations of imperial strategies along a spectrum ranging from low control-low extraction to high control-high extraction of resources.

To set the scene for the study, an overview of some of the resources which underpinned Angkor's success over six centuries, be they physical, biological or social, natural or artificial, is presented in Chapter 3. Much of this material is not explicit in the inscriptions. The chapter outlines some of the discussion about Angkor's social structure, land tenure, its natural resources, rice production and infrastructure, including communication networks and irrigation. A major component of the political economy, the communications network, and its relationship to regional centres, is taken up again in Chapter 6. Many of the issues discussed in Chapter 3 are still the subject of current debate and we are far from fully understanding Angkorian society and its economy.

Theories on archaic money, markets and trade and the relationships between them are examined in Chapter 4, so as to provide a background for an examination of Angkor's lack of money, the enigmatic absence of an obvious unit of account and apparent disinterest in markets and trading. Karl Polanyi's views of a non-market economy, exchanges based on reciprocity and economies functioning through redistribution are still being cited to account for aspects of Angkor's economy, including the view that the economy was centrally administered. The chapter outlines hypotheses to explain Angkor's seemingly low level of commercialisation and the degree of central regulation of the economy, and examines the extent of the state's involvement in foreign trade. The evidence for Angkor is compared with that for similar states.

In Chapter 5, the archaeological approach to the Khmer epigraphic data is explained. Frequently cited impediments to the use of the inscriptions in research — the limited amount of available data, difficulties of interpretation of the texts and of categorisation of data — are outlined. Whereas the inscriptions have previously been considered capable only of providing a snapshot of an elite section of Khmer society, an analysis of the aggregated data helps to overcome some of these obstacles, by highlighting overall trends and anomalies in the data and placing them in a larger and inclusive spatial and temporal context. The role of a database in the analytic procedure is set out.

To examine the claim that Angkor was decentralised, distributions of epigraphic indicators of central influence (royal inscriptions and references to royal actions in non-royal inscriptions) and of other elite influence (non-royal inscriptions and the titles of officials) are examined in Chapter 6, to observe variations over time and distance from Angkor. The influence is seen to diminish with distance from the capital Angkor by gradations, and to fluctuate over time. The effectiveness of an integrated Khmer communication network of roads and rivers is then assessed through an examination of the spatial and temporal distributions of the inscription sites to identify clusters of sites and inscriptions, which might indicate strategically important regional centres. The distributions of inscription sites and indicators suggest that beyond a core area of 25km out from Angkor, the state's administration was decentralised. This communications network is viewed in the context of strategic needs, such as the location of resources and access to external trade routes.

In Chapter 7, the epigraphic and historical evidence of Angkor's engagement in foreign trade is examined, to seek explanations for Angkor's lack of money and reputed low level of commercialisation. The idea that Angkor had a command economy is rejected. Patterns in the records of objects in temple inventories and exchanges are compared, and material changes in the economy over time are discerned. These indicate a considerable increase in wealth between the Pre-Angkorian and Angkorian periods. The lexicon used to describe the recorded transactions is examined and shown to represent similar commercial concepts in both periods, suggesting a unit of account was not abandoned. Differences between the temple inventory

items and exchange objects indicate that commercial values were important. As the transactions depicted in the inscriptions do not represent the wider Khmer economy, economic matters are masked by the genre of the texts, in which merit, status and hierarchy are stressed.

To assess some widely held views on the integration of the Khmer state through ideology, the relationships between the state, the founders and the religious foundations are examined in Chapter 8. The roles of the officials in state and local administration are examined and the role of temples in the collection of state taxes is assessed. The idea of a hierarchy of temples is explored through an analysis of the institution of joined foundations. It is found that deities with Indic titles were frequently joined to gods having indigenous titles, indicating some structure, though not necessarily a hierarchy of deities. The extent to which the joins were symbolic or pragmatic in the Angkorian period is partially resolved. The immunities granted to religious foundations by the rulers in the Angkorian period are also analysed, as these had the effect of linking the rulers, the foundations and the officials who were their founders. The absence of reports of immunities or joined foundations from the late 11$^{th}$ century is consistent with other evidence of changes in the political economy and here is interpreted as an attempt to curb the power of the officials.

Angkor was able to acquire wealth, to trade and to administer its territories for six centuries. The processes and strategies discerned in this study as helping to sustain the empire relate to: the effectiveness of the communications and trade network; the decentralised administration; the support of regional elites; the capacity to accumulate wealth and the promulgation of state ideology through a temple network. The cumulating loss of effectiveness of some of these eventually contributed to the weakening of the state. A synthesis in Chapter 9 draws together the research findings and other investigations to depict Angkor's varying political economy. The relative frequencies of royal and non-royal inscriptions are used to depict the political economy as cycles of influence of royal and non-royal factions, in conjunction with an overall trend to increasing central influence. Cycles of gains and losses of imperial territory are viewed in the context of these events.

Chapter 10, the conclusion, returns to the thesis question. It summarises the results of the study, highlighting new findings, previous opinions supported, and those which are not supported. Overall, the processes and strategies investigated in the study did not differ significantly from those of contemporary analogous polities. However, their forms and interactions were unique, to the extent that they depended on historical and geographic factors, and interactions between different interests within the empire, neighbouring polities and more distant trading partners. There are indications of one exception warranting further investigation, a feature of Angkor's political economy not yet found elsewhere — a system of

linked foundation deities, possibly arranged in a hierarchy, and functioning to convey state ideology.

## 1.7 Conclusion

While the focus of much recent research has changed, the translations and analyses of the Khmer corpus of inscriptions provided by the Sanskritists remains the basis for epigraphic studies today. Recent studies of the political economies of states, together with an acceptance of Khmer indigenous innovation in its history, have generated interest in how the Angkorian Empire might have functioned. Studies, such as those by Sedov, Sahai and Hall have set the foundations for later enquiries into the political economy. However, the Angkorian period political economy has been largely overlooked, because it was thought the temple inscriptions had little to say on this topic. Indeed, many aspects of the political, economic and ideological structures of the Angkorian period are not explicit in the inscriptions.

Vickery's work has demonstrated that the inscriptions are capable of providing a comprehensive account of the Khmer political economy, through analysis of the interrelated data in the epigraphy and observation of temporal variations. We can now complement close reading of the texts with analyses of the broad trends and anomalies in the epigraphic data to improve our understanding of how Angkor's whole political economy functioned. Depictions of Angkor have mostly depended on generalised models for Southeast Asia or India, and have tended to focus on political or ideological aspects of state integration, often with little regard for spatial or temporal variations and economic factors and activities. This study seeks to identify broad variations in material and socio-political epigraphic data, to suggest imperial strategies and their impact on the political economy. Some previously expressed views are assessed in the thesis — that the state was overly inflexible when compared with similar states; that it was not greatly concerned with international commerce; that it had a low degree of monetisation and marketisation; and that a hierarchy of linked deities was the basis of the state's ideological integration. The method proposed for eliciting additional information — analysing data aggregated from the corpus as a whole, in conjunction with archaeological and other historical data — contributes to a changed perception of Angkor as an empire, by showing it to have been less rigid and more engaged in commerce than depicted. It was a successful inland agrarian state, whose various processes and strategies gave it the resilience, for more than half a millennium, to meet such internal and external stresses as arguably are faced by all empires.

# 2 Debates about political economies: empires and large states

> The land that he protected was limited by the border with the Chinese and by the sea; as for his glory, like the garland of his qualities, like his knowledge and his prosperity, it was unlimited.
>
> K. 323: 54–56 (889 CE)

> Crossing now the Sea of Fresh Water, one reaches a place called Kan-p'ang (=Kompong, "landing-stage") which is less than six miles from the walled city. According to the *Description of the Barbarians* (*Chu-fan chih*, published in 1225) the kingdom extends for over 1750 miles. Travelling north from this point Champa can be reached in fifteen days of overland travel. Travelling southwest, one reaches Siam in fifteen days. Travelling south one finds oneself in ten days at P'an-yu, and to the east lies the ocean.
>
> (Zhou 1993[1297]: xviii)

## 2.1 Introduction

Empires are expansionist states of heterogeneous composition, formed by conquest or coercive incorporation of other polities of varying size and complexity. Their central authorities share two fundamental concerns: maintaining the security of the core polity, and extracting resources from the expanded territory (D'Altroy 1992: 9; Morrison 2001: 3; Sinopoli 2001: 444). Cultural transformation of the incorporated population may be an additional imperial goal or may be an indirect effect (Sinopoli 2001: 445). By these criteria, Angkor can be considered to have been an empire from the early 9th century to at least the end of the 13th century.

Early empires often employed similar strategies for acquiring and sustaining power, for example, the promulgation of imperial culture, religion and language and at times reliance on *corvée* (D'Altroy 1992: 10). Yet the characteristics of each empire depend on a variety of complex factors which are played out against each other. For example, the ways that imperial ideologies, such as histories, are transmitted, or the ways pre-existing socio-economic structures are incorporated into imperial structures vary with the empire (Alcock and Morrison 2001; Sinopoli 2001: 458-460). The primary aim of this study is to examine strategies used by the ethnically plural Angkorian state to sustain itself. Angkor's strategies need not correspond with those of other empires. Nor are they likely to be exhaustive, since this study relies on available sources of data.

There has been little use of Khmer textual data of the period for studying how Angkor functioned as an empire. Nor has Angkor been much included in discussions about 'pre-industrial' empires. The focus of research on major sites, monuments and inscriptions has meant relatively less emphasis on regional and environmental contexts and on the domestic

and international activities and relations that maintained this state. Until relatively recently, research on large states focused on areas of 'the Old World' such as Mesopotamia, Rome, South Asia, Egypt and China, which had been studied in greater depth (e.g. Stein 2001: 353). Comparative studies of political structure and economy rarely refer to Southeast Asian societies (Junker 2004: 225). Some views about Angkor, often based on theoretical models developed for other polities and geographical regions, may now need to be modified, in light of a growing body of data which differentiates Khmer cultural traits from others in the region.

## 2.2 The study of empires

Today, empires tend not to be regarded as definitive political entities having discrete and categorical properties, such as fixed boundaries or a particular political structure. Moreover, many features of empires have been regarded differently by their own societies: for example in the Roman Empire sovereignty was understood in terms of the ruling people, while in the Khmer Empire it was seen in terms of the lineage of the ruler. As Morrison has said, one should study empires as a set of processes, which might then be considered in terms of their own cultural contexts or behaviours. It is useful to look at features such as the boundaries between a state and its societies; and between the state and surrounding entities (Sinopoli 1994; Morrison 2001: 3-4). Decisions made by rulers of imperial states are often compromises. By studying the processes, we might learn about the conditions leading to decisions and compromises (Morrison 2001: 5. See also D'Altroy 1992). It follows that it is appropriate and potentially useful to compare specific features of the Khmer Empire, such as its level of monetisation, with other states, including empires, which behaved in generally similar ways.

Sinopoli (1994: 162-169) depicts imperial states as passing through three stages of development, whose time frame may be as short as the reign of a single king — expansion, consolidation and collapse. The courses followed in each broad stage will vary according to communications costs, resources, socio-political considerations and environmental factors. Expansion, often driven by charismatic rulers, may involve military action, coercion, diplomacy or a combination of these, usually occurs in stages, and may include reversals. 'Over-expansion' may lead to collapse or reorganisation. Consolidation entails the establishment of an imperial system of 'structural connections and dependencies', including administrative and ideological systems to ensure the movement of resources to the imperial rulers. Regional elites are often co-oped into the system to facilitate this process. Collapse, the disintegration of an imperial system, may be due to a variety of factors, including: the costs of maintaining territories exceeding the benefits; internal disunity; incursion; loss of territories; loss of trade routes; structural reorganisation of sections of the society; or environmental impacts (Tainter 1988; Yoffee and Cowgill 1988). According to Eisenstadt (1988: 242) the existence of societal

boundaries generates conflicts that may lead to change, transformation or decline. Since conflict is 'inherent' in society, groups opposed to the ruling elites may arise in the process. The collapse of states should be viewed 'as part of the continuous process of [institutional] boundary reconstruction'. It is not the end of social institutions, but commonly the beginning of new ones (ibid., 243). The growth and decline of states and empires can frequently be viewed as cyclic (see also Section 2.3.3).

There has been relatively little dialogue between researchers from different academic fields on the processes of empires (Sinopoli 2001: 443), and this has been so for Angkor until recently, with epigraphers rarely collaborating with archaeologists. The value of integrating studies, for example between textual and archaeological data, is increasingly being advocated (O'Connor 1988: 129-130; Morrison 2001: 6; Sinopoli 2001: 464-466; Stein 2001: 356; Smith 2004: 93). While comparison of different data sets may point to apparent contradictions, in particular the non-correspondence between archaeological and historical data (Stein 2001: 356; Fletcher 2004: 115) these can have the benefit of leading to new insights or interpretations.

## 2.3 Models of empires and large states pertinent to Angkor

The models discussed below offer theories of state integration and development, which have been applied to early Khmer polities and the Angkorian Empire. Some of these do not adequately account for geographic, dynamic, political or economic variability[8] or do not recognise the relationships between the political, economic and ideological effects of processes. Today, political economies are not seen to function in isolation, but rather as part of wider interdependent systems within and beyond the state, resulting from established circumstances and the actions of people — elites and others. It has been recognised that empires should be studied at varying scales and relationships across political boundaries, such as between empires, provinces, regional centres and villages (Naerssen 1976; Morrison and Sinopoli 1992: 337-341; Feinman 1998; Sinopoli 2001: 450-451; Stein 2001: 356; 369; Smith 2004: 77; 85). This should apply to written as well as to material data: analyses of texts should specify their scales of spatial, temporal and social concerns (Morrison and Lycett 1997; Morrison 2001: 7-8).

The models of specifically relevant empires and large states outlined here — the *Asiatic Mode of Production* (AMP); *Core-periphery* and *World Systems*; and models of loosely integrated polities — stress variously the dominance of political, ideological or economic means of control, which are generally accepted as the three key factors for sustaining a state. Two more recent complementary approaches to studying empires and large states, the use of *Networks*

[8] Early empires are today rarely characterised as centralised and bureaucratic (e.g. Eisenstadt 1963: 10-32), since this fails to take account of differences between the core of an empire and its periphery.

and the *Territorial-Hegemonic model*, resolve many of the issues presented by the earlier models, in that they are able to conceptualise variations within complex political economies over time and space. The models are useful for drawing attention to a number of issues relating to how Angkor maintained its integrity over six centuries. These issues have not been the focus of previous studies. Broadly, they concern temporal and spatial variations in the Khmer state's administration and its management of resources. More specifically, there are questions about the stability of the political structure, Angkor's participation in foreign trade, the role of the temples in state integration, and Angkor's ability to communicate throughout its territories.

### 2.3.1 Asiatic Mode of Production

Marx's (1973[1853]: 303-6) earliest form of class society, the AMP, was a stage in his initial theory for the development of states. It represented a pre-feudal stage[9] in societies such as in India and China where it was considered that large public works were produced by exploited labour (Krader 1975: 286-296). Soviet researchers looked at early Cambodian society in terms of the AMP.[10] Sedov (1967; 1969; 1978) used the inscriptions to study the Khmer Angkorian period economy and social structure, depicting it as a static society in which the majority of the population was exploited by the state. While Sedov's work provided foundations for later studies of Angkor's political economy (e.g. Hall 1985; Vickery 1998), it gave little consideration to temporal changes, for example between the Pre-Angkorian and Angkorian periods (Vickery 1998: 8).

The AMP was linked to Wittfogel's (1981[1957]) theory of Oriental Despotism, whereby a ruler controlled the irrigation system, legitimising himself through identification with deities (Heine-Geldern 1956: 6-11). This resonated with contemporary interest in the *devarāja* cult (e.g. Cœdès and Dupont 1992[1943]: 172-179) and in Cambodia some researchers argued that wet rice Indic states of Southeast Asia were hydraulic societies (e.g. Groslier 1998[1986]:

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[9] In Europe, the concept of feudalism, a stage in Marxist theory of state development between the AMP and capitalism, had been used to describe societies in the 10th–13th centuries. Proponents of the 'Indian school of Feudalism' (e.g. Karashima 2001; Mukhia 1981; Sharma 1985; Stein 1980) hold that the early medieval Hindu state was the result of a continuous process of fragmentation of a single state through feudalisation (Kulke 1986: 4). A debate about whether societies were or were not feudal, a concept originally applied to Europe, did not occur for Angkor as in India, because society was regarded as more patrimonial than feudal (Wheatley 1983: 319), the workers were often seen to be closer to slaves than serfs, and little was known about their relationship to the land.

[10] From Krader's (1975: 286-296) list of 24 features of the Asiatic Mode of Production (AMP), the following are deemed to be the most relevant to this study: state domination of agrarian production, with most people in villages; a ruling class and one of agricultural producers; production of only a small surplus, appropriated by the state; use by the state of the extracted surplus for public works; poor institutional networks linking villages; little circulation of money; villages as 'closed corporations'; unfree labour of villages; village community was unit of tax collection; despotic rule had little impact on villages; agriculture dependant on water control ; centralisation of water control management is not essential.

261). Wittfogel's theory has received considerable criticism (Wisseman Christie 1986: 66-67; Lansing 1991; Vickery 1998: 9-10; Hauser-Schäublin 2005), especially since it could be shown that large hydraulic works, while requiring the organisation of many workers, did not necessarily require despotic states. However, the AMP paradigm is still given credence by some. Vickery (1998: 7-16) has argued that AMP-like societies may pass through developmental stages from the primitive to the highly developed, albeit having different modes of production from those in Western Europe. In fact Vickery (ibid., 257) argues that the Chenla-Angkor periods in Cambodia represent the AMP in 'very nearly pure form'. Vickery's (1985; 1998; 1999a; 2005) work, in contrast to some earlier Marxist studies, is concerned with economic, social and political changes. His (1998) study from inscriptions of the society and institutions of the pre-9th century proposes explanations for the transition from the earlier Funan period to that of Pre-Angkorian Chenla, a period for which there is little historic evidence. The issue of state domination of agrarian production, one of Krader's features of the AMP listed in Footnote 10, is discussed in Sections 4.6.2 and 7.4.2.

### 2.3.2 Core-periphery and world systems

While the *AMP* focuses on the exploitation of a class (of workers), the *World Systems model* emphasises the exploitation between core and periphery regions. The concept of *Core-Periphery* focuses on the exploitation of subordinate polities (peripheries) by a central dominant one (the core). Peripheries tend to lack state organisation. Semi-peripheries are intermediate in economic development and political strength, and may deflect political pressures (Wallerstein 1974: 102; 349). Ruling elites are 'net consumers' of resources taken from peripheries which become relatively underdeveloped. Core-periphery structures are a key element of the *World Systems model.*

*World Systems models* seek links between centres of economic growth or capital accumulation. Wallerstein (1974) argues for there being only one 'World-System' of continuous capital accumulation starting in the 16th century.[11] Before that, there were a number of separate concurrent 'world systems', between which only luxury goods were traded. Wallerstein held that there are three principal patterns exhibited by the world system: core-periphery structures; alternating phases of economic expansion and contraction; and of hegemony and rivalry. Wallerstein was considered by others (e.g. Gills and Frank 1993: 298; Frank 1998: 52) to have underestimated the importance of capital accumulation through trade

[11] Frank and Gills speak of a single world system, while Wallerstein refers to world-systems, because he considers there to have been many up to the 16th century. For example, China or the Chinese empire has not been one system, but a number of successive ones. 'The modern World-System (or the capitalist 'world-economy') is one system among many, whose peculiar feature is that it has shown itself strong enough to destroy all others contemporaneous to it....' (Wallerstein, 1993: 294).

and markets prior to the capitalist period. Over the millennia, many important and long-lasting hegemonic or imperial powers, such as those of Mesopotamian empires, Persia, Rome, Tang and Song China, have depended not only on agricultural surplus, but on exchange of products traded over long distances — and their position of power was linked to their economic position within a world economy (Gills 1993: 125-127). World history may be analysed as a series of hegemonic reorganisations corresponding to cycles of capital accumulation (e.g. Abu-Lughod 1989; Frank and Gills 1993; Gills 1993).

Wallerstein's concept of 'semi-peripheries' acknowledges the fluidity of borders but does not allow for a range of political, military and economic relations from core to periphery,[12] or for negotiation between core and subject societies, though this tended to favour the core powers (Kohl 1987: 19-21). More recent archaeological studies call into question the idea of a large state autocratically controlled by a central authority. They argue that the unequal exchange between core and periphery populations has sometimes been exaggerated[13] and that the latter might be seen as having a greater role in the processes of state than previously thought (D'Altroy 1992: 16; Sinopoli 2001: 443-444; 446; Stein 2001: 368-369). Control over acquired territories and the integration of their populations tends to involve the creation of complex relationships between the centre and the territories and will also depend on factors including distance, resource distribution, political structure and external threats (Sinopoli 1995: 6). For example, the extent to which a region's resources are effectively transferred to the centre (D'Altroy 1992: 15-16; Stein 2001: 367-369) may vary considerably. Often, because of difficulties of land transportation, mainly prestige goods were moved over long distances. Thus cores tended to be economically self-sufficient and the exercise of imperial economic power was applied to prestige goods and materials. The approaches taken by states often accorded with local cultural practices, and varied markedly between societies and over time within a society (Sinopoli 2001: 458-459).

Core-periphery processes are therefore more appropriately modelled according to specific cultures (Stanish 1997: 196). Indeed, since each major world region, such as China, has a characteristic pattern of political economic behaviour (Blanton, Feinman et al. 1996: 3), the nature of imperial expansion should be studied in its particular cultural and historic context.

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[12] For example, Vijayanagaran central authority was relatively weak in peripheral areas (Karashima, 2002: 26). While its centre received some economic benefits from South India's coastal rice-growing regions, and around major seaports, these were probably quite limited (Sinopoli and Morrison 1995: 86).

Likewise, according to Stanish (1997: 214), the Inka state expansion conforms to a qualified core-periphery transformation model, in that at any time an empire will have heterogeneous relationships between core, provincial and peripheral territories, depending on the time since conquest – with the continual expansion forming new provinces (1997: 198).

[13] Many elements of the Core-Periphery Model are more appropriate to colonial situations, where peripheries were spatially removed and in which the core elites invested little (D'Altroy: 24).

In Wallerstein's model, some areas maintained their own economic systems and, for the most part, managed to remain outside the modern world economy. For example, Russia's wheat served primarily to supply its internal market and internal commerce remained more important than trade with outside regions (Wallerstein 1974: Ch. 6). This might be seen as having implications for inland Angkor, often considered to have been relatively cut off from major trade routes. However, it should not be taken that Angkor was economically isolated (see Sections 4.6.3 and 7.4.1). Other issues raised here that are important for Angkor are spatial variations in the administrative control of its territories, investigated in Chapter 6, and the self-sufficiency of its capital, discussed in Section 3.3.3. The above discussion also highlights the issue that state borders of pre-modern states have been flexible and the following models are based on this idea.

### 2.3.3 Loosely integrated polities

Models of loosely integrated states focusing on political and/ or ideological authority have been applied to Southeast Asian polities where social and political relations were maintained through 'network strategies' of alliances and gift giving. Such polities are thought to have often been established where low population densities led to an emphasis on control of labour rather than fixed geographic spheres of political authority (Junker 2004: 224).

The concept of the *Segmentary State* was originally formulated in anthropological studies to depict non-centralised political systems in Africa (e.g. Southall 1953; Sahlins 1972). Segmentary states were depicted as multiple, semi-autonomous polities, linked primarily through their acknowledgment of the ritual sovereignty of the king (Stein 1995). The model was applied to the Chola and Vijayanagara states in South India by Burton Stein (1980: 254-363; 1995) and to Southeast Asia (Winzeler 1981). Stein's adoption of the model, in response to the held view that the Chola and Vijayanagara states were highly centralised, failed to consider temporal change or to take account of economic or other factors which might lead to significant structural change (Sinopoli 2003: 56-56). Nevertheless, the model helped to establish debates about state organisation in South India. Today concepts of weak territorial boundaries and multiple centres of power are often seen as the norm for imperial states (ibid., 57). The *Segmentary State model* was examined for pre-modern Indian states by Heitzman (1995), whose study focused on the spatial variability of political authority. Heitzman's study found that royal influence decreased with distance from the centre and with the ecology and mode of production of regions. He observed a general change in Chola policy from that of a *ritual segmentary state*, to one in the period 1000-1150 CE of stronger royal controls, through the appointment of bureaucratic tax collectors. After 1150, local political organisations started to regain ascendency. Such shifts in political authority appear to resemble Angkor's cyclical

shifts in influence, suggested by the varying frequency of royal and non-royal inscriptions, discussed in Section 9.3.

Some studies have stressed the ideological objectives of weakly integrated Southeast Asian polities. Alliance networks surrounding chiefs and kings were maintained through their charismatic attraction and the theatrical ceremonialism of the polity centre (Tambiah 1977; Geertz 1980). Geertz's *Negara* in 19th century Bali was a *Theatre State* governed by symbols and rituals. The elaborate ceremonies and productions the state created were 'not means to political ends: they were the ends themselves' (Geertz 1980: 13). Wheatley depicts the Angkorian state with its 'cosmagically delimited capital' [sic], its symbolic representation of the king and his qualities, the personal cults of the nobility and officials, and countless temples and shrines to maintain these symbols (Wheatley 1975: 251). Yet it might be argued that ideology does not feed people or maintain loyalties in the long term. Bronson (1986: 87-88) points out that military power and other non-religious forces, for example the influence of pre-existing chiefdoms, were at least as important in integrating societies as ideology.

The *Mandala model* , in which political change is cyclical, was proposed to overcome the perceived difficulty that stable political entities appear rarely to result from one segmentary state society conquering another (e.g. Wheatley 1983: 276). The Sanskrit term *maṇḍala* describes both political and ideological aspects of a loosely integrated state (Junker 2004: 225). Following Mabbett (1978: 9), Wolters (1982: Ch. 2), Hagesteijn (1989) and Talbot (1994) have described states lacking fixed boundaries and bureaucratic apparatus. The *maṇḍala* centres on the court of the overlord, whose influence attracts degrees of loyalty and obligations from other lords through alliances and conquests. A number of dynastic centres may have overlapping circles of authority and changing loyalties. Wolters (1982: 17) likens the state to a concertina, expanding and contracting as lesser centres come under the influence of larger ones. The *Mandala model*, while having temporal flexibility, is primarily political, and ignores the socio-economic influences of state development.

In the Angkorian *maṇḍala*, referred to by several researchers (Mabbett 1978: 9; 22; Hall 1985: 154-57; Higham 1989: 344-46; Jacques 2007: 35), rulers appointed the local regional chiefs of newly acquired areas, and created special posts for supporters. This is seen in a record referring to Jayavarman II in K. 449/ 1069 (Wolters 1973: 24-25), and in K 485/ 13th c., in Jayavarman VII's reign, where the governor appointed to Lavo (probably modern Lopburi) was said to be the king's son (Cœdès 1942: 176). While depicting this *maṇḍala* as a cohesive system in which religious, political and economic strands were successfully integrated, Hall (1985: 157) notes in the inscriptions a 'constant friction between the centre and its periphery'. However, what he may be referring to is rivalry between officials over titles and land (Vickery 1985). The *Mandala model* has been used to explain the decline of some polities — the system becomes less sustainable when the regional elites or food producers are unwilling to

comply with demands on their resources. Hagesteijn (1989: 127-28; 140-44) and Higham (1989: 354) have suggested that Jayavarman VII's expensive building program caused political destabilisation and provoked incursions by Ayudhya and Champa. With increasing amounts of land passing to great families, these may ultimately have been in the position to withdraw support from the central overlord, and weaken the polity further.

The *Mandala model* bears a resemblance to Marcus' (1998) *Dynamic model*, in which archaic states undergo repetitive cycles of consolidation, expansion and dissolution. Initial expansion might result from military action, alliance or diplomacy. The stage of maximum extent is followed by territorial shrinkage and ultimately breakdown, as provinces are lured away or become independent, some to later themselves expand and consolidate, repeating the cycle. Marcus attributes their dissolution to the 'difficulty of maintaining large-scale inegalitarian structures' (ibid., 940). Arguably, since we know little about the dissolution of centres of power in the Pre-Angkorian period, it might be more aptly interpreted in terms of the *Mandala model*. In contrast to those who regard the succeeding Angkorian state as a *maṇḍala*, Kulke (Section 2.4.1 below) has argued that the Angkorian period 'transcended' this political structure, since rivals to the overlord now sought to control the existing political entity, rather than establish or become part of another. As illustrated below for Lopburi, regions incorporated by the Angkorian Empire could become autonomous, either temporarily or permanently, but there remained a core territory, roughly that of modern Cambodia.

Critics have argued that rulers were at times able to exercise greater central authority than the models of loosely integrated states predict (Karashima 1984; 1992; Heitzman 1995; Sinopoli and Morrison 1995; 2002).[14] Wisseman Christie (1983: 24) found that such models did not apply to Java, especially during the period of temple construction in the Central Javan lowlands during late 8th-early 9th century. She argues (1986: 71; 74) that by the 9th century, the Javanese state was neither the unstable *maṇḍala*, nor a segmentary state composed of detachable, cohesive sub-units.[15] The question arises whether Angkor, as an empire, functioned more as a loosely integrated state than as a centralised administration or whether we can identify transitions in the political economy. Stark (2006a: 162) has noted that the empire underwent cycles of political activity, ranging from regional control to strong central

[14] Karashima (2001) argued that differences in revenue policy between the two central study regions of Chola territory, (taken by Stein as support for the segmentary state argument), could also be used to support the idea of a fairly centralised administration. He saw the Chola period as a stage of decline prior to the emergence of feudalism. The segmentary state theory was a new form of stagnant society theory, put forward by Marx and others, to explain the concept of Asian despotism. Stein, he argues, replaced the village in the old theory by the segment (Karashima 2002: 11).

[15] While Central Java was never perfectly centralised, its power was not as dispersed as Naerssen's (1976: 298) '*polykraton*' model indicated. From the 8th century, apparently through a deliberate policy of rulers, the traditional local political units (*watek*), had been absorbed largely unchanged into the state structure where they became more and more dispersed (Wisseman Christie 1986: 70).

control. As is discussed in Section 9.3, these cycles appear to have been brought about by both external factors and shifting relationships of power between rulers and other elites.

### 2.3.4 Networks

Responding to arguments that political control is tenuous and that political entities are never completely isolated from developments beyond their borders (e.g. Wallerstein 1974; Sinopoli 2006: 4), some researches have found it useful to view pre-modern polities by studying their networks — rather than by seeking signs of hegemonic control over subject populations. Where 'controlled' territories are depicted on maps as bounded areas, this may oversimplify the complexity of relationships within a state, for example presenting its presumed maximum extent at a particular time. Pre-modern states were never characterised by fixed boundaries. Processes of integration may have taken a considerable time, and, as indicated above, control over areas may have fluctuated with the social and political situation. A cohesive political entity can fragment into separate parts and then reform (Smith 2005: 834). For example, Lavo (thought to be Lopburi), which was incorporated into the Khmer Empire by Sūryavarman I (1002-1050) and controlled by Sūryavarman II (1113-1150), was apparently autonomous in 1115 and again in 1155, when independent rulers sent missions to China (Cœdès 1968[1964]: 162-163). Boundaries of states may also cross areas which are culturally, ethnically and linguistically common, and this may alter the effect of the supposed borders (Sinopoli 2001: 463; Smith 2005: 835; Vickery 2005: 23-24), making it difficult to identify types of interaction or to distinguish between control and influence (Sinopoli 2001: 463), as is discussed further in Chapter 6.

Identifying the spatial and temporal extent of empires is often difficult. Incorporated areas may show dramatic or relatively little transformation. Historical records of infrastructure built by central authorities and of areas covered by political alliances, the sites of battles, artefacts and monuments may all be used to define areas of imperial bureaucratic control. However, monuments, often seen as political statements, may be primarily religious in function; artefacts can be transported; styles can be copied over great distances; and statements by rulers may be little more than expressions of claims to power (Sinopoli and Morrison 1995: 84; Sinopoli 2001: 446; Smith 2005: 837).

A *Network model* of a state might overcome some of these deficiencies and depict various relationships (Smith 2005). Nodes and connectors can be used to represent different aspects of a political economy. States expand as they create or take over new networks, and in the converse situation, they lose nodes. Understanding states as networks can clarify how each operates and may, in fact, resemble the way pre-modern rulers were able to visualise the workings of their territories (ibid., 840). For example, such a model can demonstrate how Inka state control was concentrated on nodes of population and economic activity, and on

strategies for moving between them.[16] The Khmer roads and rivers have also been considered as a network for transportation of goods, people and ideas (Wolters 1982: 18; Hendrickson 2007), as have the Chinese Silk Trade Routes (ODDDA 1999-; Yang 2004). Maps can be produced to highlight spatial and temporal variations of features such as habitation sites, resource locations or temples and communication links between nodes. These can be analysed to discern power relationships (Stein 2001: 369). In Chapter 6, clusters of Khmer temple sites of different periods will be depicted as a set of nodes and these compared with distributions of different classes of epigraphic data to understand relationships between Angkor's capital, regional areas and their centres. This approach is represented well in the *Territorial-Hegemonic model*.

### 2.3.5 Territorial-Hegemonic model

Given the large scale of some of the early empires, rulers are unlikely to have attempted to fully control resources. For example during the Vijayanagara period, most economic production was not subject to administrative control. Sinopoli and Morrison (1995: 83-84) have shown that this control was exerted differentially, according to historical and political preconditions, regional economic and social structures, and geographic and ecological factors. Direct imperial control of production focuses on strategic resources, while less essential and subsistence resources tend to be regulated locally. There are indications that Angkor also restricted its control over production to more important resources (Section 7.6). Ideological influence can mitigate the costs of enforcing political and economic control, gain local support for imperial acts, or even conceal essential relations of power and inequality (see also D'Altroy 1992: 13-14; Sinopoli 1995: 7). The *Mandala model* emphasises 'networking strategies' through alliances, which differ from 'corporate-based strategies', which exercise power through bureaucratic institutions. These are considered to be overlapping strategies for exercising political authority; rulers make pragmatic decisions in order to arrive at a working balance between them (Blanton, Feinman et al. 1996; Blanton 1998; Junker 2004: 225-9).

D'Altroy (1992: 19) argues for a more flexible model to overcome the difficulties inherent in other models of empires. In his view, the *Territorial-Hegemonic model* is the most appropriate. Luttwak (1976: 4-5; 191-194) and Hassig (1988: 253-267) have demonstrated its strength in

[16] The Inka polity (1400-1532) can be used to illustrate the difference between traditional depiction of the extent of the empire and one which shows major roads and sites. The road system was very important in the process of integration, providing access to population centres and a symbol of state authority. The roads can be viewed as a series of network links, with Inka state control concentrated on nodes of population and economic activity (Smith 2005: 839). However, the ties, essentially weak because of the large distances between nodes, might explain the conflicts with local leaders during expansion and the ease with which the Spanish undermined the state (ibid., 839).

accounting for variations in degrees of control throughout imperial territories.[17] Hassig (1985: 100-101) holds that imperial strategies are best envisaged along a continuum. This ranges from the hegemonic system at one end — a core polity and client polities[18] responsible for implementing imperial policy, extracting resources for imperial consumption and providing their own security — to territorial control — more direct occupation and governing of subject territories, with the central state responsible for security and administration. A range of strategies may be applied in different locations and at different times to meet imperial goals. There are indications of declining involvement of the Khmer state with distance (Sections 6.3; 6.4).

In the *Territorial–Hegemonic model* (D'Altroy 1992: 19-24), imperial organisation is treated as a series of interrelated imperial strategies for the 'input and output of resources' and can offer a more realistic view of the interactions between imperial and subject power. The model focuses on the costs, benefits and effectiveness of flexible combinations of the strategies for exercising power. Conflicting requirements might include the need to take account of security threats; differences between core and peripheral populations and resources; and transportation and communications capabilities. The spatial organisation of imperial activities is usefully conceived in terms of transport costs and communications capabilities. For example, the observed transformation from *corvée* to specialised labour classes in the Inkan economy conceivably might be viewed as a 'calculated interplay between socio-political and energetic considerations' (ibid., 150).

As foreshadowed in Chapter 1, the *Territorial-Hegemonic model* is adopted as the overall framework for this study because it acknowledges the importance of control over the acquisition of resources for Angkor's accumulation of wealth, and accounts for the state's responses to temporal and spatial variations in circumstances over its period of existence.

## 2.4 Models specific to Angkor

Two models, the *Processual model* and the *Temple Hierarchy*, have been applied by Kulke and Hall respectively, to aspects of Angkor's political economy. The first depicts stages in the development of the imperial state, using Angkor to illustrate characteristics of the stages. The second focuses on the integration of the Khmer state, using a hierarchy of temples linked to the centre, for economic management and for the transmission of state ideologies. While both

[17] Luttwak (1976) has drawn the distinction between territorial and hegemonic models for stages of the Roman Empire, where political relations were based on clientage in peripheral areas and in the early stages of development and towards bureaucracy near the core and in later stages.

[18] There was an uneven patron-client relationship of rewards given by the patron in return for services by the client, which might have amounted to providing internal security (Luttwak 1976: 21-25).

models aid in the identification of important characteristics, they also have limitations, which are examined in this thesis.

### 2.4.1 Processual model

Kulke proposes three distinct phases of development as part of an overall process of state formation in India, which he argues was also applicable to Southeast Asian states, such as Angkor (Kulke 1986; 1995). Kulke argued that from the 7th century, most Indian states emerged through agrarian expansion and political integration in a process connecting three concentric geographical areas (nuclear, peripheral and beyond) and three chronologically distinct stages of state development (chiefdom, early kingdom and imperial kingdom) (Kulke 1986; 1995: 233).

In Stage 1, the chieftaincy, elites rise to power over a clan and social strata develop, though without any form of institutionalised bureaucracy. The authority of the leader enables him to gain control over resources and to mobilise supporters.

In Stage 2, political control intensifies with the creation of hierarchies within the nuclear area and to some extent in the peripheral zones. Neighbouring chiefs and *rājās* are forced into tributary dependence. After subjugation, they are reinstated but have to pay (nominal) tribute to the rulers and to donate women to the royal harem. Permanent control of outlying zones often fails and their rulers are sometimes able to remain autonomous.

Stage 3 is that of the Imperial Kingdom. Rulers expand their original realms, sometimes considerably, and empires emerge from a continuous process of integration, often by uniting earlier nuclear areas of kingdoms and shifting the capital to a new core region. The central administration and the apparatus of legitimisation of the imperial centre are expanded. Conquered rulers are removed from power, rather than reconfirmed as tributary princes, and intermediate zones are integrated. A major impact of the development of the Imperial Kingdom is that former autonomous local or regional centres are restructured to form provinces (*viṣaya* or *pramān* in Angkor, a process which appears to have coincided with the establishment of a centralised bureaucracy) (Sahai 1977a: 35-45; Kulke 1986: 11). At this stage, the kingdom's unity is rarely challenged (Kulke 1986: 7-17; 1995: 256). These changes are observed most clearly from the reign of Rājendravarman (de Mestier du Bourg 1970: 290; Kulke 1986: 12; Lieberman 2003: 218). Stage 3 is characterised by an increased number of officials supported by the decentralised collection of levies and their redistribution. However, transfer of resources to the centre is often minimal.

Comparative studies indicated that regional authorities such as governors and state tax officials, in keeping with integration policies, tended to be local appointees, but these were sometimes replaced by direct representatives of the centre, as in Pagan (Aung Thwin 1985:

104-5) and Vijayanagara with the central appointment of the military officials, *nyakas* (Morrison 2001a: 268; Karashima 2002). Governors of Inka provinces were appointed by the centre, but local elites held offices at lower levels (D'Altroy 1992: 131). Pagan's core districts were ruled by members of the royal family (Aung Thwin 1985: 101). Its tributary states were governed by royal appointees or local leaders depending on their importance (Aung Thwin 1976: 218-2; 1985: 99-108). Expansion of imperial kingdoms did not necessarily erase the socio-political identity of the annexed areas. During the early years of the Mahīdharapura dynasty under Sūryavarman II, Lavo sent its own mission to China in 1115 (Section 2.3.4 above) and appears to have asserted its independence again in 1155 after Sūryavarman's death (Kulke, 1986: 11).

Kulke (ibid) argued that the growth of the Imperial Kingdoms in Southeast Asia (Angkor: 9th–13th century; Pagan: mid 11th–end 13th century; Ayudhya: 14th–18th century; Java: 13th–14th century) was not just a matter of expansion. Rather, there were structural changes (from Stage 2 to Stage 3) in the region around 1000 CE which enabled a few 'men of prowess' to transcend the limitations, i.e. the political uncertainties, of the Early Kingdom (ibid., 9). Following these structural changes, the *Mandala model*, with overlapping and changing loyalties, could no longer be applicable. Rather than seeking independence or new alliances, leaders of successful coups might aim to gain control at the centre. Thus, according to Kulke (1986: 12-13) the aims of both Sūryavarman I and Sūryavarman II, in their respective struggles for supremacy were neither to defeat or destroy the Angkor kingdom, but to conquer the already firmly established centre, and facilitate greater stability of the outer core areas.

An additional feature was the new 'ritual policy' whereby temples were increasingly constructed near or at the political centre, while earlier they had more often been at holy places. At Angkor, this function of the temple is seen in its most developed form under Jayavarman VII. Temples became more and more the focal point of a 'magico-politico force field' emanating from the political centre (Kulke 1986: 14) with the rulers associating themselves with divine power (ibid., 14-15).

Kulke's model is essentially political and, apart from reference to extraction of tribute from subject populations, does not consider the many interdependent imperial strategies, such as the use of state ideology, the extraction of natural resources or engagement in trade. The provinces are described as being more controlled by the centre, yet decentralised for collection of taxes, which leaves unanswered the question of the division of responsibility. The model clearly attempts to deal with change, yet, although acknowledging that different structural problems were encountered by different states (ibid., 5), assumes a similar overall trajectory for early South and Southeast Asian states.

Given the variability within and between states, Kulke's proposed evolutionary typology is too restrictive, since it downplays the dynamics of state processes. These might focus more on culture-specific interactions such as ideology, power relationships, craft production or exchange patterns at different levels, perhaps at village or household level or within a world systems framework (Stein 2001: 355-356). Sinopoli (2001: 444-455) advocates making the distinction between the processes, events and causes of imperial formation and those of consolidation,[19] where territories are incorporated effectively, rather than focusing on stages. Moreover, not all Indian or Indianised states need have gone through Kulke's three stages, since development may have been influenced more by local factors, or because the centre was unsuccessful in implementing strategies. For example, where control was more fragmented, local elites may not have been replaced by central appointees as a matter of course. Sinopoli argues that considerable political authority in empires sometimes remained in the hands of regional administrators, who interacted with only a small number of central elites based at imperial centres.[20]

Much of Kulke's model appears applicable to Angkor. For example, the many titled officials appearing in the Angkorian period inscriptions demonstrate links to the central administration and recognition of the state's authority. There do appear to be indications of increasing exercise of central authority — e.g. in the organisation of property in the Pre-Angkorian period (Vickery 1998: 294-295) or in the Angkorian period, with the more overt move by Sūryavarman I, following his success in the war against Jayavīravarman, to conscript some thousands of officials into his *taṃrvāc*[21] corps (Cœdès 1951; 205-21; Sedov 1967: 194; Sahai 1978: 25; Sedov 1978: 119; Hall 1985: 141; Briggs 1999[1951]: 151; Vickery 2002: 88-90). Yet the question arises whether there was continual increase of central control. A polity such as the Khmer state required a capacity for adaptation to changing political and economic circumstances. In Chapter 6, indicators of Angkor's central control are examined in some detail, and point to spatial and temporal variations not represented by the *Processual model.* In Section 9.3, the final stage, the Imperial Kingdom, is perhaps more accurately depicted as cycles of alternating dominance of royal and non-royal inscriptions concurrent with cycles of political events.

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[19] Consolidation could include the building of infrastructure or demographic shifts, which might depend on pre-existing conditions in the 'acquired' territories and imperial demands.

[20] Under Vijayanagara, tax obligations, for example, were sometimes negotiated (Sinopoli 2001: 455).

[21] Approximately 4000 individuals from about 200 different *sruk* (villages) took an oath of allegiance, in which they agreed to be neither hostile to the king, nor associated with his enemies. These were listed in 4 classes in K. 292/ 1011. According to Cœdès (1951: 206), because of the reference to an alliance by blood, the *taṃrvāc* could have been an elite corps, rather than administrators. Vickery (2002: 89) regards them, not as local chiefs, but inspectors sent out to the *sruk*.

### 2.4.2 The Temple Hierarchy model

The close association between the rulers, regional elites and the temples is explicit in the Angkorian period temple inscriptions (e.g. Mabbett 1978: 32). According to the *Temple Hierarchy model* (Hall 1985), [22] the Khmer state was integrated through a network of temples linking local village temples to larger ones, referred to as central temples by Sedov (1967: 183-95; see Appendix 2). [23] These were themselves linked to state temples. Temple deities were linked by the symbolic sharing of part of their revenue and through the participation by their clergy in state temple rituals. These amalgamations (*miśrabhoga,* etc), whereby the produce or the administration of temple lands were declared to be merged, have been interpreted as serving both ideological and economic functions (Ricklefs 1967; Sedov 1967: 183-86; Hall 1985: 151; Vickery 1998: 155-8).

In Hall's (1985) analysis of Angkor, Khmer temples both integrated the society through religious symbolism and functioned as economic centres. This is similar to what investigators of South Indian temples have observed in the close association between rulers and religious centres, where rulers sometimes subsidised temples and invested in irrigation in their villages.[24] In the Vijayanagara period of the 14th–17th century, Hindu temples were major participants in the social, economic and political development of the state, playing a major role in the expansion of craft production and urbanism (Sinopoli 2003: 94-97) [see also Stein (1984; 1984a) and Heitzman (1987)].

Many of the Khmer religious foundations are older than the inscriptions which refer to them. However, even the earliest permanent religious structures are thought to post-date contact with India, being the work of minor rulers using foreign-inspired symbols to enhance their legitimacy (Section 1.3.1). In the Pre-Angkorian period, the foundations were not purely religious, but were also economic units organised by local elites (e.g. Vickery 1998: 278). Religious construction continued on a grander scale through the Pre-Angkorian and Angkorian periods: the material evidence for this in Cambodia is so great that Wheatley (1975: 252) has described the landscape as resembling 'one huge oblation'. However, building output varied over this time and there were periods when construction was dominated either by rulers or by officials. During an extended period of social, political and economic changes between the early 10th and late 12th centuries, a 'zone of imprecision' (Stern 1951: 659), officials were

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[22] Hall's 'temple hierarchy' resembles both his Indian 'Cōla Age Marketing Hierarchy' (Hall 1980: 129) and his Rice Plain States three-tiered Marketing Model (1985: 16) designed for early Java. The latter, as noted by Grave (1995: 12), corresponds to Smith's (1976: 316-319) solar central place regional model (Appendix 15).

[23] Some have not been identified (Michael Vickery 2006, pers. comm.).

[24] There is however no epigraphic evidence that local road construction and irrigation were subsidised by the centre, as was sometimes the case in India, and some inscriptions, such as K. 235B/ 1052 and K. 254B/ 1126, support the idea that secondary roads were financed locally.

responsible for some of the construction and the majority of inscriptions. This period is most discernible in the reign of Sūryavarman I (1002-1050) (Vickery 1985: 228).

Angkorian period inscriptions often describe how members of the elite, having received the sanction of the ruling king, constructed religious foundations provided with lands, livestock, trees, personnel, etc. The temple supported construction and rituals, and thus 'reinforced the role of the elite as patrons of the temple deity and the source of prosperity in the eyes of the local inhabitants' (Hall 1985: 137). Endowment of temples was an important means whereby rulers too could enhance their legitimacy and integrate the society through a temple hierarchy.[25] Temples also acted as centres for the redistribution of 'symbolic capital', since non-material religious merit could be accrued by making donations and offerings to temples (ibid., 160). In other words, the different strands of society were integrated through 'limiting and disguising the play of economic interests and calculations' (Bourdieu 1977: 172 n. cited by Hall 1985: 138).

In addition to helping to integrate the state, the private religious foundations benefited the founders and their families. Land, albeit sometimes in outlying areas, was given to them by the rulers as 'reward' or 'payment'. Rulers often provided the workforce, by 'giving' over whole villages and livestock for the establishment of the foundation. An incentive to establish a foundation, one available to religious institutions in many parts of the world, past and present, was exemption from taxes, *corvée* and other impositions (Sedov 1967: 169; Sahai 1977b: 133-4; 1978: 122).

For a state to function, it must control a supply of resources to provide: food or payments for the army, bureaucrats and *corvée* labourers; reserves; and valuables for trading and rewards. These are obtained through direct extraction, tribute or taxation. According to Sedov (1967: 201-2; 1978: 122), some commodities were produced for the state by specialised industries managed by the religious foundations. Hall suggests that the state was supported by the small quantities of provisions passing up through the temple hierarchy, and that in fact the state could acquire revenue without needing a complex bureaucracy (Hall 1985: 137; 156). However, following the earlier work of Sedov (1967: 191-192), Hall (1985: 164) also stresses that these were insufficient to serve as tax.

We do not know how the village communities assigned to work for religious foundations were taxed, or even what proportion of those working for the temples resided with their families in

[25] This practice is not unusual. In Vijayanagara, according to Stein (1984b: 177), since the administrative organisation of the state (other than for military organisation) was loosely integrated, allocations to temples were important ways state resources could be transferred for economic purposes.

villages.[26] The officials who collected taxes and otherwise imposed on the population seem to have been both state and local appointees, though Sahai (1977b) does not draw the distinction, and other writers simply refer to the very many officials of the bureaucracy. This may compare with Pagan, Java and some medieval Indian states, where tax systems were, in the main, decentralised (e.g. Wisseman 1977: 199; Hall 1980: 57; Wisseman Christie 1983: 18-19; Aung Thwin 1985: 108-10; Morrison and Sinopoli 1992: 343; 1998: 364; 366; Sinopoli 2003: 4-5).

Hall's *Temple Hierarchy model,* depicting temples acting as centres of religious and economic management, has not been discussed critically. Nevertheless, it offers insights into aspects of the Khmer political economy and has suggested several questions for this study. It highlights issues of state revenue collection and the nature of the administration, in particular the relationship between the centre and the numerous titled officials seen in the inscriptions. Hall focuses on the purported redistributive economy based on the views of Polanyi, but does not consider important aspects of the operation of the system, such as interactions between the centre and the regions, and regional development associated with temples. Evidence on society and 'state finance' is derived largely from inscriptions (e.g. Smith 2004: 87), but the Khmer texts are less than explicit on such matters. While this model offers a framework for the political economy, it would need to be elaborated to depict how processes were implemented, how they were integrated and how they varied. The temple hierarchy and its role in tax collection will be investigated in Chapter 8 in an examination of the relationships between the state and the Khmer temples and the association between amalgamated temples and their deities. This will support the idea that a network of temples was a vehicle for the transmission of state ideology and that while the temples likely had little direct involvement in taxation, they had strong links with state and local officials.

## 2.5 Conclusion

In the study of empires and large states, processes rather than typologies are important. The control over resources is a key consideration in the nature of interactions within and between empires and large states.

In order to describe a state's political economy, models need to take account of the interdependencies of political, economic and ideological processes, as well as their temporal and spatial variability. Various models outlined in this chapter — the *AMP*; *Core-periphery* and *World Systems*; *Loosely Integrated States; Networks*; *Territorial-Hegemonic*; *Processual*; and *Temple Hierarchy* — highlight distinctive elements of the societies for which they were

[26] Vickery (1998: 310) points out the male/female imbalance in Pre-Angkorian temple lists, suggesting these were not natural communities.

developed, or offer perspectives on particular stages of development. Each model suggests key features for studying the Khmer Empire: two of them have been elaborated specifically for Angkor, the *Processual model,* highlighting the need to investigate how central power was exercised, and the *Temple Hierarchy* model, indicating aspects of the production and allocation of resources that should be explored. The communications system of the Khmer Empire is studied in this thesis from the perspective of a *Networks model*, using nodes and connectors to depict links between sites. The *Territorial-Hegemonic model* helps to inform analysis of spatial and temporal variability of features to offer insights into the way the state administered its territories. The study evaluates data at a variety of scales — site, inscription and object or human action.

The issues for investigation in the thesis are the interrelated processes important for Angkor's long duration as an empire. The epigraphy and other data will be investigated to show how the nature of Angkor's control varied over space and time and how wealth was accumulated and distributed. A number of issues for Angkor which have emerged from the discussion in this chapter are:

- the role of the communications network for control and acquisition of resources, including foreign trade;
- spatial and temporal variations in the degree of administrative control from the centre;
- strategies for maintaining the support of provincial elites;
- the power relations between rulers and other elites;
- the role of redistribution of resources in the economy;
- the degree of economic control by the centre;
- the means of acquiring wealth from imperial territories;
- the establishment of state sponsored production;
- Angkor's participation in a world trade system;
- the relationships between the state and the temples: their respective roles in the economy and in implementing state ideology;
- the evidence for and function of a hierarchy of temples linking royal temples with those in regional areas;
- stages of development of the Khmer Empire;
- the long-term consequences of the strategies for exercising power.

Many of these issues concern the interactive factors which helped to sustain the Angkorian Empire. Further issues are raised by the discussion of Angkor's resources in Chapter 3 and its material economy in Chapter 4. Following the analyses in Chapters 6 to 8, the results of the study are synthesised in Chapter 9 and five categories of interrelated processes and strategies are derived. These do not necessarily correspond with those of other empires, nor, as has been pointed out, are they necessarily its most important, since this study relies on

available sources of data. They are considered to have helped provide Angkor with the resilience to maintain its integrity in the face of changing circumstances — as indicated by concurrent political cycles of dominant royal and of non-royal expressions of power, and of territorial gain, consolidation and loss.

The form of Angkor's political economy was significantly shaped by the varying capacity of its elites to manage its underpinning resources — be they physical, biological, infrastructural or social. An understanding of such assets is important for appreciating how they contributed to the sustainability of the Khmer Empire.

# 3 The resources and economic basis of the Khmer empire

> Generally speaking, three or four crops a year can be counted on, for the entire Cambodian year resembles the fifth and sixth moons of China, and frost and snow are unknown.
>
> (Zhou 1993[1297]: 39)

> I have offered these slaves and these lands to supply provisions in favour of the sanctuaries (which will be said), I have erected roadways, constructed bridges to enable the paths to pass. I offer the fruit (of my acquired merits) to the king as if it were a royal foundation; and I desire only the fruit of my devotion to my master.
>
> K. 254 (1129 CE)

## 3.1 Introduction

This chapter sets out the resources which were the basis for sustaining the political economy of the Khmer Empire. The control of the production, distribution and exchange of these resources was a primary aim of imperial strategies for the acquisition and exploitation of territory and management of diverse populations. Resources included: physical and biological assets — land, minerals, plants and animals; manufactured products and infrastructure; and people with their social and administrative structures and their labour.

While the epigraphy is rarely explicit about Angkor's resources, some aspects can be supplemented with archaeological data. Recent archaeological research has focused on the magnitude of the Angkor urban complex, especially the size of its population, its economic base and the function of its elaborate hydraulic system. Researchers are also beginning to investigate the communications infrastructure of the state, its water control, and the role of the infrastructure in the relationship between Angkor the city and its state. Opinions remain divided on how Angkor's society functioned. While the inscriptions contain some information about the people who were of consequence to the temples and in matters of state, our understanding of the social structure is limited. We have little historical knowledge of the lives of ordinary people, mostly depicted in the inscriptions as passive participants, with their actual roles rarely explicit. A little understood issue is that of the status of the temple workers, who are listed in their thousands in the texts.

As a context for analysing the content of the inscriptions, this chapter provides an overview of existing research on the production and distribution of Angkor's resources, starting with the physical and biological — the basis of any political economy. The chapter then outlines Angkor's infrastructure: its communications, urban settlements and water control systems. The

concluding section is a discussion of the nature of the Khmer society, which both produced and managed the accumulation of wealth.

## 3.2 Physical and biological resources

### 3.2.1 Land

Land was the source of wealth and power, since its possession allowed control over agricultural production and most likely the people who were attached to it (Ricklefs 1967: 413) (see also Section 4.2). Often, as seen in inscription K. 720/ 1006, when land was given to a foundation, the foundation received only the land's revenue, while the donor retained the 'ownership of the land', in the right to a share of the production, or administrative rights over the inhabitants (Hall 1985: 150). A number of authors have argued that in pre-modern Southeast Asian states, control over manpower and production was more critical than ownership of land, since labour was in short supply (Aung Thwin 1976: 207; Hall 1985: 4; 150; Reid 1988: 26; Junker 2004: 231; Boomgaard 2005: 5). Studies indicate that abundant land but limited labour can lead to population growth, colonisation of new zones, urbanisation, the growth of trade and economic prosperity (Smith 2004: 93), but investigating a link between Angkor's prosperity and the regional population density of its state is beyond the scope of this study.

Land in Pre-Angkorian Cambodia was apparently neither private nor effectively owned by the rulers. Property 'ownership' appears to have been vested in the local communities, or local chiefly lineages, under the authority of *poñ, mratāñ, kurek*, etc, and this was the case in other parts of Southeast Asia, such as Java and Vietnam (Vickery 1998: 299). In the inscriptions of the Angkorian period, land on which private foundations were established was often described as belonging to the king, and a new foundation as being a royal work (e.g. K. 956/ 10th c.; K. 254/ 1126). Such 'ownership', however, would have been symbolic rather than real, since the same lands had previously been purchased by individuals or 'given' to them by rulers. The inscriptions also record that whole villages were 'given' by the rulers to provide the labour for production for religious foundations. This gave the founders certain controls over the village populations. Royal estates (mentioned specifically in K. 262/ 983 and K. 521/ 11th c.) may have comprised a significant portion of the productive land. The land belonging to some late 12th century royal foundations would have been substantial, judging from the numbers of personnel attached to Jayavarman VII's Ta Prohm and Prah Khan temples at Angkor and the thousands of villages assigned to provide food for them (Sahai 1977b: 134 n. 94-95).

Ricklefs (1967: 413; 415) has argued that the granting of land by the king in the 10th–11th century was not only a demonstration of his right to rule, but, particularly from the reign of Rājendravarman (944-68 CE), facilitated the opening up of new areas. However, he

considered that land purchase, which had to be sanctioned by the king, was probably more common than acquisition through grants.[27] In the 10th century, there appears to have been 'a fairly definite system of land and property rights', and, while the land was not 'legally' owned, the owner and his family had exclusive rights over the property, even in instances of royal land grants (e.g. K. 842) Yet the ruler retained some authority over the foundations on private estates, which are seen in the requirement for his permission when temple establishments were to be joined (Section 8.4). The king is depicted as the final arbiter in disputes, the majority of which, at least in the inscriptions, were over land. The inscriptions recording the outcomes of these legal processes would have acted as legal documents, providing proof of ownership (ibid., 417-18). Also, as can be seen in inscription K. 216/ 1007, the king could claim the land, if the founder of a religious institution died without heir (Ricklefs 1967: 416; Jacques 1986: 331). Since private land owners were not necessarily high officials,[28] Ricklefs (ibid., 419) inferred that the right to own land and the protection by royal law applied to all free people in the society. He thought, further, the legal provisions for the future of private land holdings[29] suggested confidence in the Khmer kingdom (ibid., 420). One could, however, interpret this custom as being as much an expression of hope as of confidence that the law would prevail — in a period when families were seeking to acquire wealth and power, as will be discussed in Sections 6.8.4 and 7.3. Angkorian period land which was held communally by clan lineages or groups such as *varṇa* and *varga*, constitutes an additional category of land ownership, omitted from Ricklef's discussion. It sometimes appear in the inscriptions (e.g. in K. 374/ 1042) where a group of individuals is selling land collectively, or is collectively responsible for the land's production (e.g. a *varṇa* in K. 684/ 1099).

The records of the disputes over property rights and the prescriptions by the founders about future management of their foundations demonstrate that land ownership was extremely important. Further evidence of this can be seen in the seemingly high prices recorded for land purchases (Section 7.3).

### 3.2.2 Biological resources

From the 6th century, when the centres of Khmer population moved inland, the economy was based largely on rice production. Central Cambodian inscriptions from the 7th century indicate that rice was the agricultural crop of greatest significance in the diet, a primary basis of wealth, a principal resource grown and consumed by temples, and, in the Angkorian period, a

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[27] Private tenure has long been both individual and collective in many areas of Southeast Asia (Boomgaard 2005).

[28] This was based on the view of Cœdès (cited Ricklefs 1967, pers. comm.) that titles of landowners, such as *vāp, me* and *loñ,* did not rank highly.

[29] The declarations of the founders establish the ownership of land and its future status, setting out the rights of the foundation and the founder's family, taxation and other immunities and provision for the foundation's maintenance.

principal taxation commodity. The significance of rice to the prosperity of Angkor and other Southeast Asian mainland polities has been inferred from the simultaneous rise and decline of Cambodia and Burma between about 950 and 1280 CE, as a corollary of altered agricultural (rice production) regimes attributed in part to changes to rainfall (Lieberman 2003: 224-26).

Farmers have been growing rice in Cambodia for at least 4000 years (Ly 2002) and using irrigated rice technologies for the past two millennia (Helmers 1997: 1). Although many of Cambodia's soils are not of good quality, rice can be grown in most areas (White, Oberthur et al. 1997: 21-29). Today, rice occupies some 90 percent of the country's total agricultural area, volume of production and income (Javier 1997: 73; IRRI 2007).[30] Given that the methods used today are largely traditional, it is thought that rice growing in the 7th century would have employed similar techniques to those observed in Cambodia in the 19th and early 20th centuries (Chandler 1996[1983]: 7), and up to the Green Revolution in the 1960s. Delvert (1961) describes a contemporary conservative society where the rural population was over 90 percent of the total. If the crop production techniques were largely unchanged, then a given area of land in Angkorian times could be expected to have yielded much the same from the same number of workers as in recent times. Such ethnographic observations have underpinned the calculations for Angkorian rice production and the populations supported by this (Sedov 1967: 172-73; Groslier 1979: 190; Acker 1998; Vickery 1998: 304; Lustig 2001; see also Section 3.3.3 below).

A significant proportion of the protein in the Cambodian diet today comes from fish, with the Tonle Sap Lake and River together providing 60 percent of the country's needs (see Section 1.2.1). Rows of fish drying in the sun are a common sight. In addition, most farmers have access to a locally dug pond or *trapeang*, serving the dual purpose of irrigation and fish habitat (Van Liere 1980: 271-273; Zhou 1993[1297]: 69; Evans 2007: 186-190). Fish are caught and dried at the end of the wet season. The Khmer inscriptions contain numerous references to these small-scale artificial ponds (*travari*), mostly in toponyms indicating the limits of land parcels.

Reports of Angkor's exports to China list some valuable animal and plant forest products, many coming from upland areas, (Chau 1966[ca. 15th c.]: 53; Zhou 1993[1297]: 41). These were: rhinoceros horns; elephant tusks; kingfisher feathers; beeswax; fragrant timbers such as laka-wood, gharu-wood and cardamom used for incense; and resins including lacquer-gum and gamboge, the source of a yellow pigment. These prestige products were also available for the local elite and temples. Fragrant timbers and resins are listed in the inscriptions

[30] In 1995-96, 89 percent of all rice grown was wet season rice, of which 84 percent was lowland rain fed rice, 4 percent was deepwater and 2 percent upland rain fed rice. Only 10 percent of the total rice grown was dry season (irrigated) rice.

K. 368/ 1186, K. 273/ 1186 and K. 908/ 1191, as used in the temples and hospitals of Jayavarman VII.

### 3.2.3 Mineral resources

Arguably, Angkor could obtain much of its metal from its own mineral deposits. In the pre-modern world, metals, even base metals, were often sufficiently valuable for small ore deposits to have been mined (Bronson 1992: 64-72). For example, minor lead deposits near Angkor may have been exploited in the Angkorian period to provide this metal for the roofs of temples and palaces (Pottier 1997). The inscriptions contain lists of material items, mostly of metal, but no information about the provenance of mineral resources. According to Bronson (1992: 87), Cambodia's only recorded metal production between 1500 and 1800 was iron, mainly from Preah Vihear Province. Today, we have additional knowledge of various metalliferous deposits in the region, and recent mineralogical maps (ESCAP 1990; 1993; 1996) indicate copper (in the Vat Phu[31] area of Laos), gold (Banteay Meanchey and Champasak in Laos) and tin (Kompong Speu) among others. There are rich deposits of iron ore at Phnom Dek and evidence of iron ore smelting at nearby Preah Khan of Kompong Svay in Kompong Thom (Jacques and Lafond 2007: 177).[32] Iron and salt were said to have been produced on a large scale in the Khorat area of northeast Thailand during the period of Khmer dominance in the region from 1000 CE (Welch 1998: 229). However, no viable silver deposits are recorded.

## 3.3 Infrastructure

Angkor's infrastructure augmented its resilience in the face of threats and disturbances. An extensive communications network linked strategic areas to its capital. In the capital, a massive hydraulics system helped ensure food production. Historical and archaeological research in Southeast Asia, assisted by technologies such as geographic information systems (GIS) and remote sensing have begun to improve our appreciation of the infrastructure of the city and its empire. The work on infrastructure and urban settlement patterns (e.g. Pottier 1999; 2000; Fletcher, Barbetti et al. 2003; Evans, Pottier et al. 2007; Evans 2007; Hendrickson 2007) and historical water management (e.g. Groslier 1979; Van Liere 1980; Acker 1998; 1998[1974]; Fletcher, Penny et al. 2008; Lustig, Fletcher et al. 2008) is rapidly generating data and contributing to new perspectives on the Angkorian past within the urban complex, within the empire and as part of a wider world system.

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[31] See Appendix 4 for spelling adopted for place names and temple sites in this thesis.

[32] The miners of the iron ore were likely an ethnic group, the Kuoy, who may have had a monopoly on its extraction and smelting, using a low temperature technique, still seen until recent times in India.

### 3.3.1 Communication networks

The Angkorian Empire's natural communication network, its waterways, enhanced by roads, enabled it to move resources, information and directives throughout its territories. Historically, inland water transport has been the most reliable and conventional form of transport in Cambodia, and rivers were an important focus for settlement. The Sen River catchment to the north-east of Angkor, the Sangker around Battambang and the Mun in north-east Thailand were settled by the first two centuries of the Angkorian period, though probably much earlier (Hendrickson 2007: 193-184; 196). The river system with its tributaries has a total navigable length of about l000 km, of which more than a third can be used throughout the year. The Mekong accounts for about 30 percent of the navigable waterways, the Tonle Sap another 15 percent and the Bassac 5 percent (OCM n.d.). During the rainy season, many waterways would have been used, but in the dry season only the larger ones would have been navigable. Up to recent times, it was possible for larger boats to access the Tonle Sap Lake from the coast via the Mekong and Tonle Sap Rivers (e.g. Zhou 1993[1297]: xviii). The late 12th century depictions on the Bayon of water-borne battles, said to be between the Cham and the Khmer, but now in some doubt, were said to have been fought on the Tonle Sap Lake (Cœdès 1968[1964]: 169-170; Mabbett and Chandler 1996: 106; Roveda 2003: 66).

Ground surveys, radar and remote sensing have revealed some sections of formalised Angkorian roads — to the north-west, west, north-east and south (Hendrickson 2007; LARP 2008) — together with associated structures: bridges (Bruguier 2000; Hendrickson 2007: 135-139), rest house chapels (Finot 1925; Cœdès 1992[1941]: 160-161; Im 1998; Hendrickson 2007: 139-146) and water tanks (Hendrickson 2007: 147-149). The regular placement of water tanks and the 'rest houses', the Sūryavarman II (1002-1050) period *temples d'étape* and the *gîtes d'étape* associated with Jayavarman VII (1181-1220) located along the north-west and east roads, are testament to the importance of the Angkorian period road network (Hendrickson 139-146). Yet the transport system was probably functioning earlier than this, because there are older dates for the cities and the temples connected by some of the roads. Thus, a road to Phimai was likely in existence at the time of Sūryavarman II, early in the 12th century, since Phimai was already a major centre, and the road arguably had military and trade importance (Freeman 1996: 154; Im 1998; Welch 1998: 213-4; Dagens 2003: 71).[33] Khmer armies were recorded well beyond the formalised road network, for example in conflicts against the Cham in the 12th century. Possibly the Khmer state did not maintain a large permanent army, but raised armies in the provinces where required (Mabbett 1978: 37-38).

[33] There are temples, older than Jayavarman VII, along the major roads and references to infrastructure in inscriptions (e.g. K. 1001/ 1022, K. 235/ 1052 and K. 254/ 1126). The expansion activities and conflicts of rulers between Rājendravarman and Jayavarman VII (see Appendix 1) would have required there to be some communication infrastructure (Hendrickson 2007: 194-195; 202-204).

Given the rather abrupt endings of some of the formalised roads, these may have been primarily for accessing areas near the capital (Hendrickson 2007: 253). We need to envisage, however, that much of the network of roads leading to Angkor may not, as yet, have been recognised, or may have disappeared. This holds for provincial roads too, for example a section in the south connecting Phnom Chisor to Prasat Neang Khmau (Hendrickson 2007: 128; Jacques and Lafond 2007: 145). The extent and effectiveness of the road network, and its relevance to state administration and trade, are considered again in Section 6.7.

Understanding communications is a key to understanding strategies for administration, as well as trade, ideological control and defence. Maps of the transport links help researchers both define the extent of the Khmer empire at different stages of its existence and model transportation times (Drennan 1984; Hendrickson 2007: 55-56). It has been estimated that people could have travelled about 20 km per day on foot (Deloche and Walker 1993: 284), while carts drawn by oxen or pack-oxen on dirt roads may have covered 12-19 km per day (ibid., 245; 251) or up to 24 km per day using buffaloes (ibid., 246).[34] On water, with favourable currents, the time and effort involved would have been considerably less (Leighton 1972: 161; 164-64; Dobson 2005).[35]

Hendrickson's (2007) study modelled Angkorian period communication routes throughout the empire, examining their development in relation to a diversity of operational requirements. The study used 21 sites[36] selected from the B. P. Groslier (1998[1986]: 260-261) description of the Khmer heartland (between the Se Mun Valley, the Tonle Sap and the Middle Mekong) associated with Angkorian period rulers, and having prominent temples (Hendrickson 2007: 178).[37] By connecting each temple associated with a particular king, he identified the maximum extent (communication corridor) for each king and the areas where the corridors overlapped between kings. The study found that the communication zones shared by the greatest number of Angkorian period rulers were around Angkor and to the north-east in the

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[34] These estimates are based on a study of transport and communications in India during the Mughal period. An average 24 km per day based on a compromise between walking and riding along good to poorly maintained roads, is estimated for 6th–7th century Northumberland (Dobson, 2005).

[35] Leighton's study of transportation in Roman and Early Medieval Europe compared the costs of moving different commodities by different modes of transportation. Compared with Roman times, land transport was relatively more economical in the Middle Ages, thanks to the increased number of horses and technological developments, such as iron horseshoes (Leighton 1972: 164).

[36] These were Phnom Cisor, Ta Prohm of Bati, Vat Nokor, Sambor Prei Kuk, Prasat Andet, Preah Khan of Kompong Svay, Beng Mealea, Koh Ker, Neak Buos, Preah Vihear, Vat Phu, Phimai, Phnom Rung, Muang Tam, Banteay Chhmar, Sdok Kak Thom, Phnom Srok, Vat Ek, Vat Baset, Banon and Prasat Don An. Major construction works by individual rulers are summarised in Appendix 1.

[37] Inscriptions not written by rulers but referring to them were also taken as evidencing a link between the temple, the greater communication network and the centre.

Angkor-Preah Vihear-Neak Buos regions. By contrast, sections along the Mekong River and the rich rice-growing area of Battambang were shared by only three rulers: Sūryavarman I, Sūryavarman II and Jayavarman VII (ibid., 199). In the first two centuries of Angkor, interest was concentrated in the north-east of Cambodia (Groslier 1998[1986]: 260-261). Notably Koh Ker, which may have been Jayavarman IV's temporary capital in the early 10th century, was located in the north-east.[38] Although royal communication corridors were restricted in extent up to Sūryavarman I, the zones of the succeeding rulers suggest communication over the whole road network, which had been incorporated at different stages at least a century before Jayavarman VII — with some established perhaps even in the Pre-Angkorian period (Hendrickson 2007: 203-204).

A number of provincial sites were located within easy access of important resources (ibid., 213). For example, Preah Khan of Kompong Svay is situated near the iron ore of Phnom Dek, and is the visible terminus of the east road. Phimai is at the end of the north-west road out of Angkor, which may have had its basis in trade that developed between the areas, one providing salt, the other fish (Welch 1998: 214-216). In Section 6.7, it is demonstrated that the communication network within Khmer territory was also linked to an extensive system reaching well beyond the Khmer heartland and that it was arguably linked to foreign trade routes. Several of the temple sites, such as Preah Vihear, were not located on major roads (Hendrickson 2007: 178), indicating that the sites originally served different functions, perhaps of religious or economic significance. Elevation above the plain, providing lookouts, as from Phnom Bok, Phnom Krom and Phnom Bakheng around Angkor, Preah Vihear to the north and Phnom Chisor to the south, would also have been important in the location of sites (ibid., 236-237). Some apparently isolated temples appear to have been linked to the communication network: Banteay Chhmar, for example, may have been linked to the extended Angkor network through a series of canals and rivers (Pottier 2004). Angkor and other regional population centres can be considered as nodes in the state's communications network (Section 2.3.4).

### 3.3.2 Formation of the Angkor state: Angkor and earlier capitals

Southeast Asian state formation and urbanism are commonly linked to hierarchical structures adopted to legitimise the power of chiefs (Wheatley 1983: 263; 321; Higham 2002: 229-297; O'Reilly 2007: 199). Today it is generally accepted that 'cities' serving different central functions were established in Southeast Asia by the middle of the first millennium CE (e.g. Bronson 1978: 260; Wheatley 1983: 307; Miksic 2000; 2001; Stark 2006). However, it can be

[38] Hendrickson (2007: 246) suggests this may have been a strategy to cut Angkor off from routes to the east through Wat Phu, as well as copper resources in the region of this ancient site (2007: 245).

difficult to categorise urban sites, or at times even to distinguish between urban and non-urban (Miksic 1995: 57; 2000).

Any discussion of the role of cities in the Khmer political economies is hampered by the fact that there is little information on the earlier and provincial centres of power and their associated populations. (See however Stark's (2006) archaeological research in the Mekong delta.) Few of the capitals of the Pre-Angkorian states have been identified, but it seems quite feasible that some of these are known to us by different names through inscriptions or architectural remains. Jayavarman I's capital has been discussed by a range of scholars and is claimed to have been Śreṣṭhapura (somewhere between Siem Reap and Kompong Thom), Vyādhapura (in Kompong Cham at Banteay Prei Nokor), Ba Phnom (in Prey Veng), Naravaranagara (possibly Angkor Borei) or Purandarapura (thought to be in Siem Reap Province) (Vickery 1998: 352-357). A number of other important Pre-Angkorian centres, including Indrapura, Jyesthapura and Īśānapura (probably Sambor Prei Kuk, the capital of Īśānavarman), are known from the inscriptions, though not located with any certainty (Vickery 1998: 409-414). The Chinese history *Sui-shu* refers to 30 towns in 7th century Cambodia with more than 1000 inhabitants (Wolters 1974: 371).

In the 7th century, there are indications (e.g. in K. 561/ 681) that Jayavarman I was able to 'reorganise and centralise control of land and wealth', having greater authority over other leaders and over a larger area than had earlier Pre-Angkorian rulers (Wolters 1974: 383; Vickery 1998: 294-295; 367-369). The 7th century, which produced many inscriptions during the transition from a maritime to an agrarian economy in the north, is in contrast to the 8th century, which produced very few inscriptions. According to Vickery (1998: 390-393), the latter was a period of economic development and political consolidation, evidenced by investment in the development of art and architecture. The 8th century division proposed by the Chinese historians into Land and Water Chenla may refer to concurrent development of Bhavapura in central Cambodia and of Śambhupura, near modern Sambor, whose territories included parts of north-east Cambodia (Vickery 1998: 392). The evidence for the 8th century is of alliances between the rulers of Aninditapura (located perhaps between Kompong Thom and Kompong Cham), those of Śambhupura and the so-called *–aditya* kings (thought to be based near Sambor Prei Kuk) (ibid., 384). The Jayavarman II period around the beginning of the 9th century represents the culmination of this process.

The accession of Jayavarman II saw a shift towards the Angkor area, from Vyādhapura (at or near Banteay Prei Nokor or Phnom Da), through south-central centres, arguably Indrapura and Bhavapura (both perhaps in Kompong Thom-Kompong Cham and possibly in the vicinity of Sambor Prei Kuk), to Amarendrapura in the north-west and Mahendraparavata in the Kulen, before settling at Hariharālaya (Roluos). The site of Angkor Borei, which was a political centre

of Funan, continued to be important into the Angkorian period, though not as a capital (Vickery 1998: 394-397; 409; Stark 2006: 106).

Jayavarman II appears to have brought significant land and regional lords into a 'single' domain by 802 CE. We can begin to discern a 'united' polity, and a series of single or at least preeminent capitals: Hariharālaya (Roluos); Yaśodharapura (Angkor); Koh Ker. Inscriptions from early in the Angkorian period indicate the state was subdivided into administrative divisions (*pramān* and *viṣaya*).[39] Sahai (1977a: 38-45) notes 10 *pramān* or *viṣaya* which could have been independent principalities in the Pre-Angkorian period and a further 8 which are mentioned only in Angkorian texts: the province of Lavo (Lopburi) is one which was incorporated in the early 11th century after it was conquered by Sūryavarman I. Zhou Daguan referred to over 90 prefectures in the kingdom (Zhou 1993[1297]: 63), while Wolters (1974: 369) suggests that the 23 Jayabuddhamahānātha images sent by Jayavarman VII to various parts of his kingdom may have represented the number of territorial units in the kingdom at the time.

A growing archaeological record is redefining earlier depictions of Angkor the city as an inhabited space (Groslier 1979; Pottier 1999; Garnier [1996-98]1873). Recent interpretations of remote sensing data by the Greater Angkor Project (Fletcher and Pottier 2002; Fletcher, Barbetti et al. 2003; Fletcher, Evans et al. 2004; Evans, Pottier et al. 2007; Evans 2007) are providing a comprehensive picture. Angkor was built around an extensive water management system which took water from the Kulen Hills in the north to the Great Lake in the south through a continuous and interconnected network of channels and embankments which would have doubled as roads and water distributors. Amongst the rice fields there were small scale residential features including house mound clusters, small ponds and small temples.[40]

Under a 'unified' state, albeit one fluctuating in fortune between gain and loss of territories, various regional centres may have changed in importance as part of the network for administration, trade, resource collection, maintenance of security, etc. How these centres functioned within an integrated network will be taken up in Sections 6.5 to 6.7.

### 3.3.3 Irrigation and hydraulic structures

The hydraulic system of the city of Angkor would have been important for ensuring its self-sufficiency in rice. It would have meant that the ruler at Angkor was independent of the great

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[39] Sahai, noting conflicting evidence for whether *pramān* and *viṣaya* are territorial or administrative terms, proposes that both are administrative and that *viṣaya* was introduced later without entirely replacing *pramān* (1977: 37).
Some of these areas are mentioned in texts of both the Pre Angkorian (when they may have been somewhat independent principalities) and Angkorian periods (e.g. Śreṣṭhapura and Vrai Vek) (Sahai, 1977: 38).

[40] Figure 2 shows the area around the city of Angkor, as prepared by Evans, Pottier et al (2007). Their full-scale map highlights over 1000 newly documented water storage ponds and more than 74 newly-discovered temples.

regional land owners, and that the capital was less exposed with its supply routes cut off and better equipped to resist attack. Yet while *baray* and small-scale ponds (Section 3.2.2 above) are referred to in the texts, there is no epigraphic evidence for large-scale irrigation works, such as dams and artificial channels.

The hydraulic structures at Angkor have been the topic of a long-standing debate, now largely resolved. On one side, the so-called 'functionalists' (Pym 1968; Groslier 1979; Dumarçay and Smithies 1995; 1998; 1998[1974]) claimed that the reservoirs supplied an elaborate and extensive irrigation system permitting intensified rice production of two or more crops a year. A major claim in support of the irrigation thesis was that Angkorian agriculture suffered from poor soils (Groslier 1998[1974]: 108)[41] and uncertain rainfall (Groslier 1979: 188), making irrigation necessary. According to this view, with water available all year round, it may have been possible to produce three or four rice crops a year, as claimed by Zhou Daguan (1993[1297]: 39).[42] On the basis of 20th century rice production data, Groslier (1979: 190-1) estimated that 600,000 people in the Angkor region were supported by hydraulic agriculture. A further 1.3 million were supported by flood recession[43] and dry rice agriculture.[44]

On the other side of the debate, several researchers have estimated the rice-growing area which could have been irrigated by the *baray,* and found it insufficient to feed the large population required for building and occupying such a city. Although Groslier qualified his calculations as being estimates based on specific assumptions, his assessments were considered too high (Bronson 1978: 178; Higham 1989: 352; Moore 1989: 212; Garami and Kertai 1993: 28; Acker 1998: 21). Some researchers even disputed the feasibility of irrigated dry-season crops (Van Liere 1980; Moore 1992; Stott 1992; Acker 1998; Higham 2001). They asserted that the Khmer did not have the technology for such a sophisticated system, that there were no outlets from the *baray*, that the structures had religious-symbolic meaning,[45] that rice was watered, as it is today, from the many small ponds and by flood-retreat irrigation, and that even if there had been irrigation, the system would have watered too small an area.

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[41] On the other hand, given these poor soils, intensive agriculture might not have been sustainable (Groslier 1979: 191-192; 1998[1974]: 115-116; Mabbett and Chandler 1996: 152-153).

[42] Planting different strains of rice in staggered cycles on different plots of land, to spread the risk of bad months and allow a variety of different crops to be grown may account for Zhou's impression (Mabbett and Chandler 1996: 153).

[43] Flood recession rice is grown in the fertile soils around lakes, rivers and reservoirs. The areas are flooded for 3-5 months. Sequential sowing is conducted as water recedes, from late October to February and harvesting can extend to late August (Javier 1997: 100).

[44] Dry rice agriculture carried out today in upland areas of Cambodia depends entirely on local rainfall. Shifting agriculture or slash-and-burn is the major production method. Productivity depends on the fertility of the soil (Javier 1995: 126).

[45] The structures were designed to be a replica of heaven as conceived in Indian cosmology. There is also evidence, even today, of a close association between religion and water in Khmer religion and culture (e.g. Groslier 1979: 110-14; Van Liere 1980: 273-74).

This debate was somewhat muted in the past decade by the demonstration, from ground mapping, remote sensing and archaeological excavation of channels, inlets to the *baray* and outlets from them, as well as some distributor and drainage channels, and water-control structures (Groslier 1979: 161; Pottier 1999: 110; 121; 2000; Fletcher, Evans et al. 2004; Evans 2007: 210; Lustig, Fletcher et al. 2008). While it is correct that the *baray* did not hold enough water for an additional fully irrigated crop in the dry season to support the city (Acker 1998: 21; Lustig 2001: 72), supplementing inadequate rainfall in bad years would have helped secure rice production. This would have allowed the population of Angkor, at least in its early phases, to be self-sufficient and independent of provincial areas. A model of minimising risk (Groslier 1979: 189; Lustig 2001: 88), rather than one of maximising production, therefore, seems to be the more appropriate description of the function of the *baray*.

The network is now understood to have served both a religious and practical function (Pym 1968: 74; Groslier 1979: 180; Engelhardt 1995: 25; 1998[1974]: 116). However, the debate was useful, in that it sparked interest in economic matters and in the relationship between settlement patterns and water management. A recent focus in this area has been the possible relationship between modifications to the water supply network and Angkor's weakening (Penny, Pottier et al. 2007[2005]; Fletcher, Penny et al. 2008; Lustig, Fletcher et al. 2008: 83-91).

## 3.4 Human resources and social divisions

Southeast Asian societies are held to have characteristics in common, ranging from their material cultures to kinship systems and concepts of leadership, status and legitimacy (e.g. Heine-Geldern 1956; Errington 1983; Higham 2002). This is scarcely surprising, given their common antecedents and the observed interactions between the polities. Wolters (1982: 1-15) refers to a Southeast Asian 'cultural matrix' of shared social and ideological structures extending from the first millennium BCE and through the Angkorian period, characterised by cognatic kinship and leadership by 'men of prowess' whose extraordinary qualities were able to draw others to them. Many writers have noted the Khmer propensity for defining themselves in terms of social and political hierarchies (Sahai 1978: 26-28; Chakravarti 1980: 43; Ebihara 1984; Zhou 1993[1297]: 7; 9; Vickery 1998: 175-274). This characteristic is shared with other Southeast Asian societies (Errington 1983; Geertz 1983; Wisseman Christie 1983: 21-23), where elaborate titles representing real and symbolic functions, insignia and sumptuary laws were used to distinguish position in society.

There has been a tendency to regard Khmer society in general as static[46] and conservative, an observed characteristic of its rural economy (Delvert 1961; Groslier 1979: 190; but cf. Chandler 1996[1983]: 2; 10-11) and noted also in the Cambodian trait of looking to traditional ways for how society should behave (Thion 1993: 96-97; Chandler 1996[1982]: 45-60; 1996[1983]: 2). Other apparent indicators of this conservatism are considered to be the late monetisation of the economy (Jacob 1979: 415; Wicks 1992: 191), the persistent use of the corbelled arch (Loofs-Wissowa 1986), and the use of Sanskrit up to the 13th century,[47] in contrast to the diminished role of Sanskrit in Javanese royal texts after the 9th century and its relatively early decline in Burma (Pollock 1996: 217-18; 226).

Referring to the colonial period, Thion (1993: 96-7) has written:

> Traditional Cambodian society consisted of 3 classes, peasants, officials and royalty. Very few Khmers became merchants, this class was composed mainly of non Khmers, generally Chinese…this division in society probably goes back to the Angkor period when national wealth was produced from the land and collected by the officials who channelled it to the court and religious apparatus, where it was used largely for building the temples and supporting the specialized population attached to them. A part of the wealth collected by the officials remained in their hands, for their support in lieu of salary, but this was accepted as the way in which the system naturally functioned. Each of the classes had a function believed essential for the welfare of the society, and in which the king's role was quasi-religious and ritual….

Thion (ibid., 98) observed that Khmer society was unusually weak in cohesion (See also Ovesen, Trankell et al. 1996):

> Village and family organization, especially if compared to that of China, Vietnam or India, were extremely weak. Khmer villages were not cohesive units, as in Vietnam, dealing collectively with officials; and beyond the nuclear household, families easily disintegrated. Extended family did not exist, records of previous generations were not kept, ancestors were not the object of a religious cult. Corporate discipline over the individual by extended families or by village organizations was weak, and once a person had fulfilled his obligations to the State – through tax or *corvée* – there was little constraint on his activities…..

This characteristic may in part have resulted from Angkorian expansion and centralisation destroying more cohesive pre-existing villages (Michael Vickery 2007, pers. comm.). This does not mean that populations were forcefully transferred. For example people might have

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[46] Chandler (1996[1983]: 11) argues that the idea of changelessness is somewhat of a myth — in view of the number of significant transitions undergone by Cambodia since the 1st millennium CE (see also Mabbett 1978: 8).

[47] Sanskrit was adopted by Jayavarman VII (1181-1220 CE) for almost all of his inscriptions of political, administrative and economic importance.

been attracted to the capital by the opportunities it provided (Gerard Diffloth 2006, pers. comm.).[48]

Nevertheless, the creation of the state of Angkor does appear to have resulted in disruptions to the original clan structure and creation of new divisions. According to Sedov (1978: 114), the integration of clans into a unified political system by Jayavarman II began the process of incorporating ruling elites and clan communities (*kula*) into *varṇa* and temple communities, ultimately linking theocratic and state functions. By the 10th century, rural communities were integrated into a state structure, consisting of *varṇa*, *varga* and religious institutions (ibid., 117). In the process, the territorial units of the clans became state administrative divisions, and the unity of the original clans was lost, as some of these were subdivided into branches geographically distant from each other and reorganised. The clan segments were headed by *mūla,*[49] descended from the founder of the clan branch (Sedov 1978: 120; Jacques 1986: 331-332).

*Varṇa* were assumed by the Sanskritists to be castes as in India, but studies point to something quite different and largely indigenous (Chakravarti 1972-73; Mabbett 1977). Mabbett (1977: 433) argues that despite the statements in poetic Sanskrit texts which suggest that royal control over *varṇa* (e.g. in K. 444/ 974 Jayavarman V claimed to have created two new *varṇa* ) meant control over subjects, this is not evidence of social engineering, since these corporations were not divisions of the general population, but of an elite stratum. In appointing people to *varṇa*, kings were in fact dispensing privileges and establishing bonds of obligation. Some *varṇa* had locality names but most seem to specify ritual and ceremonial functions, many associated with the royal court or state. Khmer *varṇa* may represent a stage in the development of a caste system and if it had proceeded as in India, economic differentiation of the population might have become widespread (ibid., 440).[50] When they were created, *varṇa* were given heritable property which seems sometimes to have been held commonly. Chakravarti (1972-73: 152) argues that membership of a *varṇa* was not hereditary, since people within even a single generation could be transferred to different ones.

What category of the population *varga* actually represented is unclear (e.g. Sedov 1967: 168), though their members appear to have been of lower social status than those of *varṇa*. At times

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[48] Sinopoli (2003: 108) cautions that the idea of groups being forced to relocate to work for temple foundations could be open to somewhat different interpretations: opinions on slavery, serfdom, ownership of resources, etc. tend to be tied to theoretical viewpoints on society and class.

[49] For example, K. 843/ 1025……*bhūmi jiracc cat caṃnat āyatta ta santāna añ ta mūla pradvān*…..(the land of Jirac, to found an establishment dependant on the people of my line who in future will be branch chiefs).

[50] The Khmer usage could be seen as the rulers 'confounding' the theoretical concept derived from India with the pragmatic of dealing with groups of dignitaries, and thus being able to 'defend the doctrine that the ruler controlled society in a way that in reality he did not' (Mabbett 1977: 440).

their name refers to a locality (Chakravarti 1972-73: 154; Mabbett 1977: 437). Following the reorganisation of the *varṇa* by Sūryavarman I, *varga* appear to have consisted of functional groups, such as artisans, gardeners, parasol bearers, under an individual after whom it was named (Chakravarti 1972-73: 154).

Vickery (1998: 271) has developed a model for the relationships between the Pre-Angkorian elites and commoners, which ranged from officials, *poñ* or *mratāñ*, at the highest level; at the next level people, often women in ritual or official roles; then dancers, singers, musicians and craft producers; and finally workers. Such a model, however, has not been formulated for Angkorian period society. Even so, a number of studies (below) allow us to appreciate some of its diversity.

### 3.4.1 The rulers

The nature of kingship is important for how — and how effectively — people, infrastructure and physical resources are controlled, and thus how successfully an empire might be sustained. Kingship in Southeast Asia, and Angkor specifically, has been analysed from many points of view. Themes repeated are: royal cults, the divinity of rulers and royal merit (e.g. Sahai 1970; Wolters 1973; Mabbett 1977b; Chakravarti 1980; Geertz 1980; Aung Thwin 1983; Vickery 1998); succession (e.g. Vickery 1998; Jacobsen 2003); and kingship and the adoption of symbols and strategies for asserting authority (e.g. Heine-Geldern 1956; Sahai 1970; Wolters 1973; Mus 1975[1934]; Aung Thwin 1976; Mabbett 1978; 1979; 1982; Wisseman Christie 1983; 1985; Junker 2004). Of particular interest, Stern (1951: 655) has pointed out a pattern seen in the reigns of four strong Angkorian kings — Indravarman (877-89), Yaśovarman I (889-900), Rājendravarman (944-68) and, following a 'zone of imprecision', Jayavarman VII (1181-1220) — the construction of major public works, as symbols of their kingship.[51]

Although Chinese texts identified the 'state' of Funan, and Chenla in the 7th and 8th centuries, (Smith 1979: 444; Vickery 1998: 32), Cambodia was not unified under one dynasty before the 9th century. There were, however, rulers calling themselves *rāja* and *īśvara* (in Sanskrit) and *vraḥ kamratāṅ añ* (in Khmer) (Vickery 1998: 143). Evidence of the shift from *poñ*-controlled chiefdoms towards states, as rulers acquired greater control over land and populations, can be observed in the inscriptions (ibid., 321-415). Vickery (ibid., 408) also points out the Cambodian propensity, which continued into the Angkorian period, of authority being 'linked to proximity to the sacred' (see also Wolters 1974: 436-437). The establishment by Jayavarman II of the

[51] The priorities of four of the Angkorian rulers - Indravarman, Yaśovarman I, Rājendravarman and then Jayavarman VII - show certain similarities, beginning with establishing major public works, such as a *baray* or restoration of the capital, the building of ancestral temples and a temple mount for worship of the state cult.

*kamrateṅ jagat ta rāja* (Sanskrit = *devarāja*) as the supreme deity of his realm,[52] may relate to claims by earlier *poṅ* to be linked to local *kpoñ* goddesses, although now the deity was male, with wider authority over the world (*jagat*). Pre-Angkorian elites and deities appear to have been part of a single hierarchy (Vickery 1998: 207; see also Maxwell 2007: 120). *Vrah kamratāṅ añ*, for example, was a title for gods and kings and *kuruṅ* (king) was sometimes used for gods. The titles *mratāñ (human)/ kamratāṅ* (human)/ *vraḥ kamratāṅ* (divine)/ *vraḥ kamratāṅ añ* (human and divine) also point to a hierarchical relationship between gods and elites.

Pre-Angkorian inscriptions indicate that in the second half of the 7th century, but not earlier, Jayavarman I held enough power to have a say in foundation matters (Wolters 1974: 383; Hall 1985: 151; Vickery 1998: 367-368). In the Angkorian period, the ruler's permission appears to have been required for many more foundation activities and the king was recognised as the highest judicial authority (Sahai 1976). This authority was commonly expressed through religious symbolism, explicit in the Sanskrit texts, where 'a vocabulary of religious grandeur was needed in order to give expression to an identity that could transcend the loyalties of the city states upon which Angkor was built' (Mabbett and Chandler 1996: 165). To the extent that the king's standing as *devarāja* was associated with prosperity through the secure supply of water to produce food (Sahai 1970: 36; see also Section 2.3.1; Mabbett 1978: 34; Hall 1985: 146-148), a deterioration of the water-control system would be expected to have adverse implications for his status. Angkorian period inscriptions, with the ubiquitous royal edicts and strict protocols, tend to impart an impression of strong central control, although the rulers, observing traditions of kingship, were not absolute despots (Cœdès 1968[1964]; 119; Mabbett 1978: 10; Sedov 1978: 115). As already discussed (Sections 2.3; 2.4), their control over other chiefs was variable and at times negotiable, not least because of distance (e.g. Wallerstein 1974; Naerssen 1976; Tambiah 1977; Mabbett 1978; Sedov 1978; Geertz 1980; Stein 1980; Wolters 1982; Wheatley 1983; Hall 1985; Higham 1989; 1995; Junker 2004). An important element of maintaining political alliances and hierarchies was prestige gift exchanges between allied leaders and between elite patrons and their supporters. This was common where leaders lacked strong hereditary claims to leadership or faced difficulties maintaining control (Polanyi 1957a: 262; Wolters 1982; 8; Wheatley 1983; Junker 2004: 224). The extent to which Angkor's rulers exercised control over their territories will be examined in Chapter 6.

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[52] According to the Sdok Kak Thom inscription, K. 253/ 1052, in a ceremony in 802 CE, which took place on Mt. Mahendra, Jayavarman II became *cakravartin* (sovereign of the world) in Kambujadeśa, which would no longer be dependent on Javā. At the same ceremony, the cult of the *devarāja* and the royal *liṅga*, identifying the king with Śiva, in 'a sort of apotheosis of the king during his life', is said to have been established (Briggs 1999: 89-90). For further discussion of Khmer royal cults, titles of gods and elites, see Cœdès (1968: 99-103; 119-20); Jacques (1985); Sengupta (2001: 65-117); Vickery (1998: 140-49; 423-5).

The seemingly irregular succession of the Angkorian kings has been remarked on many times (Sahai 1970: 16; e.g. Higham 1989: 323). According to Vickery (1985; 1986) the system resembled a 'conical clan', depending on hierarchical ranking from a claimed clan ancestor. The individual members and the lineage branches were ranked according to the rank order of sons, so that it was normal for succession to pass between brothers or between cousins. All descendants of the dynastic founder, whether real or mythical, had some claim to the throne. However, the ranking became more complex and open to reinterpretation with succeeding generations and this often resulted in conflicts and so-called usurpations.

### 3.4.2 The elite: offices and titles

While the ruler issued directives and judgements, it was the officials who informed him, implemented the directives and enforced the rulings. Many of these officers had both secular and religious responsibilities. The numerous titled officials referred to in the texts are the founders, donors and individuals acting in their official roles in the administration. These roles were generally in the establishment and management of the religious foundations, for example in the transmission of royal edicts and in the resolution of disputes over property. Many also levied sections of the population. The majority of the texts produced by officials are from approximately the mid 11th century to the mid 12th century, a period of relatively few royal inscriptions. The relative importance of the official families and the concentration of power in the hands of a few of these can be seen in some of the genealogies (Briggs 1999[1951]: 142-158; Vickery 2002: 94).

The complexity of the system of Angkorian status titles was noted by Chakravarti (1980: 54-58) who attempted a secular and sacerdotal hierarchy for them, though this dichotomy was disputed by Sahai (1978: 28-30). Several authors have observed changes which took place between the Pre-Angkorian and Angkorian periods and during the Angkorian period (Sahai 1978: 28-30; Chakravarti 1980: 152; Vickery 1998: 190-206; 406-408; 2002: 82; 98-99). These included the disappearance of *poñ* in the 8th century and the introduction of *vāp, loñ, chloñ, kaṃsteṅ, teṅ, teṅ tvan* and *steṅ/ steñ* in the 9th century. From the reign of Sūyavarman I, there was a decline in the status of descendants of followers of Jayavarman II, the *vāp*, *loñ* and *teṅ* (previously seen as relatives of kings), and the ultimate disappearance of *vāp* and *chloñ*, while *mratāṅ/ mrateṅ,* who had declined in importance in the 9th century, became more common again.

As yet, relatively little research has been carried out on the administration of the Angkorian Empire, two exceptions being Sahai's (1970) study of the organisation of political institutions and Chakravarti's (1980) documentation of some socio-economic aspects, both using Indian models for analogy. One obstacle to interpretation of the roles of many of the officials has been that many of the terms for the titles and administrative functions are in Old Khmer and

their precise meaning is poorly understood. Nevertheless, their responsibilities can usually be broadly categorised for analysis.

Sahai (1978: 18), observed the multiple roles of officials and considered that the epigraphic record suggests a very complex picture, with rank, insignia and jurisdiction all playing a part. The epigraphy has numerous examples of rulers granting insignia, based on rank (ibid., 26-28): these were mentioned by Zhou (1993[1297]: 9) in the late 13th century. Administrative officials were classified in four divisions, apparently horizontally arranged, which may have had a geographical basis, but about which little is known (Sahai 1978: 18). At least some administrative posts were hereditary, especially in the Angkorian period. For example, the *purohita* and the *yājaka* usually seem to have been hereditary officials and a single family was said to have been in charge of the *devarāja* cult for a period of 250 years (ibid., 24-25). A number of positions close to the kings *(purohita, hotar, guru*, *ācārya* and *guṇadośadarśi)* are referred to in Angkorian period inscriptions written by officials. These tend to be Sanskrit terms which had religious connotations, but as Vickery (2002: 93) points out, some of these became secular, as in India, and perhaps were so in Cambodia from the start. Researchers are not in agreement on issues such as whether certain roles and titles had to be held by Brahmins, could be held by women or were hereditary (Mabbett 1978: 33; Sahai 1978: 28; Chakravarti 1980: 53).

Angkorian period villages had an internal administration and hierarchy, headed by *khloñ sruk*, who were sometimes in charge of groups of temple workers. Elders (*grāmavṛddha*) and notables (*puruṣapradhāna*) are referred to as witnesses in disputes over land ownership. There were fiscal agents (e.g. *khloñ sru*), judicial administrators (*vraḥ sabhā*) and inspectors of qualities and defects (*guṇadoṣadarśṣin*) at village level. These local officials often appear to be of lower status than the founders and state administrators.

Based on his observation of the roles of various officials, Mabbett (1978: 30-32) has suggested that there was no clear demarcation between the organisation of the state's bureaucracy and that of temple administration. The complexity of titles and the various offices with overlapping roles and cross-cutting loyalties, observed in the court appointments of Cambodia in the 19th century,[53] led Mabbett to propose that the dispersal of functions in such a system would have prevented the consolidation of power at any single point. This 'confused and intractable social reality, in which the ruler's power to innovate was strictly limited' may have had its antecedents in the Angkorian period (Mabbett 1977: 440; see also Ebihara 1984: 258). The effectiveness of Angkor's administration will be assessed in Section 7.5.4, in light of

[53] In early 19th century Cambodia, a complex system was established by each new ruler, since at that time 'positionings and entitlements were the essence of politics', explaining and amplifying propriety, 'putting each person "in his place", and thus setting him "above" or "below" other people' (Chandler 1996[1979]: 109).

the Angkorian period concern for status and hierarchies. It might, however, be noted that such a system is not unique. Mabbett (ibid., Note 97) comments that there were similar appointments in Indochina until recently. Talbot (1994: 267-268), in a study of the Kakatiya administration in South India, found the complexity of official titles in the later stages of the polity (1175-1325 CE) so great, that it was difficult to even conceive that there was an organised bureaucracy.

### 3.4.3 Non-elites

There is very little information about the working lives and the status of the many individuals designated as *kñuṃ/ khñuṃ*.[54] The labour of non-elites was responsible for the building and maintaining the monumental temples, roads and irrigation works, producing food and, as members of armies, opening up new territories and defending the state. The question of whether they were slaves or servants is still debated.[55] These people, appearing most commonly in lists of temple personnel in the inscriptions, are almost never seen as active agents.

A pointer to the status of workers is the design of Khmer temples. It is likely that the bulk of the population never gained access to the temples beyond the outer areas.[56] Certainly, the labouring populace were distinguished from their superiors by their inability to participate in a milieu which expressed ideas about religion and state authority in symbolic terms using foreign expressions. A major indicator of status, even today in Cambodia, is literacy, and the language and genre of the inscriptions point to an audience of elites (Section 5.2.1).

Sedov (1967: 181; 1978: 123-24) classed all the 'non-free direct producers', composed, he thought, of conquered mountain tribes, prisoners of war and criminals, as *khñuṃ*. He thought their status was close to that of slaves because while they were given land, this was insufficient to provide for their subsistence and would have needed supplementing. There is, however, no evidence for this interpretation. At least in the Angkorian period, it is possible that

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[54] The Pre-Angkorian form of the word is transliterated as *kñuṃ;* for the Angkorian period, it is *khñuṃ.* Where only one of these forms is used in this thesis, it refers to data from the relevant period. Where both are written, then reference is to both periods.

[55] In Pou (1992) *kñuṃ* (*khñuṃ*) is defined as 'inferior, servant, slave'. Jenner's (2009; 2009a) interpretation is broader: a person assigned to unpaid labor: slave, serf, bondsman or a person assigned or offering himself to the service of divinities or sanctuaries. See also Vickery 1998: 439-440 where it is argued that the Pre-Angkor period should be studied by itself.

[56] South Indian temples appear to be more of a 'public' building with space for people to sit, contemplate and socialise than can be perceived in the Khmer spaces. In south Indian temples there are distinct architectural spaces designed to corral individuals so that they may be ushered in front of the image. These may be contemporary with the structures that hold the images. This kind of space is uncommon in Khmer temples, particularly of the Angkorian period, where the devotee generally had to climb a terrace to see the image. Congregation spaces became more important with the introduction of Theravada Buddhism in the 14th century in Cambodia, somewhat earlier in other parts of Southeast Asia (Martin Polkinghorne 2006, pers. comm.).

*khñuṃ* worked part of the time for the temples and the rest on their own lands (Jacob 1979: 412) in villages. Records frequently show temple workers were assigned for the 'clear fortnight' or the 'dark fortnight',[57] which suggests they were otherwise free to produce food for themselves. The allocation of rice fields to *khñuṃ* is recorded in K. 254/ 1126. The total amount of rice they received from the temple fields was considerably less, only about one seventh of the amount the *purohita* (chaplain) was allocated (Lustig 2001: A14-A18). Sedov (1967: 173) suggests this was because they were given the food left over from the offerings, as would seem likely. In K. 702/ 1025, rice fields were assigned to cooks, leaf weavers, musicians, etc. who were termed *dāsa* or slaves in the Sanskrit, but *khñuṃ vraḥ* (slaves of the god) in the Khmer part of the text, here suggesting higher status. In Pre-Angkorian Sanskrit inscriptions, the people assigned to the foundations are called *dāsadāsī* (commonly taken as slaves). However, the meaning of *dāsa* and its relationship to the Indian *dāsa* and *devadāsī* is not yet understood (Vickery 1998: 228-230).

Jacob (1979: 407-408) makes the distinction between the Pre-Angkorian *kñuṃ* ('slaves') and non-elite free people (peasants, craftsmen, traders, religious personnel, families of officials). The interpretation 'slave' may have appeared obvious to scholars who noted the considerable number of Khmer inscriptions in which slaves were regarded as subject to sale, gift, inheritance, mortgage and hire, though predominantly in the Angkorian period. *Kñuṃ* could be given, bought and sold with the land they worked; and did not have 'legal' families, in that children were recorded almost always with their mothers (Sedov 1969: 339; Jacob 1979: 411; Vickery 1998: 259). Vickery (1999a: 72) notes working groups listed by their territory of origin, some quite distant, in the inscriptions of Roluos, and cites this as possible evidence of increased royal family and political linkages over wide areas in the post-Jayavarman II period (ibid., 81).

Vickery (ibid., 260) remarks on a female-male imbalance in some temple personnel lists of the Pre-Angkorian period, and suggests this could indicate 'weak families in the lowest classes' (i.e. descent determined through females) or a 'matrilineal tendency' in early Cambodian society, with children belonging to their mother's group. He also comments that such an imbalance in rice-growing foundations might point to production units rather than communities (ibid., 311). Preliminary work for the present study showed that this imbalance was consistently 3 females to 2 males and applied to the Angkorian period as well (Lustig, Evans et al. 2007: 21). The extent to which those who were working for the temples were sustained by a temple or state redistributive economy is taken up again in Section 4.3.

At the end of the 13th century, Zhou Daguan mentioned captured hill tribesmen in hereditary service with households in central Angkor. He reported some families had more than a

[57] This depended on the phase of the moon.

hundred of these and only the poor had none (Zhou 1993[1297]: 21). While this may be exaggerated or incorrectly interpreted, captured labour from the nearby hill communities is not unlikely. However, there are no records of this in the inscriptions. The Chams, the Burmese and other groups referred to in K. 273B/ 1186 and K. 908/ 1191 (Cœdès 1992[1906]: 44; 1992[1941]: 165), who may have been prisoners captured in war, mercenaries or people under feudal obligation, were not necessarily treated as slaves.

Jacques (1976: 71-76) considers 'slave' to be inappropriate for any *khñuṃ* who worked for the gods, and many of those working in the temples cannot have been slaves in the Indian sense — though, as Jacob (1979: 423) points out, Khmer society may have differed in this respect. Today many scholars consider it unlikely that the majority of these people were 'slaves', and the term is often glossed as 'servant' (e.g. Vickery 1998: 225; Long Seam n.d.: 134). Probably no-one among the working or common people in a pre-modern society such as Angkor's was free in the sense understood by many in modern societies (Jacob 1979: 419; Vickery 1998: 226; 274). Analogies with pre-state African societies suggested to Vickery that *kñuṃ* originally may have been juniors by age as well as by political and economical status in families or lineages.[58] His study of the Pre-Angkorian period showed that the status of the *kñuṃ/ khñuṃ* probably changed over time (Vickery 1998: 273-274).

The various ways of denoting workers other than simply as *kñuṃ/ khñuṃ* (e.g. the *kñuṃ/ khñuṃ vraḥ* appearing in Pre-Angkorian and Angkorian texts) suggest that their status was complex (Jacob 1979: 412-413; Chakravarti 1980: 149-198). Moreover, the status of the categories may have changed over time. Despite the Sanskrit connotation, not all Khmer *kñuṃ/ khñuṃ* were 'absolutely un-free and property-less' (Jacob 1979: 408; Sanderson 2003-4: 395). Indeed, some 'slaves of the god' in Khmer temples may have been of high birth (Sanderson 2003-4: 398).[59] The use of kinship terms for workers in both Pre-Angkorian and Angkorian inscriptions suggests that they 'were not lacking in dignity' (e.g. Jacob 1979: 410). Sanskrit names were not the prerogative of the elite, but were also common amongst *kñuṃ* of all categories. However, personal names in Khmer sometimes suggested bad qualities and seemingly personnel of low status (Jacob 1979: 412; Vickery 1998: 274). Vickery (1998: 271) observed that in the quite stratified Pre-Angkorian society, dancers, singers and musicians could sometimes be *kñuṃ* and the personal names of these could be either 'complimentary Sanskrit or ordinary Khmer'. Seemingly below them were craft specialists (weavers and leaf sewers, etc), mostly designated as *kñuṃ*, groups called *ple*, male *camdak* (artisans?) and

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[58] By the time the Pre-Angkorian texts were written, Vickery argues, there were distinct classes, but some *kñuṃ* were still considered juniors to *poñ*, *mratāñ*, etc. In other words, their dependence was now based on birth instead of age (Vickery 1998: 274).

[59] Even so, people of high rank could become enslaved. In K. 158, a convicted person, with his family and lands, was given to the litigant (Sanderson, 2003-4: 399).

finally field workers, whose duties are mostly not specified, again mostly *kñuṃ*, but occasionally *ple*.

Artisans and craftspeople are very rarely mentioned in inscriptions. Some conceivably had higher status than temple workers. While weavers were 'given' to the temple in K. 155/ 8th c., and, in K. 205/ 1080, there is a reference to an individual who was 'chief of the royal artisans', possibly a builder or sculptor under Udayādityavarman II, and unlikely to have been of low social status. In the Pre-Angkorian period, the lack of mention of the artists and stonemasons[60] could have been because there were few of them outside the larger cities (Vickery 1998: 313). However, recent research indicates that by the 8th century there were networks of attached specialists employed in temple construction and decoration under the patronage of political elites, perhaps differing from their counterparts in India, whose work was directed by guilds (Polkinghorne 2007: 189-190). Today, as in many parts of Asia, craft production in Cambodia in wood, ceramics, metal, stone and textiles is carried out in communal workshops and at household level, often in specialist villages and this is probably an established tradition (Delvert 1961: 263-287). The conditions for artisans and craftspeople in other contemporary societies varied considerably and we have some knowledge of the social and economic status of craft producing communities, such as in Vijayanagara[61] and Pagan.[62] A common feature is that the mode of payment and mobility of different craft groups depended on the importance of their production to the society.

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[60] In the Pre-Angkorian period smiths, carpenters and other craftspeople may have been included in the category called *caṃdak*, attached to the temples (Vickery 1998: 313).

[61] In the Vijayanagara period, these tended to be members of hereditary groups, which were sub-castes or lineages. The concept of caste was complex and occupational identity cut across heredity in determining social identity. Groups of mixed occupations (notably the *valangai* and *idangai* divisions) would act corporately (Sinopoli 2003: 97-99) and were able to wield considerable influence in some instances (ibid., 102-103). Textile production was important, being highly specialised and a significant export. Textile producers are referred to in inscriptions in various capacities, as donors and temple functionaries, taxpayers and recipients of tax concessions. Village weavers working in households were of lower status than those living in and around temple towns (ibid., 170-179). Perhaps because earthenware was considered impure as food utensils, Vijayanagara potters were of low social and economic status. They are seldom mentioned as temple donors or functionaries. (ibid., 238-239). They would have been organised in small workshops, probably at household level (ibid., 247).

[62] In Pagan society where there was apparently little social mobility, the population tended to be divided and living according to occupation and ethnic origins. Status was further limited by the hereditary categories of 'public' (having an official function) or 'private' (artisans, merchants and peasants with no service obligations) and by whether the person was an indentured (*kywan*) or paid worker (*asañ*). Artisans responsible for Pagan's temples and musicians belonged to the latter group, and were paid in cash or kind according to their skill, while lower status workers such as cooks, hunters, and food vendors tended to be *kywan* (Aung Thwin 1976: 208-211).

## 3.5 Conclusion

This chapter has set out what is known about Angkor's physical and biological resources, the infrastructure which developed to exploit these, the labour which produced the wealth using this infrastructure, and the complex administrative systems which organised the labour. Issues which arise from the discussion are concerned with how resources were used or contributed to processes and strategies for sustaining the Khmer state.

Resources could be moved along an extensive network of roads and waterways, between nodes which were regional population centres. The Khmer communications network facilitated the state's administration and trade, and ultimately its accumulation of wealth. The inscriptions, with their locations and dates, can provide information to enhance our understanding of this network and the administration of the state. Issues that have arisen are:

- how the network developed;
- the location of regional centres;
- the functions of regional centres;
- the feasibility of transporting resources throughout the empire.

Rice, the basis of the state's wealth, was the staple food and a principal taxation commodity. Non-elites produced the food and other resources for the empire, and built and maintained the infrastructure and the monuments. How the temple workers, commonly called *kñuṃ/ khñuṃ,* were sustained is not clear, and the role of redistribution in the economy is an important issue. This raises the question:

- whether the temple workers were supported by the temples or grew food for themselves.

Various forest products were prestige commodities for local consumption and traded as exports. Issues are:

- how important Khmer exports were to international trade;
- how the state accessed resources and trade routes beyond its territories.

The rulers are depicted in the inscriptions as possessing significant powers and virtues, often expressed in terms of religious symbolism, especially in the Sanskrit texts. This raises questions concerning:

- the importance of the ruler to the integrity of the state;
- the extent of central (royal) authority;
- the relationship of rulers to elite factions and the temples;
- the relationship between rulers and other elites.

The complexity of official roles and titles in the Angkorian period raises questions about:

- how the administrative structure functioned;
- the roles of officials;
- changes to the administrative structure.

To administer this primarily inland agrarian empire, covering large areas having low population densities, to ensure the loyalty of provincial elites, to expand its influence and to build infrastructure and monuments required funding — based on wealth from taxation and exploitation of Angkor's physical, biological and social resources. The exploitation of the different resources in a sustainable manner within a complex political economy like Angkor's required effective systems of production, distribution and exchange.

# 4 Debates about money, markets and trade

> [Vap Vāp respectfully informed the king] that the rice fields Stuk Sno, Pak Rvāt, Travāṅ Krasāṅ and Chok Rhvit had been sold by Vāp Yo Rlaṃ Pañjal to Me Neṃ, grandmother of Vāp Sah, guardian of the holy registers, for 1 elephant, 1 silver bowl (weighing) 5 *liṅ*, 1 vaudi (weighing) 6 *jyaṅ*, 1 copper basket (weighing) 7 *jyaṅ*, 1 *yo* and (1) *vlaḥ* of *jñaśira*; but concerning the ownership of these rice fields, when Vāp Yo Rlaṃ Pañjal was dead, his descendants Vāp Sat, Vāp Hi, Vāp An and Vāp Ṛsi contested this and claimed new goods; and that Vāp Sah and his family had given 200 (measures) of paddy and 5 spittoons to these people and brought a *Raṅvāṅ* to trample the ground, to plant the markers there and give the ownership of it back to Vāp Sah and his family.
>
> K. 158 (1003 CE)

> No gold or silver is found in this country, to my knowledge; most in demand are Chinese gold and silver: next come figured silk fabrics woven with light or double thread.
>
> (Zhou 1993[1297]: 45)

## 4.1 Introduction

Issues of money, markets and trade will be outlined in this chapter to provide the context for Chapter 7, in which the epigraphic data is used to analyse Angkor's material economy. Various interpretations of pre-modern economies will be discussed and their relevance will be considered for Angkor's economy, comparing aspects of Angkor's economy with other contemporary states. Some explanations offered for the economic behaviour of early polities have been based on Karl Polanyi's Substantive Economics. Angkor's apparently limited interest in markets and trading has been held to accord well with Polanyi's concept of a redistributive economy. Difficulties with this interpretation — that redistribution is rarely seen to operate other than at a local level, and that the existence of price-setting markets has been underestimated — will be reviewed.

To investigate the economic processes and strategies for the Angkor state's accumulation of wealth, modes of valuation in markets and the function of the unit of account are discussed. The evidence for Angkor's collection of state revenues, its control of resource production and distribution, and its trade are compared with that for other states. An important issue for consideration is the relationship between money and trade, including whether the lack of money in Angkor's complex society was an impediment to foreign and domestic commerce. Cambodia did not mint coins until the 16th century (Cribb 1981). Possible reasons for Angkor's lack of money — that it was deficient in reserves of precious metal, that it had a controlled or command economy, or that it was not a trading state — will also be examined and appraised as doubtful.

## 4.2 The basis of wealth in pre-modern Southeast Asia

In Southeast Asia, rice, still grown by most rural households today, was the dominant food staple in pre-modern times (e.g. Reid 1988: 18). In the Khmer inscriptions, it was the principal commodity supplied to temples and their personnel and was frequently included in lists of items given as payments in elite contexts. This indicates it was a principal exchange commodity for household transactions, and hence important in the rise and sustenance of the Khmer state. Rice production was the basis for early trader cities in Southeast Asia. In a contemporaneous agrarian Java, the ability to produce surplus rice is said to have led to the development of their high degree of social and political integration (Hall 1985: 3).

The predecessors of Pre-Angkor and the Angkorian Empire, the trading centres in Funan, also said to be underpinned by rice surpluses (Fox and Ledgerwood 1999; Stark 2006: 100), reached their greatest prosperity in the mid 3rd century, with Chinese envoys noting their wealth. The 1st to 5th century site of Oc Eo on Vietnam's coast, then on the east-west maritime trade route, has produced, among other artefacts, a Vishnuite silver coin and a Roman gold medallion (Malleret 1959-62; Coe 2003; 66-67), but there is no evidence that Funan minted its own coinage (Sahai 1971: 94; Wicks 1992: 186). Indeed, the Chinese reported that taxes in Funan were paid in gold, silver, pearls and perfumes (Pelliot 1903: 252). A change in sailing routes in the 6th–7th century, which bypassed coastal Cambodia, coincided with a gradual shift of the population towards central Cambodia, where the economy depended much less on maritime trade, and more on the agrarian sector and overland exchange (Vickery 1998: 20; Lieberman 2003: 217).

Some researchers have argued that the shortage of labour relative to the supply of land in Southeast Asia led to control of people rather than land becoming the main source of wealth and power, and an object of competition (Section 3.2.1). To this end, rulers who could not control more than a central core area directly, would have had to form alliances with regional elites who controlled peripheral populations (Hall 1985: 4-5). On the other hand, securing new lands for a growing population has been suggested as a basis for Jayavarman II's campaigns and migration to the north (Vickery 1998: 393). Notwithstanding, the measure of wealth for the people establishing their foundations was expressed in the Khmer inscriptions as the possession of land, albeit with attached labour forces of local villagers or previously unattached villages granted by rulers.

Individuals given lands by the ruler or purchasing them could set up estates and construct temples. The land's income from the production of the land and the labour of indentured workers could be 'tapped for redistribution by the family to its supporters' (Hall 1985: 137; 159), the immunities from taxation and other levies (Section 8.3) being an additional benefit. Because the exemptions to the foundations were given in perpetuity, the total of all the

taxation immunities granted would have had a cumulative impact on the finances of the Khmer state (Sahai 1977b: 134). The impact of this is known for other states, which encouraged the establishment of religious institutions through gifts of land and tax exemptions, or allowed merchants to profit from tax farming. For example, in Pagan, where the Buddhist *saṅgha* were able to take over the land's production rights, the temples and clergy became extremely wealthy and powerful, largely through fiscal immunities. Eventually and periodically their lands and property were confiscated by the rulers in an exercise described as 'purification' of the *saṅgha* (Aung Thwin 1976: 224-5; 1985: 169-209). In Java, the *sīma* grants, made in perpetuity to religious communities, were curtailed in the 11th and 12th centuries and replaced by increasingly elaborate titles and other status symbols, as rulers attempted to gain more control over their income (Wisseman Christie 1986: 83; 1998: 354). In South India, the Chola attempted to counter the power of merchants by weakening the power of regional authorities, and the rulers of Vijayanagara moved to enhance their authority by appointing military governors with loyalties to the centre (Section 2.4.1). The Khmer inscriptions provide no immediately comparable information.

## 4.3 Redistribution, money and markets: Polanyi's economics

Researchers have observed that Angkor was not monetised and have expressed the opinion that markets and trade were not held as a priority by the Khmer (Section 4.6.3). This opinion derives from the theories of Polanyi (Polanyi 1944; Benet 1957; Oppenheim 1957; 1957; Polanyi, Arensberg et al. 1957; 1957a; 1957b; Polanyi and Rotstein 1966; Finley 1973; Dalton 1975), which were based on the economies of primitive and 'archaic' societies.

According to Polanyi's concept of substantive economic meaning, formal economics was not useful as a universal paradigm in non-market economies. Polanyi considered the interdependency of money, markets and trade to be a relatively recent phenomenon. Money was introduced for different purposes which are not necessarily interconnected. Price–setting markets were not important, since exchanges were based on reciprocity and economies functioned through redistribution. Reciprocal transactions were 'embedded in social symmetry' whereas redistributive transactions were underlain by central authority (Polanyi 1957a; Dalton 1975: 82). Early foreign trade was administered, based on treaty relationships and took place in the port of trade, Ports of trade were controlled by the authorities to ensure isolation was maintained (Polanyi 1957a: 263; Dalton 1975-4). Imports were primarily prestige goods for the elite (Dalton 1975: 102). Polanyi's paradigm was adopted by economists such as Dalton (ibid.) and extended by anthropologists, in particular Sahlins (1972) who deconstructed reciprocity and redistribution in primitive societies, and Neale (1957) for Indian villages. Historians of the Ancient World, such as Finley (1973), developed the idea of reciprocity in Ancient Greece, and Oppenheim (1957) applied the theory to Assyria — though he identified both a redistributive

sector for the palace and temple and one allowing private land ownership for urban dwellers. In studies of the Inka economy, Murra ([1956]1980) and others, following the work of Polanyi, saw redistribution as the organising feature of the village and state revenue system of the Inka Empire.

In this school of thought, money would have arisen, not as a medium of exchange, but as a social relationship in non-market economies (Henry 2004; Hudson 2004; Innes [1913]2004) and predates coinage.[63] For example, in ancient Egypt they argue that this may have accompanied the transition from egalitarian to class society in the period 3200-3000 BCE, when some previously reciprocal social obligations shifted from operating within the clan to non-reciprocal requirements, or taxes, levied by ruling classes in the name of a semi-divine king. The *deben,* an arbitrary standard, referring successively to a weight of grain, copper or silver, was introduced to account for tax obligations and annulment. Although such a unit of account could become a medium of exchange, in Egypt it did not, and payments were made in a variety of goods, such as textiles, metal vessels, beaten metal and honey, equated commonly with the *deben* (Grierson 1977: 31; Henry 2004; 92-95). Both the Persians and the Greeks had difficulty popularising the use of coins there and Egypt adopted coinage much later than other Mediterranean countries (Einzig 1966: 193-202; Bleiberg 1995: 1377). The Ptolemys (323-30 BC) ultimately resorted to promoting grain for monetary use instead, even establishing grain banks (Einzig 1966: 201-202). Babylonia and Assyria in the 3rd millennium BCE differed in that while the value of goods bartered was stated in units of silver, silver (in the towns) and grain (in rural areas) were also used as media of exchange, with a fixed exchange rate between silver and barley (ibid., 203-209).

After the demise of some early 'Indianised' trading polities from the 4th century CE, coinages that had been in use in a number of areas of Southeast Asia, possibly including Funan, disappeared. This indicates that some significant economic changes were occurring in the realignments of trading polities and along major trade routes (Pelliot 1903: 251-2; Hall 1985: 69-75; Vickery 1998: 325; 377; Mitchiner 2004: 1286-90). The lack of reports of money in the Khmer inscriptions confirmed the primitive nature of Khmer society to some Sanskritists (Sahai 1971: 92-93). This, together with the few mentions of market activity, added support to the opinions of Polanyists. Some researchers inferred that the rulers of states which succeeded the trading polities implemented redistributive economies in order to monopolise the allocation of precious resources.

A number of pre-modern Southeast Asian economies have been described as redistributive (Wheatley 1975; 1983), and this has been applied specifically to Pagan (Aung Thwin 1976;

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[63] The earliest known coins are from Asia Minor (from 6th–7th century BCE Lydia), where they were issued for payment of public debts (Innes [1913] 2004: 14-17), and China (see Note 67 on cowries).

1985) and Angkor (Wheatley 1975; Hall 1985; Miksic 2001; 2006), where significant portions of the economies were centred on and around the monasteries and temples. Furthermore, it has been suggested, and will be discussed in Section 4.6.2, that the lack of coinage in states such as Angkor, Sukhothai and Pagan, is linked to surplus wealth being redistributed through the monastery and temple complexes.

In the model of the Temple Hierarchy (Section 2.4.2), Hall (1985) describes Angkor's temples as centres for the redistribution of resources, with the state claiming a small proportion. But how this was accomplished, in particular how the state taxed villages which were not integrated into the temple system is not made clear. The transfer of nominal quantities of resources from feeder temples through 'central temples' to the state temples was originally suggested by Sedov (1967). Hall's assertion that the temple network system allowed the state to dispense with a large mechanism for tax collection does not, however, accord with his later argument that the resources transferred were only token in amount. Sedov (1969: 227; 339) referred to temple granaries, and while these would have existed if rice was to be shifted in bulk, there is no epigraphic or archaeological evidence yet for them at temples or elsewhere. Miksic (2001: 7; 2006: 9) has suggested, as a logical solution to this conundrum, that the Khmer had an administered economy, with decentralised communal facilities for feeding and clothing people, i.e. redistribution at a local level. The only recorded allocations of food to temple personnel are to people with ritual responsibilities and higher status temple servants (Section 3.4.3). Much of this distribution appears to have been food for the deities (e.g. *carū*), perhaps reassigned after having been given to the gods or provided to officials for ritual purposes. At Phnom Bakhen (K. 684/ 10th-11th c.), a state official is given *yajñaśeṣa*, that is, what is left over from the sacrifice — showing that such reallocation occurred.

There appears to be little evidence to support Polanyi's thesis of redistribution on a large scale — that resources passed from central storages back to producers.[64] Morris (1986: 65), for example, considers that there is not sufficient evidence that subsistence goods found their way back from state storehouses to villages in the Inka Empire, but rather that they were actually used to support local authorities. D'Altroy (1992: 67-68) argues that the production and movement of the goods were organised to allow elites to build their power bases. The flow of goods into the central elite sector provided subsistence support for the elite sector and the means of ceremonial and political disbursement of prestige goods.

In addition to the process of economic redistribution, Wheatley (1975: 254) identifies 'mobilization', originally proposed by Smelser (1959) as a type of redistributive exchange, and

[64] There is documentary evidence of royal granaries on the crown lands of Pagan (e.g. Aung Thwin, 1985: 112-13; 171; Tin & Luce, 1923: 127; 142), but no information about any people sustained from these. The archaeological evidence of Inka storage depots (D'Altroy 1992: 163; 2002: 280-285) for subsistence goods to feed armies and specialised workers does not provide an analogy for Angkor, since Inka organisation of society was very different from the Angkorian structure.

considered more appropriate for describing the extraction and subsequent transfer of resources away from the producers to political elites, than subsistence through redistribution (Brumfiel and Earle 1987: 3; D'Altroy 1992: 150). A monopoly over key aspects of the economy — such as foreign commerce, prestige goods, or wealth, and over the symbols of power — can sustain and be used to further enhance the power of elites. It has been argued that elites deliberately employ 'specialization and exchange to create and maintain social inequality, strengthen political coalitions, and fund new institutions of control…' In a marketised system, this may lead to replacement of the payment of specialists in staples with payment in valuables[65] and the emergence of a new class of specialists (Brumfiel and Earle 1987: 3-4). We have no explicit epigraphic evidence for this taking place in the Khmer Empire.

The large quantities of rice and other commodities provided by thousands of villages to the royal temples of Ta Prohm and Prah Khan, as well as the immense wealth of the temples, are evidence of the capacity to command the movement of enormous quantities of resources to ritual centres (Wheatley 1975: 252-3; Higham 2002: 327-328). Wheatley (1975: 253) rightly adds that here and in the smaller temples, redistribution, being concerned primarily with the stratification of rewards according to status, should, in the main, be seen as the centripetal flow of goods towards centres, with limited subsequent return to the producers[66]. However, because the inscriptions were written by and on behalf of elites, they stress those institutions that are relevant to maintaining and enhancing the material and spiritual status of their class, and would be more likely to give evidence of redistributive and mobilising types of exchange than reciprocity and marketing. There is little in them to gauge the extent of any marketing-exchange networks in states such as the Khmer Empire (Wheatley 1975: 258-259). This pertinent perception is taken up in Chapter 7, where it is postulated that there were markets operating within a network of trade.

Polanyi has received considerable criticism on the grounds that his ideas were developed from ethnographic studies rather than 'archaic' societies; because he downgraded markets in pre-industrial societies to subsidiary features of the economy; and for his static view of society (Melitz 1970; Humphreys 2003; Smith 2004: 74-76; 84-85; 89; e.g. Bedford 2005; Latham n.d.). In particular, it has been convincingly argued that the economies of archaic societies and indeed some so-called primitive societies observed by ethnographers were not simply based on reciprocity and the redistribution of resources. In addition, Polanyi's assertion that there were no price-setting markets has been shown to be incorrect (Humphreys 2003: 186, 208; Latham n.d.). Importantly, it is now generally accepted that money and markets may also be

[65] Staple finance systems have, however, prevailed in some complex societies, even in early imperial states, such as the Aztec and Inka Empires (Brumfiel and Earle 1987:6).

[66] This is illustrated in K. 989/ 1008, which outlines the unequal provision of clothing and rice for various temple officials.

independent of each other (Melitz 1970: 72; Grierson 1977: 19; Pryor 1977: 104; Wicks 1992: 10). While trade does not require coinage (e.g. Morrison and Sinopoli 1992: 344-5; Wisseman Christie 1998: 352; Smith 1999: 10), the presence of coinage does not necessarily indicate monetised exchange, since coins are known to have been used as religious donations, tax payments or as jewellery (Wicks 1992: 15-16). To highlight 'Polanyi's commercial myopia', Smith (2004: 84-85) lists a number of transactions that do not fit his categories: transfers or one-way transactions (including allocation within the production unit, gift, tax, tribute, theft and plunder); and exchanges (including reciprocal, market, unequal exchange such as rents and others based on coercion). As well, there are various types of exchanges within and between states, although it is often difficult to recognise these archaeologically. On administered trade, some scholars (e.g. Miksic 1993) consider Polanyi's views to have relevance, in that trade in emporia has varied from administered trade to price-setting markets according to local and external factors (Ptak and Rothermund 1991). Wisseman (1977: 206) found that in Javanese ports there were only infrequent attempts to administer prices.

## 4.4 Money and degree of commercialisation

Market economies and markets are likely to be more visible archaeologically and historically where there was money, but there were moneyless markets in many societies. In South India, markets could be permanent and monetised with coinage (Hall 1980: 130), in Java they circulated on a five day cycle and were only partly monetised (Wisseman Christie 1998: 348-51); while the Inka state was non-monetised and non-marketised (D'Altroy 1992: 152; 2002: 199-201). In Southeast Asia, markets seem to have been part of economic life. However, while something is known about South Indian and Javanese domestic trading, there is less information about mainland Southeast Asian markets, in particular the extent to which they might have been controlled and the degree to which long distance trade goods penetrated local markets.

### 4.4.1 The uneven adoption of money

Our earliest knowledge of Asian coinage is from China where 'coins', which were bronze imitations of monetary objects such as tools and cowrie shells, had been introduced by the Zhou in the late 6th century BCE (Cribb 1980: 295-311). Money was not universally adopted for all commercial transactions in China or in other regions. Nowhere in Southeast Asia were most commercial activities monetised until about the 13th century. Yet, contrary to Polanyi's thesis, some medieval societies, including some in Southeast Asia, were both marketised and monetised in the same period as Angkor's ascendancy and the greatest extent of its empire (e.g. Frasch 1940; 1977; Gutman 1978; Hall 1980; Aung Thwin 1985; Wicks 1992; Wisseman Christie 1996; Morrison 1997; 1998; Sinopoli 2003; Mitchiner 2004; Aung Chain 2005). However, while polities, such as the Chola, Vijayanagara and those of Java, which were more

marketised, were likely to be more monetised and have coinages, it need not follow that a society without money, such as Angkor's, was non-marketised. The adoption of money in South and Southeast Asia took place at different times in different regions and was rarely continuous (Wicks 1992: 301). This might suggest that Angkor, without money, could be regarded as being placed somewhere towards the lower end of a broad spectrum of monetisation, ranging from fully monetised to non-monetised.

Indigenous gold and silver coinage was in use in central and east Java from the 8th century. From the 9th century, multiple denominations were minted, though their use may have been restricted to high value transactions for administrative and religious purposes and perhaps international trade (Wisseman Christie 1996: 245; 1998: 359). From this time, the epigraphy refers to markets, but it is not known to what extent these were monetised. Where coinage was adopted, as in central and east Java and Bali, rice or other commodities may still have been used for local purchases. However, records of tax payments and transfers, costs of gifts to religious foundations and complex property transactions in Java were calculated in a standard, state sanctioned gold and silver currency system (ibid., 261-263). Base metal coins (Chinese copper cash) were adopted as measures of value and means of payment in the 13th century, apparently linked to Java's increased role in international trade (Wicks: 297). Markets are first mentioned in the epigraphy of Pagan in the 11th–12th centuries, and the earliest monetised transactions, religious transfers, appear there in the late 12th century. In the 13th century, weights of silver, principally the *klyap,* were used for payments and valuations, though paddy was often used in local markets. Copper, cloth, lead, and paddy, etc, were used for paying taxes (Frasch 1940: 297-301; Wicks 1992: 130-152; Hudson 2004; Aung Chain 2005).

In South India, coinage appeared early (500 BCE-500 CE) but more general usage is only evident after the re-emergence of the Chola state from 850 CE (Morrison 1997: 98-99). Only under Vijayanagara was it widely used for both purchasing and tax payments (Subrahmanyam 1994; Morrison 1997: 101; Sinopoli 2003: 106). The Vijayanagara period (1336-1646) was one of increasing monetisation, with both the imperial centre and regional rulers minting currency (Sinopoli 2003: 105). Taxation of rural production was collected in kind for wet crops and cash for dry crops (Sinopoli and Morrison 1995: 90-91).

It is notable that states in South India (Sinopoli 2003: 106) and Java (Wisseman Christie 1996: 243-247) which relied heavily on trade, started to monetise relatively early. Possession of precious metal reserves is not essential for coinage, since Java imported its supplies (Section 4.6.1). Another type of money, the cowrie,[67] was a trade currency in many parts of

[67] References to cowries are found in Chinese Shang (16th–11th c. BCE) and Zhou (11th–3rd c BCE) bronze inscriptions, though their main function appears to have been ornamental, funery or ritual. They may have been used as a standard of

Asia and on the Southern Silk Route, with branches from Yunnan[68] passing through Burma and Thailand (Egami 1974; Wicks 1992: 166; Vogel and Hieronymus 1993; Yang 2004: 74-77). Inscriptions from Sukhothai[69] in the late 13th century indicate millions of cowries being used as money objects. Yet the Khmer state which episodically occupied the region of Sukhothai from the 11th century until ca. 1238 CE, did not adopt cowries as money (Cribb 1980).

In South and Southeast Asia, weights of grain or other commodities were often the media of exchange even when money or money objects were the unit of account. This was the case in Pagan for payments to workers (Wicks 1992: 134-40; Aung Chain 2005: 14-15) and during Chola rule (Hall 1980: 117-20). Everyday commodities were normally acquired by barter in local markets. In Java, the operation of some domestic markets was regulated for taxation purposes, but there is no information about prices (Wisseman 1977: 202). In Pagan, trading activities and perhaps price equivalencies may have been administered (Aung Thwin 1976: 213; Aung Thwin 1985: 111-14; Wicks 1992: 137-39). In Chola India, market prices of standard commodities were apparently set from time to time by market authorities (merchant groups) rather than by the state (Hall 1980: 121). In the reign of Rājēndra I, there was a standard local price index on certain commodities – with prices of commodities and the cost of labour expressed in terms of weights of paddy (ibid., 117; 119). Precious items of long distance trade, such as camphor and cardamom seeds, were priced in coined money. Throughout the Chola core area, the rice standard was fairly uniform (ibid., 120). Attempts by the Chola rulers to centralise the regional markets in response to the perceived threat from powerful merchant groups were stymied by local interests (ibid., 4; 196).

Traditional Andean economies were quite different. Manufacture of utilitarian goods and economic activity was local and produce was only exchanged over very short distances. In the Inka state, high value goods were produced in specialised enclaves, transported to the centre and redistributed to elites. The Inka administration took little advantage of the specialised economies of the north and central coasts of Peru and perhaps even suppressed market systems in the highlands of Equador (D'Altroy 1992: 152; 2002: 204).

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value from the Middle Western Zhou (11th–8th c BCE) Period (Yung-Ti 2003). The earliest coins in China were bronze imitation hoes and other monetary objects including cowries, issued by the Zhou kings in the late 6th c BCE (Cribb 1980).

[68] In Yunnan, hoards of cowries have been found in bronze drums in Dian culture (4th c. BCE–109 BCE) burials. They are thought to have been used as money there from the 9th century (Vogel and Hieronymus 1993: 221).

[69] Cowrie shells are mentioned in the earliest Sukhothai inscription of King Ramkhamhaeng (1292) (Griswold and Nagara, 1971; Wicks, 1992: 170-2).

### 4.4.2 Degree of commercialisation

Some scholars have described political systems in terms of the commercial interactions they sustained. Following Carol Smith's (1976) categorisation of archaic economies,[70] D'Altroy (1992: 150-152) suggests that the Inka economy could be seen as a 'non-market, central-place dendritic system' (Appendix 15),[71] having strong vertical ties but few horizontal exchanges, appropriate to a political economy in which extracted resources were moved up to the centre and were rarely returned to the producers. The system is efficient for the flow of raw materials up to and specialised goods down from the centre. Smith (1976: 323) argued that commercial integration would erode the power base of elites, so that it made sense for the Inka to have been without markets (D'Altroy 1992: 150-152). In the case of Angkor, which differed from the Inka Empire geographically, culturally and in duration, it will be argued that the interchange of goods (Section 7.3) was not restricted by monopolistic markets, as Carol Smith's model (1976: 317) would predict for a *dendritic central-place system*.

Michael Smith (2004: 77-78) argues that the association between the degree of commercialisation[72] and political organisation is the key factor in 'ancient' state economies. Based on Carol Smith's (1976) categories, he broadly classifies some well-known 'ancient' economies according to their level of internal commercialisation and their political system (Smith 2004: 79-80). In 'uncommercialized' states, the Inka (which he classes as an empire) and Egypt (deemed to be a territorial state) being examples, there are no marketplaces or general purpose money, and most large-scale economic activities are carried out by state agents. In this scheme, Angkor (a weak state, not an empire), has 'low commercialization', government control of many sectors of the economy, but a small commercial sector of merchants and marketplaces. Weak states, according to Smith, include the 'segmentary state' and the 'galactic polity'. However, Angkor does not fit well into this scheme. The model specifies that the economies of such states are often of limited spatial scale, and land and

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[70] Smith categorises regional marketing in agrarian societies according to degree of commercialisation and pattern of distribution. Because elites control critical resources, there will always be an imbalance of exchanges (1976: 312). Marketing is intrinsic to all systems and the nature of the regional exchange is the basis for different types of social stratification (Smith 1976: 368).

[71] Dendritic central place systems are hierarchical systems without horizontal networks that are open to a theoretically infinite area but are restricted to a narrow range of relationships that are exclusively vertical (Smith 1976: 315). Under Smith's system, a dendritic central-place system would have a monopolistic market. The model is modified for the Inka non-market economy, where utilitarian goods were generally produced and consumed locally (D'Altroy, 1992: 152).

[72] Smith's concept of commercialisation includes 'the extent to which a price-making market allocates commodities and the factors of production; the prominence of entrepreneurial activities; and the pervasiveness of institutions such as money, marketplaces, credit and banking' (Smith 2004: 78-79).

labour are not treated as commodities, neither of which holds for Angkor.[73] In Smith's scheme, empires cover the whole range of commercialisation (cf. the polar differences between the Inka and Roman Empires) — Java being relatively highly commercialised (1977; Wisseman Christie 1996; 1998), and being neither a city state nor an empire, does not fit the classification. The underlying thesis that there is a relationship between the type of economy and the political system is useful in encouraging its examination, but that such relationships might be categorised into a neat table is too simple, given the range of political and economic strategies that are known to have been used to manage different societies. Angkor's commoditisation of land and labour will be examined below and in Chapter 7.

## 4.5 Angkor's degree of monetisation

### 4.5.1 Valuations and unit of account

Differences between the Pre-Angkorian period and the Angkorian period (in political structure, inscription genre and lexicon) have been noted by linguists and epigraphers (Cœdès 1942: 3-5; Jacob 1960; Jenner 1981: 2-5; Vickery 1998: 84-87). However, specific material changes, which would tell us about broad changes in wealth, have not been the focus of other studies to date (see Section 7.5.2).

We have no record of individuals purchasing essential or luxury goods for personal use. The most frequent payments mentioned in the Khmer inscriptions are for purchases of land which were subsequently offered to foundations. There are a few mentions of the prices paid for a servant, and in one instance for temple commodities. The goods used in exchanges for land and other commodities and for services were often numerous, as many as 30 different types of items in the Angkorian period. These were mostly prestige objects, such as metal utensils and ornaments, textiles and animals, but could include rice, spices and even building materials.

A notable feature is that in a Pre-Angkorian text (K. 726/ 8th c.) paddy, used to pay for land, was valued in silver and possibly cloth (Jacob 1979: 415; Wicks 1992-2; Vickery 1998: 291), suggesting that one or both of these commodities were units of account. There are no such transactions in the Angkorian period. Absence of a unit of account, if demonstrated for the Angkorian period (Wicks 1992: Ch. 6), would be remarkable in an otherwise complex economy. Apart from Wick's study which examines measures of value and units of exchange, the detailed lists of durable temple offerings and barter payments have been largely overlooked, and their potential to provide further insights into the Khmer economy have not

[73] The relationship between commercialisation and land and labour is not straightforward, Brumfiel and Earle (1987: 1) argue plausibly that a requirement for sustained commercial development is that land and labour be treated as commodities, though this is possible 'only after an extended period of political centralization and inequality'.'

been explored. In Section 7.5.3, the exchange items are examined and compared with the objects found in temple inventories.

Khmer inscriptions showing exchange transactions were written by officials mainly during the period of the 10th to the mid 11th century. Any subsequent increase in the degree of monetisation is unlikely to be identified from the inscriptions, since there are relatively few inscriptions by officials after that. What we know later on from Zhou Daguan (1993[1297]: 43), is that at the end of the 13th century, large transactions in markets were conducted with gold and silver. Writing earlier in the same century, Chau Ju-Kua (1966[ca. 15th c.]: 53) did not report Chinese cash as a Cambodian import, but he did mention that rice and grain could be purchased with lead. Inscription K. 470, dated 1326 CE, was thought by Cœdès to show gold objects used to pay artisans, master architects, Brahmins, astrologers and reciters, but since some of the vocabulary is not understood, this is uncertain (Michael Vickery 2008, pers. comm.). Officials were rewarded with a variety of goods for marking out land boundaries or witnessing transactions. There is no evidence in the inscriptions that Angkor shifted away from such payments, as in Java, which became monetised with coinage from the late 8th century, or Pagan where payments were based on the *klyap* from the late 12th century.

### 4.5.2 Payments in kind: fines, levies and *corvée*

Payments in kind for state taxation and impositions by local officials are mentioned frequently in the texts (Section 7.5.4). However, as with exchange prices, we do not know if larger levies imposed on wealthier people were sometimes paid in precious metal. Court fines were imposed in the form of property or precious metal, or as corporal punishment, and depended both on the status and the nature of the crime. In K. 181/ 962, both forms of punishment are in evidence. The *stele* of Lolei, K. 323/ 889, outlines the fines, in gold and silver, payable for a variety of offences against the monastery, and these are ordered according to social status, from members of the royal family to peasants. The higher the status, the higher was the penalty. If a person did not have the gold or silver specified, other goods could be substituted (Sahai 1976: 86-87). As Wicks (1992: 203) points out, this acceptance of equivalences is the basis of a monetary system, but there is no indication of a common standard of value, [74] as in Burma and other mainland states.

*Corvée* labour was used, though the evidence for it is not always explicit. In Java, local elites (*raka*) and rulers (*raja*) had tax and *corvée* rights over the districts under their control (Wisseman Christie 1983: 18). In Pagan, non-bonded workers (*asaṅ*) were paid, while a large proportion of the population (*kywan)*, bonded to the state or private individuals, received

[74] Chakravarti (1980: 217) refers to K. 814/ 1096 (III-IV: XIII), in which two priests are remunerated with 400 unstated units of something, which probably, as in the preceding verses, was rice. Although Chakravarti suggests the substance to be a metal, and also a 'unit of value', this does not appear to be the case.

maintenance (Aung Thwin 1985: 79-91). Crown labour was undertaken in lieu of taxes or in return for irrigated land (Michael Aung Thwin 2008, pers comm). Little is known of the organisation of the labour forces in South India, used, for example, to construct the massive irrigation works around the Vijayanagara capital (Sinopoli and Morrison 1995: 91). The Inka relied on *corvée* levies (see below).

In the Angkorian period, there were numerous levies, some obviously imposed by the state, others appearing to benefit local officials wholly or partly. Royal service (*rājakāryya*) as tax or *corvée* was administered by royal service inspectors, *taṃmrvāc vraḥ rājakāryya* (e.g. Sahai 1977b: 124-9). Sedov (1967: 167; 1978: 123) cites the low male: female ratios in the temple inventories as evidence that male workers were requisitioned for *corvée.* In K. 352/ 10th c, the founder distinguishes between the property of the god, Śivaliṅga and that passing to his descendants to fulfil their royal service obligation (*thve vraḥ rājakāryya*) and to provide their own livelihood. Levies which were owed to the chiefs of the *sru* (paddy), *paryyaṅ* (oil), *gāp jnval* (?), or other chiefs, were paid in kind or at times with substituted items. For example in K. 158/ 1003, objects were given as royal service (*thve vraḥ rājakāryya*) to free some people from the *vrīha* (paddy) tax. Numerous kinds of service or obligation and the responsible officials, including *kāryya* (perhaps referring to service in general or *corvée*) and *devakārya* (divine service), are mentioned, although the context is not often clear. Records of tax obligations and payments, conceivably kept on perishable materials, are now lost to us. The inscription K. 205/ 1036 mentions a register which records the lands and taxes owing.

## 4.6 Explanations for Angkor's low degree of monetisation

Population growth, economic expansion, a strongly marketised economy, foreign trade and prestige goods have been linked to the widespread use of money (Subrahmanyam 1994: 55; see also Sinopoli 2003: 106). From this, Angkor's lack of money implies limited domestic and foreign commerce.

Yet in light of the Khmer state's long duration, its economic systems were adequate for it to function, despite the non-adoption of money. An analogy might be drawn between lack of money and absence of the true arch, a practical device which underpinned great advances in design capability, but which was not adopted by the Khmer. It could have been used to advantage in at least bridge-building, and the Khmer would have known of it from their contact with the Chinese (Loofs-Wissowa 1986). Loofs-Wissema (ibid., 244) has proposed that there was no benefit in adapting to this new technology because the existing technology solved the immediate problem adequately. The precise reason for an action or inaction cannot be known.

In the case of the Khmers' non-adoption of money, one might envisage various scenarios resulting in their forgoing such an innovation for commerce — a conscious decision, operational impediments or simply inertia. Despite the fact that the economy was primarily that

of an inland agrarian state, Khmer officials, soldiers and other travellers would have observed money in different forms, from cowrie shells to coinages, and serving different functions. Indeed, any participation by Angkor in a world system of trade, to be discussed below, would have exposed the Khmer to the resources, technologies and economies of prominent trading societies, including money. Some explanations which have been put forward for why a complex state such as Angkor was moneyless — in fact until the 16th century — are outlined here and shown to be inadequate. Three cited explanations: a lack of precious metals; a command economy; and relative isolation from trade will be discussed below and in Chapter 7.

### 4.6.1 Lack of precious metal reserves

The lack of precious metal reserves (Wicks 1992: 218; Zhou 1993[1297]: 45) and China's bans on the export of its metal supplies in times of shortage (Hall and Whitmore 1976: 324; Wicks 1992: 24) are not strong explanations for Angkor's non-use of money. As outlined in Section 3.2.3, gold was available in Khmer territory, though possibly not silver. Hall (1999[1992]: 266) mentions imports of Vietnamese gold and silver going to Angkor via the Mekong, though he gives no evidence for this. Plunder[75] from warfare would also have provided Angkor with some, or perhaps even much precious metal. While the degree of monetisation could, in some cases, be linked to the availability of precious metals, some Southeast Asian societies chose either base metals or non-metals, such as imported cowrie shells as measures of value and currency (Egami 1974; Wicks 1992: 166; Yang 2004: 74-77). Furthermore, base metals, in particular iron and copper, were to be had, possibly in substantial supply, from mines in Khmer territory.

Metal currency could also have been imported. From the 10th century, the Song (960-1275 CE) minted large quantities of copper cash and this had a significant effect on surrounding polities. Although its export was restricted in periods of shortage in the Song and Yuan dynasties,[76] it generally flowed out of China, albeit not to Angkor, as exchange for trade goods, and as part of the increased monetisation in other parts of Asia and Southeast Asia. This currency became a major component of the economies of Đại Việt, Champa, Java and Bali in the 11th and 12th centuries (Wade 2006: 45). Monetised Java imported most of its precious metals. In fact, shortages in metals and stone may have been a driving factor in Java's early overseas trade (Wisseman Christie 1998: 345). Neighbouring Champa, with

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[75] Plunder has been described as an integrative activity of empires, compensating for lack of absolute royal power in the decentralised peripheries of empires by mobilising the military capacities of regional chiefs to participate in raids and share in the gains (Spencer 1976).

[76] With mixed success, the Song periodically and later the Yuan attempted to ban the export of cash, to encourage the use of other metals or paper money or to restrict foreign trade (Wade 2006: 2-6; 9).

records of some gold and silver in exchanges (Wicks 1992: 210; 15; Wade 2006: 28), apparently introduced copper cash during the 10th–12th century during the boom in maritime trade (Wade 2006: 28). In summary, it is implausible that Angkorians were without money because they lacked precious metal resources.

### 4.6.2 Command economy and state production

Coinages were arguably introduced into Southeast Asia to expand the economies of early Indianised polities, including Funan, and to enhance the status of rulers. The absence of coins in later polities, such as Pagan and Angkor, is attributed to the redistribution of surplus wealth through the temples and monasteries, rather than the royal courts (Gutman 1978: 8-10). An implication of this view would be that rulers deliberately disallowed money, as part of a strategy to maintain central control in an administered, or command economy and to keep wealth in the hands of a few (e.g. Aung Thwin 1976: 212-215; Wicks 1992: 218). A further argument has been put that since such societies were primarily redistributive (Wheatley 1975: 227-283), there were limited opportunities for free markets (Miksic 2001: 7; 2006: 9). Redistribution as an organising economic principle of pre-modern societies has been critiqued and found to be inadequate in many historical situations (Section 4.3). In addition, it will be seen in Section 7.4.2 that a command economy is not readily sustainable; that such an economy can function with money; and that societies without money are not always command economies.

According to Sedov (1967: 201-2; 1978: 122), there were specialised industries managed by the religious foundations to supply the state with commodities. Sahai (1977b: 135) considered that the exploitation of forest resources from certain regions would have been through a state enterprise, as he thought, was the case for honey and wax in the Plain of Joncs. Three incomplete inscriptions (K. 421/ 8th c.; K. 654/ 8th c.; K. 913/ 11th c.) from this region in today's Vietnam seem to imply this. The Pre-Angkorian texts list quantities of honey, wax and grain to be provided. K. 913/ 11th c. is a royal edict of Udayādityavarman II, asking for lands furnishing honey and wax to be marked out and granting immunities from other impositions. It is not clear if this is an example of a state enterprise, or taxation of important commodities.

In comparable societies, state control of the production and distribution of resources was not the rule; and while there were impositions at many levels of production and distribution, administration was generally indirect. Food could be grown for personal consumption on land held individually or communally, and the traditional village/ social structures were maintained, although the surpluses they produced were now for the benefit of local elites, with some passed on to the centre. In Pagan, the unattached *asañ* workers would have grown their own subsistence food (Michael Aung Thwin 2008, pers. comm.). In Vijayanagara, the rulers could become involved indirectly in rural production through temple investment, and they, together

with other investors and landlords, received a share of production through taxation (Sinopoli and Morrison 1995: 90-91). The Inka on the other hand, on annexing a region, established state enterprises where goods important to the political economy were produced. Producers seem to have been permitted to support themselves from their own resources while providing *corvée* to the state (agricultural production, construction and mining). The state sometimes provided resettled workers with resources that they could cultivate or exploit to support themselves, or created enclaves of attached specialists (e.g. craft producers, smiths) working full time for the state. These were not required to produce for themselves and they could be controlled easily by elites (D'Altroy 1992: 148-149; 153; 163; 2002: 265-276). There are suggestions that the state was moving more towards this strategy in the later decades of the empire (Murra [1956]1980: 153-186).

Capitals such as Pagan (Aung Thwin 1985: 97-105) and Vijayanagara controlled irrigated productive lands, with the intensive farming in these areas producing much of the food required at the centre. With growth of administrations, elites and the military, a need would have developed for increased efficiency to intensify production and facilities to store food. Undoubtedly, *corvée* labourers, soldiers, and temple and palace workers would have been provided with sustenance. There are reports that there were large storage facilities at the capital Pagan (Tin and Luce 1923: 127; 142; Aung Thwin 1985: 112). There are some indications of central storage at Vijayanagara in the capital city and regional temple precincts (Sinopoli and Morrison 1995: 91). In the Inka polity, storage of food at central places for military personnel and *corvée* labourers, required because of the long road distances and difficult terrain, can be identified at Cuzco and provincial capitals, along roads and near state farms (D'Altroy 1992: 163-178; 2002: 280-285).

Except in the Inka Empire, taxation in the polities discussed here was indirect, and officials or merchants, often acting as tax farmers, collected state revenue. Taxes were paid in kind and also in money where this was established, in South India and Java (Sinopoli and Morrison 1995: 91; Wisseman Christie 1996: 263). Medieval South and Southeast Asian states generally took close control of strategically important areas, such as those surrounding the capital or ports, and particularly important resources (e.g. Hall 1980: 171; Aung Thwin 1985: 104: 110-113; Wisseman Christie 1998: 361). For example, under Vijayanagara, port customs and highway tolls were the only direct taxes. Luxury goods (stones, metals, textiles, and imported ceramics) which arrived as tribute or gifts or through merchant activity were not taxed directly. The only evidence for direct state control of any distribution is for horses and artillery, which were of high priority to the state. Production and distribution of craft goods were mainly regulated at the level of caste or sub-caste and imperial revenue came from taxes on looms, thread and the sale of cloth (Morrison and Sinopoli 1992: 344-345; Sinopoli and Morrison 1995: 90-92).

In summary, it could be said that only the Inka state resembled a command economy, in that it had recognisably state-controlled production and storage of commodities. Although many subjects worked part-time for the state in the early Inka period, full-time labour became more important later in the empire. In the other societies examined, there was intensive food production supplying the capital, but not patently by enforced labour. In peripheral areas, the rulers tended to control important resources only, allowing people to produce their own food and acquiring revenue through taxation, much of it indirect. While the Inka functioned without money, so it would seem did other less centrally controlled polities (Section 4.4.1). Thus the evidence presented here does not resolve the question of whether moneyless Angkor had a command economy, and this will be discussed further in Section 7.4.2.

### 4.6.3 Primarily not a trading state

The apparent lack of interest of the Khmer in commercial matters (e.g. Vickery 1998 313-14) has been put down to Cambodia's inland agrarian status and the minor role that trade appeared to play in its economy (Hall 1985: 171, 177; Jacques 1986: 330; Vickery 1998: 314; Lieberman 2003: 223), and Pre-Angkor Cambodia has been contrasted with contemporary Java, which was also inland and agrarian.[77] A consequence of having access to major trade routes is that societies could acquire wealth and sustain larger populations which could buy food to supplement what they grew (e.g. Terwiel 2005: 8). Indeed, after the Funan period, the new Khmer centres of power away from the coast developed a successful economy based primarily on rice growing.

Yet in stratified societies such as that of Angkor, elites would surely seek luxury goods, such as precious metals, jewellery, manufactured objects and textiles for personal and ritual display and to reward supporters. Goods not available domestically could be acquired by trade or by looting (Spencer 1976; Hall 1999[1992]: 252-260). Diplomatic missions to foreign states, territorial expansion, road building and attacks on foreign soil are commonly employed to acquire exotic goods.

The idea that rulers or states controlled foreign trade (e.g. Aung Thwin 1985: 113-114) derives from Polanyi's theories (Polanyi 1957a: 262; Wicks 1992: 310). Although the evidence is from a later period, there are indications that some large emporia of 14th–17th century Southeast Asia operated as open markets at times (Rothermund 1991; Wills 1991) and this could be true for earlier periods. Further, administered trade need not imply state control of all activities, such as the storage and movement of goods to local markets. In Java, both foreign and local trade were administered by merchants and merchant associations, often acting as tax farmers

[77] A point of interest is that the terminology used by the Javanese for trade, *vyavahāra* and *saṃvyavahāra*, came to have the different connotation of litigation in Old Khmer, indicating separate adaptations of the original Sanskrit (Vickery 1998: 314-15).

(Wisseman Christie 1998: 61-69). While rulers might have concerned themselves with quality control and facilitating trade, they never seriously attempted to administer it directly (Wisseman 1977: 206). Chola and Vijayanagara records suggest merchants were sometimes powerful and acted independently, though rulers benefited indirectly through taxes.

Late 12th century bas-relief images at Angkor of Chinese shopkeepers suggest commercial relations with China, as do Song to Ming dynasty maritime reports giving details of commodities traded between China and the Khmer. It is known from the Chinese sources that the Chinese traded with the Khmer for their forest products (Wheatley 1959; Chau 1966[ca. 15th c.]; Smith 1979; Chang 1991; Zhou 1993[1297]: 41-43; 59; Vickery 1998: 316; 2005: 5). Given the location of Angkor in relation to Chinese or Cham ports, some or much of the reported trade was probably overland rather than via coastal ports.

Merchants commonly worked abroad. There are records in South India (Hall 1980: 173) and Pagan (Aung Thwin 1985: 114) of enclaves of resident foreign merchants. Inscriptions dated 883 and 1021 CE indicate that in Java some foreign merchants were Khmer (Barrett 1968: 129; 1977: 207-8; Wisseman Christie 1998: 365-8). Muslim merchants, some apparently representing Southeast Asian polities, made tribute missions to the Song court (Wade 2006: 13-14) and, according to Ibn Rusta, in around 900 CE an Arab merchant was present at the court of the Khmer ruler (Tibbetts 1979: 32; Wade 2006; 14). From the Angkorian period, there may have been a sizeable merchant community, probably mainly Chinese, in Angkor and some provincial capitals (Coe 2003: 150).

In a recent study, Wade (2006) argues that the period from about 900 CE to 1300 CE represents an 'early age of commerce' in which flourishing maritime trade between South and Southeast Asia brought about political, social and economic changes throughout the region. This led to the emergence of new ports for the growing trade, the movement of administrative centres closer to coasts, the opening of new trade routes between societies, growing populations and increased monetisation. Song China (960-1275 CE) underwent a period of great commercial, agricultural and industrial growth (e.g. Elvin 1973: 113-199) which resulted in an expanded supply of money (Section 4.6.1). The Song used maritime trade, not only to acquire luxury foreign goods but to profit from port duties, taxes on ships and the resale of government monopolies (Wade 2006: 4). Foreign merchants were encouraged to come to Chinese ports and Chinese to trade abroad (ibid., 5), resulting in the growth of an influential merchant class in China (Wheatley 1959; 27-28). However after 1127, the Southern Song began to discourage foreign trade by various means, such as demanding that foreign traders convert their copper cash to Chinese goods. The number of trade missions by 'major partners' to China dropped significantly from the period 966-1087 to the period 1087-1200 and then (except for Annam) to zero for the period 1200-1276 (Wade 2006: 7-8). Cambodia, as well as

India, Chola[78] and Java rank much lower in terms of missions than Śrivijaya, Champa and the Arab Lands in the 966-1087 period. This seems to underreport the degree to which at least the Chola and Java states were engaged in trade with China. The Yuan, who defeated the Southern Song in 1276, re-established China's maritime trade, which was now partly in the hands of foreign (Muslim) resident merchants. However, shortages of copper cash and intermittent restrictions placed on private trade led to another temporary decline.

The (selective) borrowing of Indian linguistic, religious and stylistic concepts to enhance the status and authority of rulers and elites suggest that some or many of the prestige goods displayed by the Khmer elite came from abroad. The inscriptions mention a handful of items of Chinese and (possibly) Indian origin in temple lists between the 9th and beginning of the 13th century (Section 7.4.1). Studies of textiles on the stone images (Green 2000; 2003) and Chinese excavated ceramics (Groslier 1981; Brown 1988; 1998[1981]; Franiatte 2000; Cremin 2006; Amat 2007) add support to this. From the late 9th century, Khmer ceramics show a Chinese influence, for example that Chinese potters may have influenced the development of Khmer glaze technology (Groslier 1981: 20; Rooney 1984: 23-24; 2000).[79] Groslier (1998[1981]) identified mass-produced Chinese ceramics in dwellings in Angkor's royal palace, mainly dating to the 11th–12th century.[80] Chinese ceramics, as well as one originating in the more distant Middle East, plus some glass beads of unknown origin have recently been found in the moat of Pre Monti at Roluos and are dated c. 9th century (Amat 2007). Quantities of 15th and 16th century Thai and Vietnamese shards have also been identified around Angkor. Ceramics are of particular interest for what they can reveal about trade and because they are good chronological markers. Yet, compared with other areas of Southeast Asia, there have been very few studies on a regional scale analysing the distribution of imports into Cambodia to learn the extent of their penetration into the provinces.

Although evidence for Khmer foreign trade is still scant, there is no doubt that there was active trade in the region from India and China and within Southeast Asia, not only during the historical period, but from well before the first century CE (Pelliot 1903; Wolters 1958; 1961; 1975; Hall and Whitmore 1976; Mabbett 1977b; Smith 1979; Stein 1984c; 1985; Miksic 1985; Kulke 1990; Wisseman Christie 1990; Vickery 1998; 1998; Bellina and Glover 2004; 2004;

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[78] The Chola state which emerged in the 10th century was another important participant in international trade. Its attacks on Southeast Asian ports in 1025 and the 1070s and the occupation of Sri Lanka in 1080 were aimed at expanding commercial interests. The prominence of its commercial towns in the late 12th–mid 13th century might be linked to the wealth gained through overseas trade (Wade 2006: 20-21).

[79] This has also been said of Javanese ceramic styles from about the 9th century, which were influenced by both Indian and Chinese styles. Late 10th and 11th century ceramics have been found in the same Javanese sites as Chinese imports (Wisseman Christie 1998: 355-356).

[80] In light of recent excavations at similar sites, his now unverifiable statistics appear anomalous (Cremin 2006).

Yang 2004; Wade 2006; 2006a). In the 8th century inscription K. 259, there is mention of someone appointed merchant chief, perhaps, according to Vickery (1998: 313-14), the *guru* of a king of the time of Jayadevī. Vickery here points out a possible link between ruling queens and flourishing trade in parts of Southeast Asia. Hall (1985: 187) notes the few references in the inscriptions to merchants other than during the reign of Sūryavarman I,[81] arguing that this is consistent with attitudes of 'center-oriented forms of Southeast Asian statecraft seen in the wet-rice states, particularly Java' where merchants had low social status.[82]

According to Hall (ibid., 171), it was not till the period of Sūryavarman I's territorial expansion that commercial activities were encouraged by the Khmer. He cites increased mentions of merchant activity[83] and administrative development north of the Dangrek Mountains, into Dvaravati in central Thailand and to the Isthmus of Kra, as well as the much greater number of place names ending in *–pura* (Sanskrit = city; fortress) or *–grāma* (Sanskrit = village; district), which is more than double those under Sūryavarman's two predecessors (de Mestier du Bourg 1970: 308; Hall 1985: 170). Khmer merchants are recorded as being in the Chinese protectorate of Annam in the 9th century where they were attempting to purchase horses and weapons in exchange for salt (Taylor 1983: 238) and in Tongking early in the 11th century (Wolters 1958: 599). In Java, foreign merchants were active in tax farming in the 9th, 11th and 14th centuries (Barrett 1968: 129; Wisseman 1977: 207; Wisseman Christie 1998: 367; 369). There are organisations of merchants as in India (Hall 1980: 141-61; Sinopoli 2003: 103-5) and Java (Wisseman Christie 1998: 361-65) but none are mentioned in the Khmer inscriptions.

Angkor's successful expansions certainly gained it access to international trade and ports or overland routes (Hall 1985: Ch. 7-8; Vickery 2005: 5). The three rulers whose reigns were longest, Sūryavarman I, Sūryavarman II and Jayavarman VII, may have extended Khmer administrative control for this reason (Hall 1985: Ch. 7-8; Vickery 2005: 4-7). Indeed, the communities of Khmer speakers who had been living in present day Thailand, in the Chao Praya valley, and possibly in the Kra peninsula region of Southern Thailand from the period of Funan or earlier (Wittayarat and Antelme 2004), might have facilitated Angkor's westward

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[81] Following the reunification of China under the Song (960-1279), trade with China increased. After the fall of K'ai-feng in 1127 and the loss of access to the overland caravan routes across the central Asian steppes, Chinese interest focused more on the sea, as both a source of revenue and part of its defence strategy (Hall, 1985:196).

[82] A dearth of mentions of merchants is also noted in Cham epigraphy, perhaps suggesting their low status (Hall 1985: 187).

[83] There is no evidence, however, that the *khloñ jnval* and *vāp* were actually merchants. Hall's (1985: 172) claim that merchants were involved in the state's revenue collection under Sūryavarman I is unsubstantiated (Vickery 1987: 211-212).

expansion and the establishment of trade links in that direction. [84] It has been suggested that Sūryavarman I sent a gift to the Chola king Rājendra Chōḷa, possibly to facilitate trade (Hall 1975; 331-334; Hall 1980: 174; Hall 1985: 196; Kulke and Rothermund 1998: 116)[85] and that Sūryavarman II also did so in the reign of Kulottunga (Kulke and Rothermund 1998: 117).

Despite Angkor not having direct access to the major maritime routes between east and west, according to Hall (1985: 177), goods from China could reach Angkor via the Chao Praya system in Sūryavarman I's reign (1002-1050 CE). China's Southern Silk Roads (Yang 2004: Map 2) via Yunnan and Burma, must have been linked up with this system and with the Mekong River at today's Vientiane from as early as the 7th century CE. The Mekong-Tonle Sap system provided another route from the south. Angkor's links to this network are discussed further in Section 6.7. Bin Yang's discussion of the Southern Silk Roads, however, highlights the relatively low importance of Cambodia in Chinese policy (e.g. Coe 2003: 149). Chinese maps of the trade routes, from which nodes were identified, together with archaeological sources and historical records, show these terminating at the peripheries of 'Khmer territory'. This termination is shown to be unlikely.

Sūryavarman II (1113-1150) and Jayavarman VII (1181-1220?) expanded toward the east and the coast of Champa, and would thereby have been able to take part in the growing maritime economy, and specifically control the central Champa ports. Sūryavarman II renewed relations with China (Hall 1985: 207; Vickery 2005: 5). According to Maspero (2002[1928]: 75; see also Cœdès 1968[1964]: 159-160), Sūryavarman had his own fleet which might not have been confined to the Mekong and other river systems, since later Vietnam sources report Khmer attacks in 1128 by over 700 ships to loot the coasts of Thanh-hoa. In 1147, the Chinese resumed diplomatic relations with the Khmer by honouring the (Chenla) king, and negotiated a commercial agreement (Cœdès 1968[1964]: 162; Briggs 1999[1951]: 189).

The evidence that it did trade from the 7th century, and Angkor's known efforts to improve its access to foreign trade, argue against the idea that the Khmer had little interest in international commerce. Thus, lack of trade cannot be cited as a reason for Angkor's low level of monetisation. Additional information on Angkor's trade from the inscriptions will be provided in Section 7.4.1.

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[84] After 1050, possibly because of internal problems, the Khmer withdrew while the Burmese expanded into this region (Hall, 1985: 198). In the 12th century, the Isthmus of Kra was the centre of interaction involving Sri Lanka, Burma and Angkor (Hall, 1985: 202-5).

[85] This may have been to solicit aid against Śrivijaya who were threatening regional trade and/ or assistance against Sūryavarman's rival Jayavīravarman (Hall, 1975: 332). On the other hand, Kamboja was the name of an ancient Indian province and Vickery (2002: 91) argues that the idea of such an action should be dismissed.

## 4.7 Conclusion

Previous views on Angkor's monetisation and trade have been examined, in order to help discern how its economic strategies might have contributed to sustaining it over centuries. The enigmatic perspective presented by the inscriptions of how the Khmer valued goods and services, and the few references to commercial matters in the inscriptions have suggested to some that these were not important to the Khmer.

Many comparable state economies can be viewed as redistributive to some degree, but this should not normally be interpreted in the Polanyi sense. In general, resources rarely passed back down the line to the producers, that is, the resources were mobilised rather than redistributed. Many people lived under forms of bondage or serfdom (for example where villages were assigned to deliver produce and services to religious establishments), and they appear to have grown their own food. Surpluses were channelled upward as taxation or extracted as *corvée*. This applied in the Inka economy as well. In fact at a late stage, the state intensified mobilisation by moving people into production units to work full-time for the state. The discussion has raised questions for Angkor about:

- how its economy compared with economies of other states,
- how controlled the economy was,
- how it functioned without money, and seemingly without a unit of account.

Various reasons have been put forward for Angkor's low level of monetisation:

- lack of precious metal;
- that Angkor had a centrally controlled economy;
- that Angkor was agrarian rather than a strong trading polity.

The first explanation cannot be valid, if only because precious metals are not necessary for money. The second explanation, that non-monetisation implies strong central control, remains open to question and will be discussed in Chapter 7. None of the Asian states examined here, with or without money, imposed strong central control over their territories, either politically or in the production and distribution of resources. In all these states, the most direct controls over the economy were for securing resources of state importance. Only the non-Asian, non-monetised and non-marketised Inka state controlled a large proportion of the population for the production and distribution of resources.

While there is arguably a correlation between active trading and a high level of monetisation, one should be cautious before adopting the third explanation, that agrarian Angkor was not a trading state and had a low interest in commerce. Such a conclusion would run counter to the accumulated historical and archaeological evidence of Angkor's long involvement in international trade. None of the South or Southeast Asian polities was fully or mostly

monetised before the 13th century and this includes some strongly marketised Indian states. In island Southeast Asia, Java, from the 9th century CE, was more strongly monetised and marketised than mainland polities. Its political economy had developed differently mainly because of its proximity to Indian and Chinese maritime trade routes.

The findings in this chapter will be reviewed in Chapter 7 in light of analyses of the inscription data to discern: changes in wealth over time; differences between the temple and secular economies; further evidence for trade; and the extent of Angkor's marketisation. An issue is whether markets played a part in the distribution of valuable commodities, such as the gold and silver objects listed in the texts. A related issue is the lack of mention of a unit of account in the texts, and an explanation will be sought in the social context of the Khmer inscriptions. A third issue suggested by Sahai concerns the increasing diversion of resources away from the centre, raising the question of whether this may have become a problem for the Angkorian state (Chapter 8).

Our ability to interpret issues of the political economy, such as money, markets and trade, from the inscriptions is always limited by the information which can be accessed. However, as outlined in the next chapter, the scope of the investigation can be widened from a process of close reading of the texts to one whose methodology is derived from techniques used in archaeological investigations of material: a large quantity of data is analysed quantitatively as we might an assemblage of artefacts in order to observe patterns of politico-economic behaviour.

# 5 The inscriptions: an introduction

> (His Majesty) ordered (this decision) to be engraved on a pillar of stone at Sri K. J. Śikharīīśvara, and ordered it to be engraved on (another) pillar of stone to be placed in the land of Vibheda, granted graciously by His Majesty Sūryavaramdeva to Śri Sukarmā Kaṃsteṅ and the family of Śri Sukarmā Kaṃsteṅ, installed in the land of Vibheda, which henceforth carries the name of Kurukṣetra.
>
> K. 380E (1049 CE)

> For ordinary correspondence, as well as official documents, deer-skin or similar parchment is used, which is dyed black. The parchment is cut by the scribe in sizes to suit his needs. A sort of powder resembling Chinese chalk is molded into small sticks called *so*, which are used to inscribe the parchment with lasting characters.
>
> (Zhou 1993[1297]: 27)

## 5.1 Introduction

Many of the gaps in our knowledge of the Pre-Angkorian and Angkorian political economies discussed in the previous chapters are attributable to the limited amount and scope of data that has been obtained from the inscriptions. An appreciation of the context of the inscriptions — their function in the Khmer world and their accessibility today — will help make clear the limitations and possibilities of gaining further insights from them. An outline below details issues of interpretation of the texts and the factors which have limited their efficacy as historical documents: poor preservation; the narrow scope of their content; our incomplete knowledge of the Old Khmer language; enigmatic logic and apparent ambiguities in meaning. The methodology used in this study is set out, explaining that to circumvent some of these barriers, one needs to take a broad approach to the material and examine its content and structure in aggregate. The principal tool used for this is a database system, which facilitates rapid sorting and analysis of the data, helps to derive trends and anomalies from its spatial and temporal structure, and directs attention to those features warranting further analysis.

## 5.2 The Khmer corpus of inscriptions

### 5.2.1 Context

The textual evidence of the Pre-Angkorian and Angkorian periods is gained from over 1200 inscriptions. Although the majority of these inscriptions have been found within the area defined by modern Cambodia, and in particular near the capital of Angkor, they have a wide distribution across much of mainland Southeast Asia, corresponding, in the main, to the limits of Khmer influence and authority during the period 6$^{th}$ to 15$^{th}$ century CE. They are most commonly found in sanctuaries commemorating the consecration of new religious foundations

(at temples or ashrams), recording gifts to the gods on these occasions and specifying the requirements for the foundation's maintenance. The inscriptions are found mostly on edifices and *stelæ* in temple precincts. Others are associated with the roadside rest houses and hospitals of Jayavarman VII. Minor, generally smaller texts are also on boundary markers, statues or precious objects offered to temples, and refer to ownership of property or mention a donor.

Published texts have been transliterated into Roman script and most have been translated into French as well, the majority in the early 20th century. Barth and Bergaigne (1885-1893) published two volumes of Sanskrit texts from Cambodia and Champa, and Aymonier (1900-1904) translated or summarised three volumes of Khmer texts from Cambodia and the Thai provinces. Many inscriptions, notably translated by Cœdès and Finot, were published in the Bulletin de l'École française d'Extrême-Orient (BEFEO) (1901-) and some of these were later republished (Cœdès 1937-1966; Cœdès 1989). In addition, there are the transcribed inscriptions of Majumdar (1953), the translations by Pou (2001) and occasional translations by scholars which appear in miscellaneous journals.

Of the total corpus of Khmer inscriptions there are about 1050 in published lists (Cœdès 1966; Jenner 1980) and Jacques (unpublished) lists a further 195 mostly unpublished registered inscriptions.[86] Inscriptions range from perfectly preserved to illegible markings on an eroded surface. In some instances, only a few words or a single word can be discerned. A large number of inscriptions, stored in museums or conservation areas, have not been published. There are rubbings for some of these. Approximately 970 inscriptions are post 802 CE, i.e. of the Angkorian period (about 860 published). Over 230 of the inscriptions are Pre-Angkorian[87] (roughly 190 published). Fifty-one of these are, by date or style, post Angkorian (after 1431 CE).

This study will include dated texts up to 1350 CE, as well as undated texts whose average estimated date is less than 1350. In addition there are a few inscriptions written in Old Khmer, but not produced in areas under Khmer administration, i.e. texts from provinces in 'Siam'; these are included in order to examine Angkor's trade and communications, on the assumption that they represent some form of Khmer occupation or influence at the site, regardless of who controlled the territory. This is discussed further in Section 6.2.

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[86] Forty five are listed in a supplement to Cœdès (1966), in BEFEO (1971, Vol. LVIII: 177-195). The exact number of inscriptions is difficult to determine. EFEO is currently registering the texts, including recent discoveries, and in the process eliminating duplications.

[87] The oldest known dated Khmer language inscription is K. 600/ 533 *śaka* (611 CE). The number of Pre-Angkorian inscriptions, which did not include some recent discoveries, was cited by Vickery (1998: 91).

Table 1 below summarises this statistical information. It is stressed that the figures are estimates.

| | Total inscriptions (approximate) | Pre-Angkor period (approximate) | Angkor period (approximate) | No estimated date |
|---|---|---|---|---|
| Known inscriptions | 1200-1300 | 230 | 970 | |
| Texts published | 820-850 | 190 | 645 | |
| Inscriptions used in study (up to ca. 1350 CE) | 979 | 235 | 628 | 116 |

Table 1 Inscription data for study

The inscriptions are unevenly distributed over time. For example, in the period 791-877 across the transition between the Pre-Angkorian and the Angkorian periods (802 CE), there were only four accessible inscriptions. Also, there are many more extant Pre-Angkorian inscriptions from the 7th century (130 accessible), than from the more recent, slightly longer period from the end of the reign of Suryavarman II to the start of the Jayavarman VII period (77 inscriptions accessible) (Vickery 1998: 93).[88] Spatial distribution is also markedly uneven, with higher densities of inscriptions and monuments at and around Angkor, to its north-east and north-west, and in the south of Cambodia.

The content of the inscriptions and their siting in the precincts of temples suggest that they were directed to a limited audience. While the general populace would probably have visited the temples on feast days (Jacques, 1999: 28), it is likely that only a small percentage of the population would have been literate enough to read them — if the largely illiterate society of pre-colonial Cambodia (Chandler 1996[1982]: 46) is an indication of the earlier Angkorian period. The form of the texts, where the Sanskrit and Khmer language sections employ contrasting genres, provides a partial answer. The Khmer parts generally contain political, bureaucratic or economic information, listing founders, donors, and donations of working personnel, land, animals and material goods, whereas the Sanskrit texts, always in verse, primarily eulogise kings and officials, and evoke gods. Nearly half of all inscriptions are solely in Old Khmer, one third in Sanskrit and a quarter are in both languages.

[88] This suggests a relatively greater output of inscriptions in the Pre-Angkorian than in the Angkorian period (Vickery 1998: 391, Note 201).

### 5.2.2 Sanskrit inscriptions

From the 4th century CE, the Indo-Aryan language Sanskrit began to replace the vernacular Indic languages (Prakrit) as the language expressing political power, and spread rapidly, not only on the Indian subcontinent, but across much of Asia (an exception being Sri Lanka). A form of the standard *praśasti* style had appeared by 400 CE. This included the genealogical succession, an elaboration of the kingly traits of the dynasty, the eulogy of the ruler and the donations, conditions for operation of the religious establishment, and imprecations against their violation (Pollock 1996: 211). Prakrit and Sanskrit mostly were employed for different textual contexts (ibid., 208). In the Khmer inscriptions, the Sanskrit might refer to the ruler's role in rewarding officials, in allocating land, and in building or promoting the establishment and maintenance of foundations. However, it is rarely explicit about practical matters.[89]

In light of the uniformity of style and content of the Sanskrit 'political poetry' over such wide geographic areas, Pollock (1996: 198-99) has coined the term 'Sanskrit cosmopolis' to encompass the zone of cultural interaction between societies sharing similar assumptions about representing power in language. In this 'cosmopolis,' Sanskrit's role in politics was as a vehicle of 'aesthetic power', to make 'claims about the nature and aesthetics of the polity – kingly virtue and learning, the dharma of rule, the universality of dominion' (ibid., 230).

The earliest extant Sanskrit texts, from Cambodia's Funan period, are undated records from the 5th century: undated Khmer inscriptions appear about a century later. Dated inscriptions in Sanskrit and Old Khmer start from the early 7th century. The Pre-Angkorian Sanskrit texts were generally short 'literary gestures' (ibid., 219), but by the Angkorian period, they used very sophisticated poetry, employing polished orthography and grammar, as in India. These display knowledge of Indian intellectual and political thought and of literature including the metrics of poetry (Majumdar 1953: xvii-iii; Bhattacharya 1991: 2-4; Pollock 1996: 218-220; Dagens 2003: 217). Yet, although Indian Brahmins were occasionally brought in (Wolters 1982: 91), Sanskrit culture was generally indigenised, with local inflections present from the beginning. Khmer Brahmins are said to be the authors of major Sanskrit works such as the Ta Prohm and Prah Khan inscriptions (Pollock 1996: 220; 222). In Jacques' (1986: 328) view, the elite that knew Sanskrit was very small and since the texts are found only on temple sites, this may suggest that the only audience for the Sanskrit inscriptions was the gods. Whereas the use of Sanskrit in public writing died out quickly in Burma and Java, it lasted up to the late 13th century in

[89] Exceptions are several important Sanskrit inscriptions, which include lists of gifts or temple supplies (e.g., inscriptions of the Jayavarman VII period – the hospital stelae; K. 273/ 1186, K. 908/1191 and K. 180/ 948; and the bilingual inscriptions, K. 254/1126 and K. 235/1052. In a few instances, Khmer authors use Sanskrit in the opening formulae of texts. In Pre-Angkorian texts, there may be short imprecatory passages, usually at the end, which are all or partly in Sanskrit.

Cambodia (Footnote 47). Its decline is linked with the spread of Theravada Buddhism (Houben 1996:11).

### 5.2.3 Khmer inscriptions

From its earliest appearance, the Khmer language adopted a great many lexical terms from Sanskrit (Bhattacharya 1991: 6; Pou 2003: 283). However, the content of the Khmer inscriptions differ markedly from the Sanskrit ones. They are not addressed to gods, but to a temporal audience: authorities and officials, relatives of the founders, and in their broad imprecations, to the world in general. The authors tend not to express a political agenda here, in that they do not praise or assert power. The Khmer inscriptions seem more like legal documents – they often record the history of endowments made to foundations and they establish the ownership of land, setting out the rights of the foundation and the founder's family. Vickery (1985) has suggested that many such texts in the 10th and 11th centuries have a certain political agenda on the part of the authors, who often appear to be concerned with their claims to titles and land.

The texts may list and describe in detail the property of the foundation, record the donors, the circumstances under which land was acquired, the price paid, and settlement of disputes by courts. They may note the weight, quantity and material of temple 'treasure' or objects used in exchanges, the rice production of foundation lands, sometimes their location and dimensions. Requirements for continuing support for divinities and temple personnel may be set out and personnel might be listed, sometimes by name, gender, dependents, duties or place of origin, or else as totals. The texts may also refer to imposts or immunities granted to the foundations.

The king is frequently acknowledged in inscriptions authored by individuals other than rulers, and a date is often recorded. The king is depicted as having a key role in state administration, establishing inquiries and being at least nominally responsible for legal decisions, ordering building works to be initiated, etc. There is an emphasis on the role of the ruler or of his predecessors in giving land, granting permission to purchase it or materially supporting the foundation, presumably placing the founder and his relatives under some future obligations. The authors record the merit, accrued by the ruler through his generosity, which is mostly dealt with poetically in the Sanskrit texts. Inscriptions written by rulers in Old Khmer are edicts relating mostly to matters of law, temple administration or land allocation and taxation. The texts are somewhat formulaic, though of varying length. Presumably, wealthier temples had more resources warranting recording, and had more literate scribes to produce the texts.

Changes in the Khmer language over time, notably between the Pre-Angkorian and Angkorian periods, are observed in grammar, spelling[90] (Jenner 1981: 2-5; Vickery 1998: 84-87) and lexicon. Vocabulary changes often concern administrative terminology, and probably point to institutional change (e.g. the disappearance of the title *poñ* and the land unit *sare/ sanre* after the early 8th century and the replacement of the Pre-Angkorian expression *ājñā vraḥ kamratāṅ añ* by *vraḥ śāsana* in the Angkorian period as an expression of the concept of 'royal order'. In addition, nearly all recorded names used for commoners change from the Pre-Angkorian to the Angkorian period (Vickery 1998: 84-87).

### 5.2.4 Other Khmer texts

Other writings have not survived, because they were on plant materials such as palm leaves, which deteriorated in the monsoonal climate, or because they were destroyed by fire or insects. The contents of Khmer temple libraries which may have been reproduced over the centuries, and the Khmer language royal chronicles, for which we have some evidence, are no longer extant (Jacques and Dumont [1990]1999: 17-18). This situation contrasts with that in some other parts of tropical Southeast Asia, where non-temple documents produced several hundred years ago still exist, having either been written on lasting materials such as copper plate or continuously reproduced (e.g. Wisseman 1977: 198-199; Aung Thwin 1985: 8-12; Wisseman Christie 1993: 180-181). These are sometimes able to provide alternative views of the society in which they were produced and can be compared with the temple inscription texts. In Burma, for example, the availability of a variety of historical text types (government archives, law codes, histories and administrative records, civil codes and chronicles giving narrative accounts) represent contemporary Burmese society somewhat more comprehensively (Aung Thwin 1983: 48; 1985: 8-12).

Sanskrit was used mostly for political poetry and there is little evidence that Khmer literature was produced until the Sanskrit literary culture ended in the 14th century (Pollock 1996 225). However, according to K. 485, which was written by Jayavarman VII's first wife in 1200 CE, a Buddhist narrative *jātaka* was performed, at least in dance. It is not clear if the recitation was in Khmer. Further, some late narrative texts suggest the existence of earlier chronicles, a literary genre known from the post-Angkorian period (Dagens 2003: 215).

[90] Some of these may be dialectical differences. Early Angkorian inscriptions (e.g. K. 809) still show Pre-Angkorian spellings of certain words, such as *kñuṃ* and *kloñ*, later spelt respectively *khñuṃ* and *khloñ* (Vickery 1998: 85-86).

## 5.3 Assessment of characteristics of Khmer inscriptions

### 5.3.1 Incomplete texts

Many inscriptions are so poorly preserved that almost nothing can be read. Sixty-two of about 1000 inscriptions listed by Cœdès (1966) are described as 'graffiti'. Sections of many others have been broken off and are missing. In some cases, texts may have continued on other surfaces, now missing. Of the 979 inscriptions used for this study, 112 were described as being fragments of lines or text, or as being inscribed on a fragment of a *stele*. A large proportion of the 775 inscription terms for an object are seen in no more than a single site (Figure 5), rendering interpretation difficult at times.

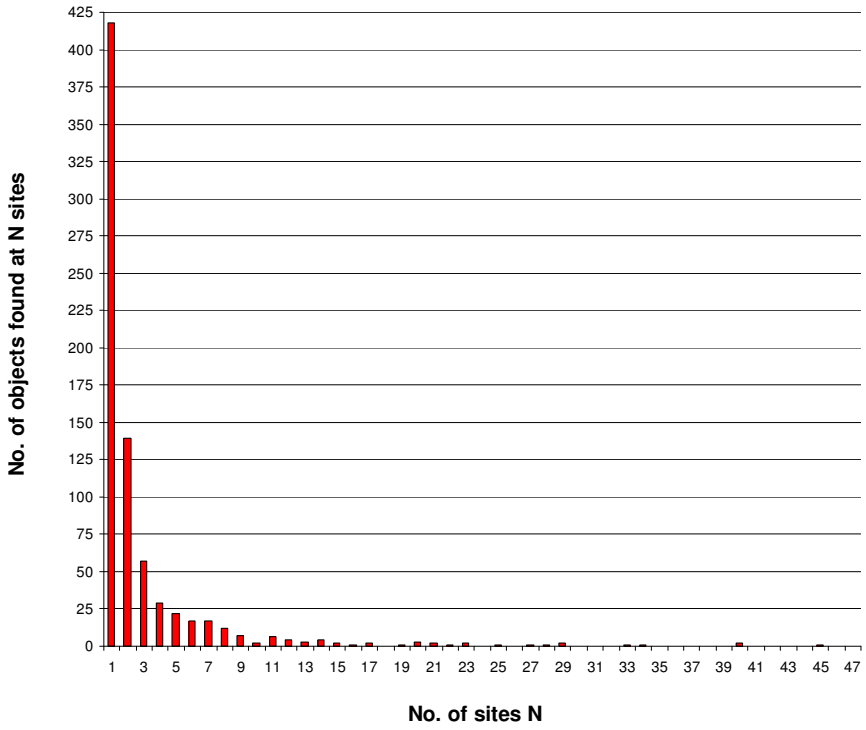


Figure 5 Frequency of sites with given numbers of references to objects. For example, in the first column 418 objects are referred to in inscriptions at only one site each.

### 5.3.2 Limited scope of the texts

Although what was written in these texts would have made sense to a literate person in medieval Cambodia, the scope of the texts is narrow and there are difficulties in interpreting them. The inscriptions are historical records written from the perspectives of the dominant classes of Khmer society. Little is said of a wider society beyond the interconnected and elite

spheres of royalty, religion, the bureaucracy and judiciary. Because the texts are so specific in their intent, they tell us almost nothing about most peoples' daily lives. Ordinary people only appear in lists of workers for the temples, albeit often individually named. We learn very little about how the different classes of people and the institutions related to each other. The texts tell us almost nothing about the workings of the mercantile and taxation systems, where commodities came from or how they were distributed. They offer little information about builders and craftspeople. Nor are there details about the construction of roads, irrigation channels and water tanks. Vickery (1998: 313) has noted that, other than references to food growing, weaving and leaf-work, there are no mentions of crafts or other economic activity in all the Pre-Angkorian inscriptions. These limitations might perhaps suggest that there is no more to be learned about the Khmer political economy. But as will be shown below, a different approach to the texts can provide additional insights.

### 5.3.3 Current understanding of language and contemporary social structures

Despite much linguistic analysis (Diffloth 1977; Jenner and Pou 1980-81; Bhattacharya 1991; Ptak and Rothermund 1991; Pou 1992; 2003; 2005; Jenner 2009; 2009a; Long Seam n.d.), we have an imperfect knowledge of Old Khmer, the language of the texts in which most of the economic data is found. Many words have not been translated and translations of the many loan words may rely too heavily on their meanings in other languages. The language also changed over time (Section 5.2.3 above).

At times, the meaning may defy interpretation because the societal context is not understood. The difficulty of avoiding prejudice in translation is widely acknowledged (e.g. King 1999: 237-8; Vickery 2003-4: 137-8). For example, despite the details outlined, it may be difficult to appreciate how a legal process was conducted, or how land was acquired and given to the temples, since concepts of law and land ownership would not have been understood as in western economies today. In addition, notions such as those of 'servant'/ 'slave' (Sedov 1969: 339-40; Jacques 1976; Jacob 1979: 408-10; Chakravarti 1980: 149; Mabbett and Chandler 1996: 173; Vickery 1998: 226; 271-4; Sanderson 2003-4) and the administrative divisions, *pramān*, *viṣaya, sruk* and *grāma* (Sahai 1977a: 36-38; Vickery 1996-6; 1998: 327) are still interpreted variously.

### 5.3.4 Interpretation of meaning

Much of what was written about the deeds and qualities of rulers and founders may have deliberately departed from historical facts. There may be both historical errors (e.g. in the genealogies) and logical errors (e.g. sums). Actions may have greater potential for misrepresentation than material items. This is understandable, given that much of what appears in the Khmer inscriptions was written with the intention of gaining spiritual or temporal

merit by showing the author in a favourable light. Again, what might appear to be bureaucratic and social differences over space and time may in fact be spatial and temporal variations in language. Conversely, uniform language need not point to unchanging social or bureaucratic differences, since transferred language may not carry the original meaning. There may also be a non-correspondence between social verbal meaning and the material or archaeological record (Fletcher 2004: 115). The declared reason for building a monument may only partially correspond with the monument's actual function. For example, inscriptions of temples built by Khmer monarchs on strategic vantage points, such as Phnom Bakhen at Angkor, stress their religious purpose, but not security.

### 5.3.5 Non-standardised accounting

Several writers have noted the difficulties presented by the apparent lack of consistency in the units of measurement in the Khmer texts, which may hinder interpretation of aspects of the contemporary economy. Variations have been observed, especially over the Pre Angkor to Angkor hiatus, even within a single inscription.[91] Rice fields, of particular importance in economic studies of Angkor, were measured by their dimensions (either in linear units or area) or by the quantity of seed needed to sow them, and units of conversion are not easily discernible (Chakravarti 1980: 213-14). The units used in the Pre-Angkorian period (Sahai 1971: 94-99; Jacob 1979: 415-6; Vickery 1998: 304-6) were largely replaced in the Angkorian period.[92] Temporal changes in spelling can be identified, but not changes in value over time.

Although bilingual inscriptions have allowed us to establish some equivalences of weights,[93] the Indian systems such as the Māgadhaparibhāṣa are known to have changed in relative and absolute terms, (for example there were regional variations) and it is not known which one was used by the Khmer (Dagens 2003: 131-3; Soutif 2006). The relative values of the different units of weight, and measurements for land and textiles are frequently indeterminable. A further complication is that sometimes the unit of measurement is unstated, especially for rice, but also quantities of salt or oil and areas of land. Attempts to understand the various units and establish relational values between them (Sahai 1971: 94-100; Jacob 1979: 415-16; Chakravarti 1980: 210-16; Cœdès 1992[1906]: 49-52; Vickery 1998: 304-5; 443-4; Gerdi Gerschheimer 2005 pers. comm.), have met with limited success. Equally enigmatically, and

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[91] For example in K. 938/ 11th c. *sre* (rice fields) are measured in either *thlvaṅ* or *vroḥ*.

[92] For example, the land measure *sanre/ sare* (area of rice field) occurs only in the Pre-Angkorian period texts (Vickery, 1998: 304).

[93] The 11th century inscription K. 254, which is bilingual in Sanskrit and Old Khmer, made it possible to establish equivalences between the Khmer and Sanskrit measures of rice (Cœdès 1951: 181-182). Sedov (1967) converted the Cambodian measures into metric units, which allowed him to make estimates of temple supplies, production and consumption.

this will be discussed in Section 7.3 below, the relative values of prices paid for land and other commodities often lack consistency. Inaccurate recording can also compound an issue of interpretation, for example where totals are not the sum of their parts. This is seen in measurements of land in K. 648/ 7th c.; K. 79/ 644; and K. 397/ 1112 and in the lists of working personnel in K. 99/ 92; K. 560/ 7th-8th c.; K. 312/ 879; and K. 786/ 7th-8th c.

While it is possible that the sometimes very precise amounts specified in the texts suggest accurate reporting, the quantities should be seen in their contemporary context, which, by today's standards, would be somewhat elastic. Standards were often based on inconsistent factors, such as human anatomy (Whitelaw 2007) and it was not uncommon for more than one system to be used concurrently, as in medieval India (e.g. Acharya 2004).

## 5.4 Analysis of the inscriptions as an archaeological procedure

### 5.4.1 Inscriptions as analogues of archaeological sites

The importance of investigating the temporal and spatial distribution of recorded material objects or actions was recognised by Karashima (1984; 1992; 2002), who studied aspects of administration in medieval India, e.g. the revenue system of the Chola and the *nyākas* rulers in the Vijayanagara period from contemporary inscriptions. Having encountered a number of obstacles to interpretation, he concluded that the task of systematic analysis of the revenue terms required a concordance of all the revenue terms from all the Chola inscriptions: 'if we examine the context of their occurrence in all the instances, we will be able to arrive at the meaning of many terms', and, 'If we examine the distribution of a certain term in both its chronological and topographical aspects, we will know the particularity of the term, and can guess what position it occupied in the Chola revenue system' (Karashima 1984: 69-70). The results of his analysis, in the first instance using computer data cards, demonstrated the advantages of applying statistical methods to the study of inscriptions. This work laid the foundation for further quantitative studies of Indian inscription data (e.g. Karashima and Shanmugam 1988, 1989; Talbot 1994; Heitzman 1995; Morrison and Lycett 1997; Sinopoli 2003).

The inscriptions have certain features which may often provide us with additional information, if analysed in aggregate, much as one might analyse an assemblage of artefacts. Both material objects and textual data can be quantified and collated; they may have descriptors; they are found in temporal and spatial contexts; they may be lost or degraded; and they both have meanings which may be distinct from verbal meaning. What is understood today about an object or its written representation may not accord with what was understood 500 years ago. In addition to their having been intended, generated, located, used and abandoned by people, both material objects and written records are themselves operational. For example,

material objects, such as buildings, can continue to impact on human social life (Fletcher 2004: 111), while a written warning of punishment may act to hinder potential transgressions. Even though the intent of the author of the inscription in its original context may have been lost, it is nonetheless possible to deal with words as quantifiable items in the same way as archaeologists deal with material artefacts for which the original intent is no longer known.

Both artefacts and the written record of these artefacts can be studied in relation to each other over time and space. We may infer meaning both from material culture and from words which are used to represent the material; and the same is possible for past actions. All these may be treated quantitatively. For example, we may be able to ascertain what proportion of all the founders of religious establishments offered the merit of their new foundation to the ruler, or how often a particular kind of immunity was granted to foundations. This information can be processed in the same ways as information about material data. The Khmer temple inscriptions should provide opportunities for such treatment, where lists of temple treasure, temple workers and exchange items are quantifiable by number, size or weight, or otherwise characterised by material or function. Reported actions may also be quantified. The inscriptions have a location and a time determinable to varying degrees of accuracy, as do artefacts, and it should be possible to compare the data of both for spatial and temporal trends, similarities and dissimilarities.

This relies on the premise that the data is a sample from the population of all inscriptions produced within a repetitive consistency of cultural traits — in this case the Khmer world (see e.g. Wolters 1974: 1-15) — and therefore that a sample can be informative of the whole. For example, this premise is assumed in assessing overall changes in wealth between the Pre-Angkorian and Angkorian periods by quantifying changes in the material listed in the currently available inscriptions. Viewing the accessible data from archaeological sites and inscriptions in aggregate may help mitigate problems caused by gaps, omissions, inaccuracies and inconsistencies. This has been done in Vijayanagara, but the corpus of Khmer inscriptions is significantly smaller and generally in a worse state of preservation than the Indian one.[94]

In previous studies of Khmer texts, some of the inscriptions have been disregarded if researchers have considered the state of the text to be so poor as to render historical or economic reconstruction worthless (Vickery 1998: 92). Nevertheless, texts that are difficult to interpret may have material data, a date, a name of a founder or donor, or a known

[94] There are 80,000-100,000 published inscriptions from South India, a significant proportion of which are from the 14th to 17th centuries (Sinopoli 2003: 121 citing Trautman et al 1985).
Compared with Angkor, Vijayanagara, has a much larger and more diverse corpus of systematically catalogued and studied written sources (including tens of thousands of inscriptions, plus literary and historical texts and accounts of visitors) (Sinopoli, 2006: 15-18). Sinopoli's study used a database of 236 craft-related inscriptions constructed from examination of around 3,000 Vijayanagara texts (2003: 119-25).

provenance that could be used in a statistical approach. Even if we do not know the exact meaning of a word, an administrative term, a precise location or a date, we can collate and analyse data and compare distributions with those of other data. Such correlations may suggest relationships previously not considered, or provide clues to disputed interpretations. A broad approach, as opposed to the detailed analysis of specific inscriptions which has been the dominant methodological approach for much of the last century, not only allows for uneven quality of data, but lets the researcher view a number of features over a wide geographical area or extensive period. This may highlight social and economic processes and changes which cannot be readily discerned by a qualitative 'close reading' of the inscriptional corpus.

### 5.4.2 Advantages of a database system for the analysis of inscription data

The interpretative issues of the Khmer corpus raised above suggest that a systematic analysis of the economic and other data in all the inscriptions, whether initially considered relevant or not, could provide some worthwhile insights. A relational database is an efficient tool for systematically collating and analysing the inscription data. Here each inscription, dated or undated, accurately sourced or not, is included, at the very least to provide another statistic. The advantages of using a database for the Khmer inscription data are summarised below:-

- A large amount of data from an area encompassing hundreds of thousands of square kilometres of Southeast Asia, and extending over a period of approximately 8 centuries, can be accepted.
- Data may be collated into a number of discrete but interconnected fields in an easily accessible form, providing a resource of textual information which has been indexed and systematised.
- Changes over time can be shown. For example, it can record changes in political and social institutions, such as the role of the ruler in temple life, the changing titles of officials, expressions for classes of workers, or frequencies of occurrence of objects.
- Overall features and trends in the data can be analysed. By recording all the economic data, whether considered relevant or not, then viewing the data as a whole, one may discern patterns. This helps to reduce uncertainty about the reliability of inscription data. It can therefore be a means of enhancing the sense of the texts which may be very specific in intention, which frequently was to record the establishment and maintenance of religious establishments.
- Data (such as classes of objects, kinds of taxation collection or transactions) can be readily compared and contrasted, and interpretations can be checked for consistency. Anomalies, including apparent errors in data entry, suggesting further investigation, are easily highlighted.

- Very complex queries can be formulated to interrogate the large set of data in a parsimonious way.
- Queries[95] to elicit relationships between objects, actions, institutions or units of measurement may be designed. For example, the co-variance can be analysed for the same set of objects in different temples, or items in temples can be compared with those exchanged between individuals.
- The database can be designed with a flexible structure which can be changed to accommodate changing research priorities and directions. Dates,[96] geographic co-ordinates, word meanings, object categories and organisational data may be edited at any time, and any updates to these data will be reflected in queries, tables, graphs and maps that are derived from them, leading to improved data consistency.
- New fields can be added to permit more detailed analysis of issues that may require further study.[97] This will be useful for researchers who may wish to incorporate data from their own fields of interest.
- The database can be linked to other relevant sources of data (e.g. historic sites, infrastructure data), to facilitate sharing of data between researchers.
- With other tools, such as spreadsheets and GIS, patterns of spatial and temporal distributions can be visualised. The dates and locations of the inscriptions help to contextualise the data within the growing body of archaeological knowledge about Angkor, much of which is now digitised.

## 5.5 Issues with use of database for analysing inscription material

### 5.5.1 Uncertain categorisation

Rao, Shulman et al (1992: 32) have objected to the use of 'the statistical method' for analysing inscription data, on the grounds that it extracts substantives 'from the pristine body of the inscriptions', which are then subjected to 'statistical frequency analysis' – in the process arbitrarily assigning real, though not necessarily straightforward historical events, to categories, or even to a binary classification. This has been answered by Karashima (2001: 17-18) who argued that the method entailed an ongoing dialogue between the statistics and the texts – that he first read a large number of inscriptions to listen to their 'whispering' before

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[95] Queries are formulated in Structured Query Language (SQL).

[96] Dates may be amended as new information from historical or palaeographic studies comes to light. Some very accurate dating can now be attained from astronomical symbols inscribed in some of the texts (Eade 1995; 2006).

[97] For example, an additional field for the gender of personnel, such as the category *ᵊnak* (person), would facilitate sorting.

applying the analysis to confirm, amplify or negate particular hypotheses. This was followed by further close reading of the texts to assess any trends indicated by the data.

A further argument in support of categorisation of inscription data is that we are constantly categorising information when we speak or write in order to facilitate the conveyance of meaning and it is one of the important functions of language. As we are expected to modify our inaccurate verbal or written classifications, so likewise, we should see few difficulties doing this for database entries (Lakoff 1987).

Karashima's general approach has been adopted in this study. Through an iterative process, the database has been constantly reassessed to decide if data should be re-categorised because the existing database categories were inappropriate or insufficient. Where explanations for anomalous results appeared inadequate, categorisation may have been a cause. Data that was regarded as ambiguous was assigned to broad categories. The database categories were restructured during the study to accommodate recent re-interpretations and modified research priorities. Some areas where categorisation has the potential to be problematic are discussed below.

- The validity of categorising lexical items, whose meanings are disputed or unknown, to specific categories has not been accepted by some researchers. One of three possible solutions to deal with this could be adopted: to broaden a category; to narrow categories by creating a new one; or to assign the item to the 'unknown' category. In this study for example, it was not clear if many vessels in the temple inventories were ritual items or receptacles also used in secular society. Since the majority of these were seen only in temples and were not used in transactions, they seemed to have had a ritual function. Dominique Soutif (2006 pers. com.) is of the opinion that the receptacles here should be classed as ritual items. However, as some receptacles may also have had a secular use, this study has assigned them to a separate category, 'receptacles'. Some clarification for individual items will be possible when current research by Soutif is published.
- Another requirement is to examine frequencies of data over time. However, only 318 of the 979 inscriptions in the database are dated accurately. A further 543 have been dated to one or two centuries by Cœdès (1937-1966) or to the reign of a named ruler. Accordingly, these inscriptions have been assigned an appropriate date range (see Appendix A6.2). If the analysis was to examine the occurrence of some data in 50-year intervals, an inscription from the 10$^{th}$ century was counted as half of an inscription in each half of that century.
- Given our still unclear understanding of the terms for temple workers such as *kñuṃ/ khñuṃ* (Section 3.4.3), it would have been difficult to assign to specific categories those workers belonging to groupings which were unspecified or ambiguous. In the database,

lower status temple workers have therefore been designated as 'personnel' to distinguish them from 'temple officials' with presumed higher status roles or titles.

- The analysis examined the roles of officials concerned with taxation and immunities and the nature and degree of Khmer central control. This highlighted the uncertainty about whether particular officials were central or local appointees. Those individuals clearly associated with village administration were categorised as 'village official', to distinguish them from the others, who were assigned to the 'official' category.

Two further issues are sampling errors and the uncertainties of the data. These will require more detailed consideration.

### 5.5.2 Sampling uncertainties

Writing before the era of accessible digital technology, Wheatley argued that since it is unlikely that many new texts will become available to enhance our understanding in these respects or that 're-evaluation and reinterpretation of the existing corpus will do little more than raise, rather than answer, novel sets of questions', it is left to archaeologists to use new research designs in order to 'imaginatively reconstruct the institutional bases of past societies' (Wheatley 1975: 258-9). A partial solution to the dilemma, proposed for this study, is to analyse the inscriptions as a class of artefact.

Even so, the small quantity of data and the significant *lacunae* in the epigraphy render it expedient to focus initially on broad patterns to elicit features for more detailed research. Only around two thirds of the relatively small Khmer corpus of 1200-1300 texts has been published, and it could be argued that the published inscriptions do not typify the full population of inscriptions. Further, the inscription sites located to date may not be representative of the overall distribution of temple sites. Therefore the validity of the spatial and temporal analyses of distributions of markers is an issue which needs to be addressed. There are, however, some strategies for dealing with this, to endeavour to avoid bias. One might compare the distributions of inscriptions against a larger data set of all temple sites, whether with inscriptions or not, to ascertain how representative they are of the original underlying population. As well, there are few inscriptions in some time intervals (e.g. for the period in the late 12$^{th}$ century up to the accession of Jayavarman VII) and also relatively few data entries in some categories (e.g. the number of references to some official titles). Where sample size could be an issue, an apparent trend can be checked statistically (e.g. using the chi-squared test). However, formal statistical analysis is not considered warranted for much of this study.

Yet statistical validity on its own is not enough. Bennet (1984) has argued that while computer-aided and statistical analyses are useful objective tools, researchers should always refer to the textual context. Interpretation of texts requires synthesis of analysed texts and their contexts

(both textual and archaeological), followed by the integration of the information into the wider archaeological picture. The need for understanding context is illustrated by Morrison and Lycett (1997), who demonstrated for a sample of 1610 North Vijayanagara inscriptions, which varied spatially and temporally in form and in context, that interpretations could vary under different sampling conditions and if viewed together with different archaeological data. They argue that the parameters of data recovery influence archaeological knowledge (indeed all historical knowledge) and that these can 'neither encode self-evident meaning about the past nor, individually, wholly encompass that past'. As with observations of material culture, historical data needs to be analysed according to both internal criteria and the parameters of data recovery and analysis (ibid., 216-7).

Morrison and Lycett found that, as with artefacts, the analysis of relatively easily categorised records of grants and donations, investments in religious institutions and various other revenue allocations indicated that data sampling and analysis of this kind was subject to the same sorts of problems which arise when the data is artefactual. Their examples highlight the need to try to identify temporal, regional and locational contexts. They found, for example, that exclusive use of temple inscriptions would suggest a relatively large role for donations to temples, with a corresponding smaller one for land transactions and irrigation, when in fact the reverse could be correct. As well, since longer inscriptions were associated with temples where kings and royal officials donated villages, while shorter, less well dated texts were more likely to be linked to other donors such as local elites and organised groups, sampling focused on more prominent temples could result in bias with respect to inscription size (see also Rao, Shulman et al. 1992: 31; Morrison and Lycett 1997: 220-230). Morrison and Lycett's analysis (1997a: 465) suggested that kings tended to support canal building, that *nyakas* (military governors) subsidised reservoirs, while farmers dug wells and raised terraces – yet archaeological research showed there to be also a greater diversity of strategies than this simple correlation suggests. This highlights the need for a dialectical approach of examining archaeological and historical data in preference to a single data source (Morrison and Lycett 1997: 233; Stein 2001: 356).

As new inscriptions are published, this will allow the current analyses to be updated. Large numbers of temple personnel were regarded as of little importance by some earlier researchers and details of many of them remain unpublished. Of particular interest will be several inscriptions from the Koh Ker period, containing lists of thousands of temple personnel, which could permit a detailed analysis of personal names and roles of workers (Michael Vickery 2006, pers comm.).

### 5.5.3 Uncertainties in transcription, transliteration or interpretation

Publications of the Roluos group of inscriptions (e.g. Pou 2001) contain a number of omissions and are being revised. Thus, it is important to exercise caution with the use of available data, such as figures for total numbers of personnel or the distributions of the personal names of workers. Significant errors in transcription, transliteration and translation could, if aggregated and used in calculations, result in gross statistical misrepresentation (Dominique Soutif, 2007: pers. com.). Furthermore, our lack of understanding of Khmer social and economic structures renders certain aspects of the texts ambiguous. For example, the apparently complex processes involved in land purchases and other transactions are only partially understood. The same is true for: the ways legal disputes were investigated and their judgments carried out; the declarations made about administrative authority over foundations; and statements about taxation and immunities. Nevertheless, if the intention is to gain a broad view of the economy, rather than focus on its specifics, even these 'unreliable' data may provide broad trends, as well as highlight matters for further study.

In order to avoid some misinterpretations, organisational matters which are not understood will be recorded as literal translations, rather than interpreted. Thus, an enigmatic declaration about an immunity in K. 843/ 1025 will be documented as in the original translation: 'Those in charge of provisions are not under the authority of the chiefs of the family branch or the chiefs of the notables' (Cœdès 1964: 117). Again, in examining the rice provided to a temple, it can be difficult to link the number of producers to the number of consumers, even though the production of particular lands and allocation of rice to people or gods may be stated. In addition, one cannot know if the workers were employed only in rice production or if there were other sources of food such as donations, or servants not mentioned. Indeed, often the texts quantify only the production or the consumption, not both. Statistical analysis of the rice economy also requires knowledge of the number of annual harvests, which we cannot be certain of.[98] Calculations for rice production and consumption may thus be problematic and the results need to be treated cautiously until more information becomes available (Lustig 2001).

With some terms which remain unclear, such as *cañcūla,* a type of exemption from a levy, it is possible to record all the occurrences of such terms, studying their distributions and their covariance with other classes of data, in order to provide insights into their contemporary roles. As more Khmer texts come to light and they are increasingly interpreted, a more comprehensive picture of the Khmer world will emerge.

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[98] In his calculations for K. 254/ 1126, Sedov (1967: 172) assumed two harvests a year to determine the temple's rice production. He didn't consider that the temple could have been supported by sources other than the 19 *khñuṃ* referred to. Further, even though Zhou Daguan states that there were up to four crops per year, observations of rice production today suggest that this may be a description of different rice strains growing in different areas at different times of the year.

## 5.6 Angkor Inscriptions Database

### 5.6.1 The data

The inscriptions of the Khmer corpus are numbered in the EFEO inventory, prefixed by the letter K (Cœdès 1966: 73-75) and in the inventory of the Phnom Penh Museum by Ka. The 979 inscriptions used in this study (see Appendix 5) range in date between the 6th and mid 14th centuries and are associated with 552 different sites. Despite the large number of undated inscriptions (661), 545 of these are thought to pertain to a particular reign, or to one or even two centuries. There are 531 inscriptions having relevant material items (with qualifying details, including measurements, quantities and contexts, such as gifts, legal disputes or temple exchanges). Of the remaining inscriptions with no material objects, 164 contain information about the founder or donor and 62 record some action by the ruling king. This information is summarised in Table 2 below.

| | |
|---|---|
| All DB sites | 552 (10 unknown locations) |
| DB sites with latitude/ longitude | 536[99] |
| All DB inscriptions | 979 |
| DB inscriptions with published texts | 755 |
| Dated DB inscriptions | 324 |
| Undated DB inscriptions | 655 |
| Undated DB inscriptions with date estimate | 539 |
| Undated DB inscriptions with no date estimate | 116 |
| Pre-Angkorian DB inscriptions | 235 (50 dated) |
| Angkorian DB inscriptions | 628 (274 dated) |
| DB inscriptions with material objects | 531 |
| No objects but founder/ donor | 164 |
| No objects but active role of ruler | 62 |

Table 2 Database (DB) sites and inscription data

The spatial data takes the form of latitude and longitude values in decimal degrees. The estimated degree of accuracy is indicated within a field of the database. The geographic coordinates refer to the 'original' location of the inscription as recorded in the classic inventories. A proportion of the inscriptions are found on discrete sandstone blocks or *stelae* which are relatively portable, so there is a possibility that the inscription has been moved from

[99] A majority of sites (407) have accurate readings derived from global positioning systems (GPS), 17 (including the 10 unknown sites) could not be assigned coordinates, and the remainder have been estimated from old maps which have been referenced to the modern map grid, or coordinates for the nearest modern population centre.

its original location in pre-modern times, if perhaps not very far.[100] However, many of the inscriptions were probably *in situ* when they were found, for example where there are recognisable references to the immediate archaeological context. In some cases, the inscriptions were fitted to specially built pavilions, or inscribed in the door frames or other structural elements of temples, and can therefore be assumed, with a reasonable degree of certainty, to be in their original location. The steady collection of more accurate GPS data, and a more rigorous cross-referencing of the content of the inscription to its material context (e.g. Pottier 2003), should gradually identify and/or resolve instances of spatial uncertainty. This, in turn, will allow a spatial analysis of the inscriptions data at a much closer level of detail and geographic scale than has been undertaken here. For example, the acquisition of archaeological and digital spatial datasets at Angkor over the last fifteen years (Pottier 1999; Fletcher, Evans et al. 2004; Evans, Pottier et al. 2007) – means that the complex relationships between historical economic data and their material and environmental contexts can now be analysed spatially.

As outlined above (Section 5.5.1), although only about one third of the inscriptions are dated, most can nevertheless be used to study temporal changes, because they have been dated to within a century or two or to a particular king's reign.

### 5.6.2 Database structure

The structure of the Angkor Inscriptions Database was designed around three primary entities: sites and temples, inscriptions associated with each site, and the material items (objects) recorded in the inscriptions. Each site in the database is associated with one or more inscriptions, and each inscription contains data pertaining to zero, one or more objects as well as socio-economic data (such as status of founders and donors, role of the ruler, declarations about immunities and authority for maintenance of a foundation). Each database object has a set of attributes which describe its characteristics (e.g. measurements and materials). Geographic coordinates are entered against sites and temples, temporal data is recorded at the inscription level, and the attributes of objects in the database include discernible material and socio-economic properties. The hierarchy is seen in the database structure, Appendix 8, showing the links between these levels and the fields comprising them. The structure of the database was designed to minimise data redundancy, with data recorded in only one place. Description of all database fields and their defining parameters are detailed in Appendix 6.

Data are added to the database from lists of predefined terms (of objects, materials, context, titles, etc.) that are offered as options in a drop-down list. If a term is not in the list, the system informs the user and asks if they wish to add it as a new entry. The drop-down lists help

[100] One example of this is the inscription K. 290/ 1015 (Pottier, 2003: 200).

maintain consistent spelling and naming conventions. In contexts where text interpretation is difficult (role of the ruler, taxes/ immunities, authority over foundation) every entry is unique. Where additional explanation might be required, remarks may be entered in the open Comments fields at the three levels of Site, Inscription and Object. For example, for exchanges (purchased goods), the Khmer term used for the type of transaction and the list of barter goods have been added to the Comments field. New fields can be incorporated to respond to unpredicted needs. For example, during this study, a field was added to record information about the diverse roles of the rulers, such as granting immunities to foundations.

## 5.7 Conclusion

The inscriptions are our only source of primary local historical evidence covering the Pre-Angkorian and Angkorian periods. The specificity of their genre and overall state of preservation present various obstacles to their interpretation, even through close reading. A complementary method, entailing analysis of all available data in aggregate using a database as a tool, helps to resolve issues of interpretation, which are relatively less significant when aggregated with many other readings. The data are viewed in a broad temporal and topographic perspective, and correlated with other data. The epigraphic data are treated in much the same way as material archaeological data, requiring an awareness of the interpretation issues of sampling and meaning. This broad analysis is not a replacement for detailed and close reading of specific parts of the inscriptions, but rather an additional analytic procedure, intended to cast them in a different light. One advantage of using a database for the storage and management of the sometimes uncertain inscription data is that its fields, categories and the data itself may be updated at any time. In due course, new translations of texts can be incorporated, enabling the assessment of any significant changes in the overall patterns of the data.

The study looks at frequencies and distributions of key indicators and highlights unique occurrences or anomalies. It concentrates on general comparisons from the totality of the available data more than generalisations from selected instances. Relationships can be examined between objects (e.g. number of women compared with number of men), between times (e.g. whether an occurrence increases or decreases) and between locations (e.g. how they are distributed) using the database and other tools, such as spreadsheets and GIS. The identified trends and anomalies can help to determine priorities for additional studies.

In the following chapters, inscription data are used to examine three areas of Angkor's political economy, namely political controls (Chapter 6), money, markets and trade (Chapter 7) and the role of the religious foundations in the state's integration (Chapter 8). The findings, together with data identified in Chapters 2-4 are used to examine Angkor's imperial strategies. While

concurring with or refuting some key positions, they also provide new interpretations of how Angkor adapted to changing circumstances over the centuries.

# 6 Political processes: measures of central influence

> 933 *śaka*, the ninth day of the crescent moon of Bhadrapada, Sunday. Here is (our) oath: We all who belong to the division of the *tamrvāc* of the first (second, second, third, fourth) category, swear, cutting our hands and offering our lives and our devotion gratefully and unerringly, to His Majesty Śrī Sūryavarman, who has enjoyed the legitimate monarchy since 924 *śaka*, in the presence of the sacred Fire, of the holy Jewel of the Brahmans and the *ācāryas*. We will not revere any other sovereign; we will not be hostile to him, we will not comply with his enemies; we will not commit any act which might do him harm. All these acts which are the fruit of our grateful devotion towards His Majesty Śri Sūryavarman, we will endeavour to accomplish. In case of war we will strive to fight with all our hearts, not to bind ourselves to life; by devotion (to the king) we will not run away from combat. If, in times of no war, we die of disease, may we obtain the reward of people devoted to their master. If our existence remains in the service of the king, when the time to die (in service) arrives, we will do it in devotion……
>
> K. 292 (1011 CE)
> Oath of allegiance

## 6.1 Introduction

The above oath of allegiance made to Sūryavarman I by 4,000 members of the *taṃrvāc* corps from 200 different *sruk* was formulated to affirm that their loyalty was wholly and willingly to their revered king. The inscription conveys a notion of a king with absolute power. In this chapter, inscription data are used to explore the nature and extent of royal control in Angkor's administration of its territories. As outlined in Chapter 2, while Angkor is sometimes portrayed as centralised, with rulers and elites controlling people and the flow of resources, it has also been seen, in common with other Southeast Asian states, as being decentralised. The ubiquitous royal edicts seen in both royal and non-royal inscriptions[101] — recording gifts, temple construction and management, appointments, legal judgments, honours and privileges — offer insights, if not into the state's ability to assert control, at least into its influence.

Textual data often present us with conundrums or contradictions about the role of central authorities in regional administration. It might be difficult, for example, to assess from texts whether stated actions, such as court decisions, were the outcome of decisions by central or regional authority, and whether the statements made by rulers and elites were factual, statements of power or claims to disputed ownership. Nevertheless, a case is made that

[101] In a royal inscription a king is the author of the text. This might be an administrative edict, a record of a new foundation or a donation to foundation. In most non-royal inscriptions, the authors are not rulers. They may be founding or donating to religious establishments or asserting rights over property. A few non-royal inscriptions are written by members of religious orders, often ascetics.

temporal and spatial patterns of certain markers in the inscription data are indicators which can inform us about central influence or perhaps even control. The data are analysed separately for royal and non-royal inscriptions, since these were written for different purposes and record different perceptions of events around the time of writing.

The study uses GIS to examine spatial and temporal distributions of inscription sites, individually and in clusters, to seek possible locations of economically and politically important regional centres, and to link these to known communications routes. These routes were most likely in existence since at least the Pre-Angkorian period, and connected also to trade routes beyond Khmer territory. Finally, the indicators of central influence are examined in relation to temple clusters, to argue that an important strategy for sustaining the empire was to give a degree of autonomy to regional centres.

## 6.2 Extent of Angkor's influence and control

By plotting the positions of inscriptions on a series of maps corresponding to six principal periods of Khmer history, Parmentier (1916: 69-70) was able to indicate the extent of the Khmer empire.[102] Parmentier noted the progressive shift of the centre of gravity of the temple sites to the north from the Pre-Angkorian period, through what he regarded as incorporation of new areas into the empire. However, he stressed that these maps were only indicative of the actual distribution, since it was possible that a number of inscriptions remained to be discovered and that some had been moved from their place of origin. Figure 6, using the more comprehensive data from the Angkor Inscriptions Database, shows the location of all published inscription sites that have a provenance. Figure 7 depicts these inscription sites by century, conforming in general to what Parmentier observed. It might be noted that, despite the changes in distribution, the coverage by Khmer inscriptions remained largely unchanged over the entire period.

The presence of inscriptions acknowledging Khmer rulers need not imply Khmer control. Likewise, settlement markers such as brick or stone temples associated with rulers and powerful elites need not point to central control, even though in some way they represent the ideologies of the centre (Martin Polkinghorne 2007, pers. comm.). Indeed, it is often difficult to distinguish between influence, which might entail choices (Claessen and van de Velde 1987: 7-8), and control, which tends to be imposed. Neither is absolute and they may overlap. For example, it may not be at all clear to what extent payment of taxes or tribute by local polities to the centre should be viewed as voluntary, mandatory or both, since both offer benefits as well

[102] Parmentier's maps (recording geographic coordinates) were based on earlier archaeological site maps produced by de Lajonquière (1901) and others. The six periods were prior to Jayavarman II (802 CE); between Jayavarman II and Rājendravarman (944), which includes the Koh Ker period; Rājendravarman (944-968); Jayavarman V (968-1000); Sūryavarman I (1002-1050); and the XI$^{th}$ and XII$^{th}$ centuries, including the reign of Jayavarman VII.

as disadvantages. Indirect imperial involvement may leave imperial styles, symbols of imperial authority, or infrastructure, such as roads, bridges, storehouses or way-stations (Sinopoli 1994: 171).

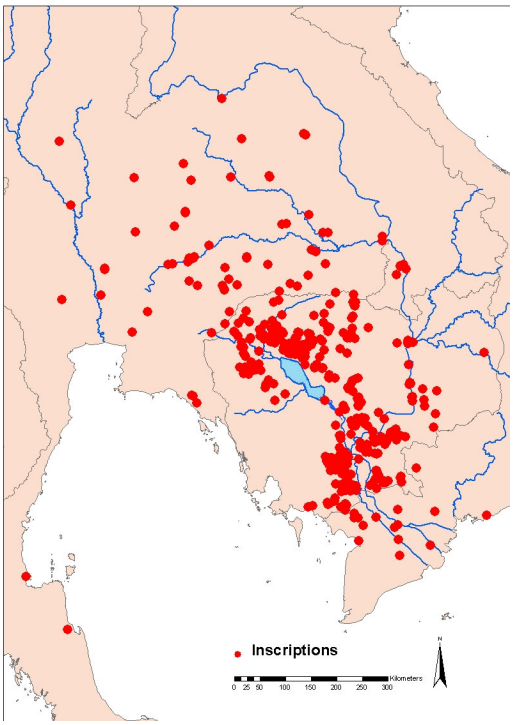


Figure 6 Distribution of all Pre-Angkorian and Angkorian period inscription sites

As markers of influence or control, the Khmer inscriptions vary both spatially and temporally. For example, a few inscriptions in Old Khmer found up to 900 km from Angkor originated in areas probably not under Khmer 'rule', but where there were Khmer speaking populations. The content of the inscriptions from Thai sites, K. 413/ 1361, K. 988/ 1380 and K. 995/ 1429, might point to Khmer influence, but not to control by the Khmer state. These inscriptions are nevertheless included in the analysis where appropriate, for assessing issues such as trade and communication. However, the Pre-Angkorian period text in Old Khmer found on the Isthmus of Kra (K. 407/ 7th c.) most likely does not pertain to a Khmer polity (Michael Vickery 2007, pers. comm.), but is of interest for its mention of trade goods. The picture is further complicated by the knowledge that populations and their archaeological remains are distributed unevenly over the landscape, according to resources such as water, soils, minerals and communication links: even if a location is known to have strong links with the centre, it does not follow that all areas between it and the centre will be subject to the same influences or controls.

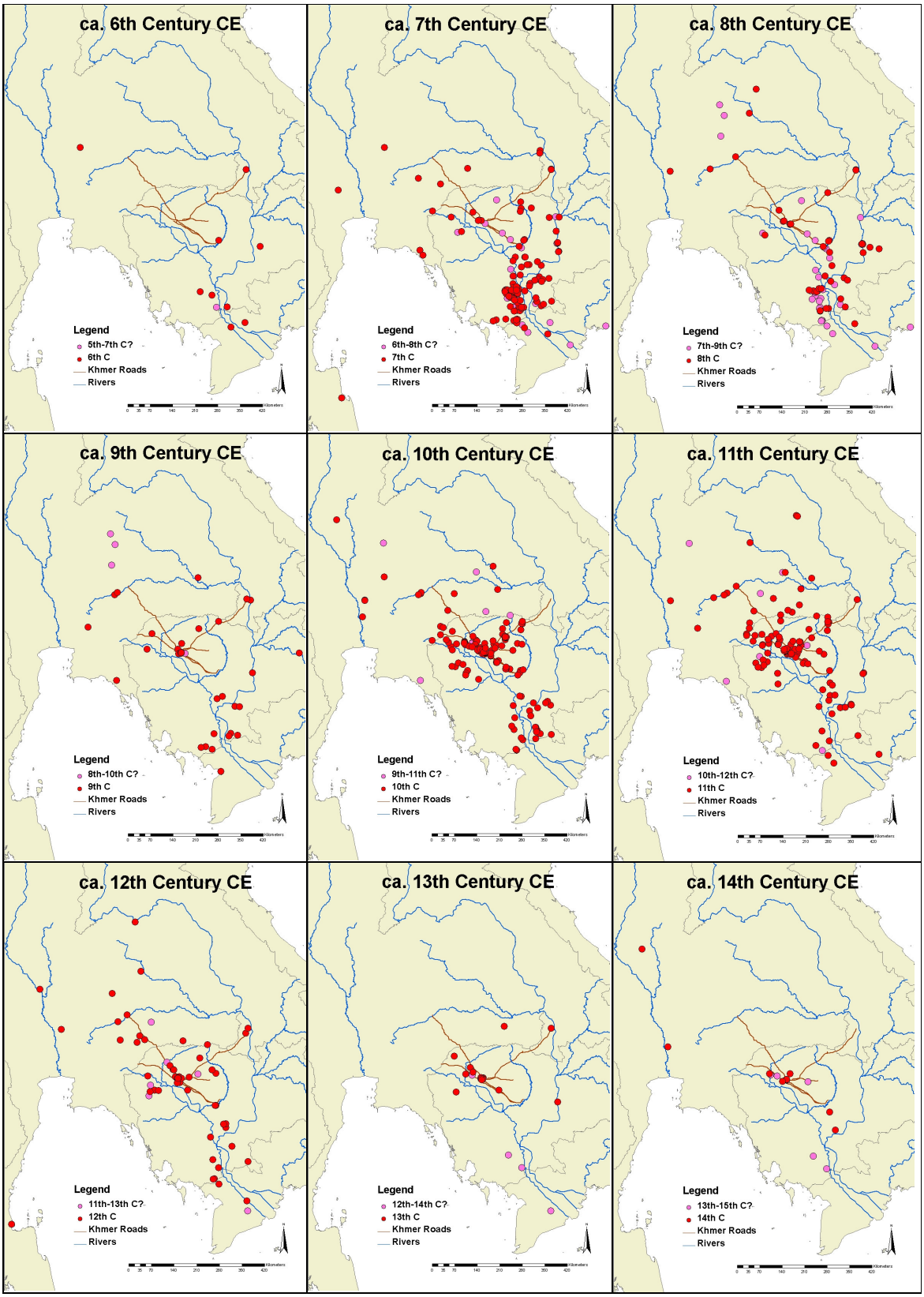


Figure 7 Distribution of inscriptions by century. Pink dots indicate where dates are estimated to fall within 2 centuries (e.g. for 12th c. figure, 11th–12th or 12th–13th c.). Known Khmer roads from Hendrickson (2007).

### 6.2.1 Gauging the central influence of Angkor

In his study of state integration in the Chola empire, Heitzman (1995) examined temporal variations in the control exercised over disparate groups by central, intermediate and local authority. Heitzman's study looked at variations in the inscriptions over four sub-periods of Chola rule (850-1279 CE) and analysed key terms relating to state formation, comparing the frequency of occurrence of terms referring to: actions of the king and royal family; officials of the king and agents of the land revenue department; tax terms; and records referring to *kāni* (control over private property). His analyses suggested that the *Segmentary State* and *Ritual Polity* were stages of the political development, but that these were progressively replaced by more direct controls.

Sections 6.3 and 6.4 below examine Angkor's central influence at different distances from the capital over time. Royal inscriptions are clearly an indication of direct central influence. Another indicator is the stated role of the ruler, recorded in non-royal texts, in matters relating to land, religious foundations and administration. These latter texts, most written in the 10th and 11th centuries, relate to private foundations, established as a result of royal land allocations to officials and therefore also important in a study of central influence. The study does not emulate Heitzman in looking at the role of the king and members of the royal family together, since it is often not clear which officials ought to be considered members of the royal family, with so many officials claiming some relationship to rulers. Officials are therefore dealt with separately.

The Angkor inscriptions contrast with the 10,000 Chola period inscriptions (1995: 164) which are largely dated and provenanced. Of only 979 Pre-Angkorian and Angkorian period inscriptions in the Angkor Inscriptions Database, 224 have not been published, 28 have little or no meaningful text, and 123 are considered to contain no material data pertinent to this study. Even so, some of these texts have dates or may at least have been assigned to within a date range, and some of them are provenanced. On the other hand, many texts with relevant data cannot be accurately sourced or dated. There have, therefore, not been sufficient inscriptions to examine discrete study areas in different time periods, as Heitzman did. Hence, spatial and temporal distributions will be dealt with separately in the first instance. It is stressed that this analysis, as was Heitzman's, is intended to indicate trends, not to provide definitive answers.

Table 3 summarises the data which is analysed in this chapter.

| | Total | Pre-Angkor | Angkor | undated |
|---|---|---|---|---|
| All Database inscriptions | 979 | 235 | 628 | 116 |
| Royal inscription (king is founder or donor) | 163 | 14 | 149 | 0 |
| Founder or donor other than king | 426 | 141 | 281 | 4 |
| Unknown founder or donor (published text) | 166 | 47 | 105 | 14 |
| Role of ruler mentioned in non–royal inscriptions (other than named as ruler) | 289 | 34 | 255 | 0 |
| Role of ruler mentioned in non–royal inscriptions (unknown founder or donor) | 30 | 5 | 25 | 0 |
| Inscriptions with official(s) | 161 | 9 | 152 | 0 |
| Total no. of references to officials | 549 | 10 | 539 | 0 |

Table 3 Inscription data used for assessing central influence

### 6.2.2 Assessing distance from Angkor

The reach of any state is limited, so we may expect the number of Khmer sites and degree of influence to diminish with distance from the centre and ultimately cease. We also need to consider that the centre was not always at Angkor. In the 7th and 8th centuries, there was a number of influential rulers having different capitals, some still unknown (Vickery 1998: 321-324; 379-392).[103] Around 802 CE, Jayavarman II established the first Angkorian capital to the north of the Great Lake in Phnom Kulen, later moving to Roluos where he located his capital Hariharālaya. In 893, Yaśovarman I moved to the Angkor area, first to Phnom Bakheng and then to the city of Yaśodharapura. In 928 CE, Jayavarman IV moved the centre to his seat at Koh Ker, but his nephew Rājendravarman II brought the capital back to Angkor in 944, where it remained until the 15th and 16th century, when a Khmer powerbase shifted to the Phnom Penh region. Ideally, the calculated distances from the capital would take these changes into account. However, since the number of inscriptions produced during the temporary migrations away from Angkor is relatively small, subsequent analyses involving distances use only Angkorian-period data and distances will be measured from the Bayon at Angkor.[104]

[103] Vickery (1998: 329) considers it likely that inscriptions which do not mention a ruler, especially if they are on the outer limits of his domain (according to other records naming him) were not under the ruler's control.

[104] The centroid for all Angkorian period inscriptions lies 16 km from Angkor, between the Bayon and the Bakong temple at Roluos, the site of the capital prior to the shift to Angkor.

The distances in the following graphs are measured according to straight lines. However, routes taken were not always straight lines, for geographic or political reasons. People will choose an effective route according to costs, travel time and mode (cart, chariot, horse, ship) and these will depend on the purpose of the journey (military, movement of resources, administration, etc). Water transport is faster and allows more resources to be moved but is limited by the natural route offered by the water. Moreover, not all rivers are perennial. Hence, the linear distance between points may not be the most accurate criterion for assessing the extent of control. Regardless of the limitations of straight line measurement, it is a useful initial indicator, because the ratios of all point-to-point distances do not differ much from the ratio of all travel times, i.e. the scale might change, but the graph would not alter substantially. Thus, while the constraints of using distance in evaluating central influence are recognised, linear distances calculated from geographic coordinates have been used in these first analyses in order to gain an overview of trends.

## 6.3 Royal involvement as a measure of central influence

Figure 8 looks at the distribution over time[105] of indicators of royal involvement: the number of royal inscriptions and the number of inscriptions which mention an active role of the ruler in matters such as land allocations, taxes and immunities or disputes[106] – compared with the incidence of all non-royal inscriptions. In the Pre-Angkorian period, there is little reported royal activity. In the Angkorian period (from the 9th c.), royal inscriptions peak in both the late 9th and late 12th centuries, whereas the greatest number of non-royal inscriptions occurs between the mid 10th and the mid 11th century. Even so, a large proportion of Angkorian period non-royal inscriptions report a role of the ruler. In fact, the graph for inscriptions with a role of the ruler is very close to that for all non-royal inscriptions.[107] The high level of correspondence between these two curves points to the degree to which the authors of the non-royal inscriptions were explicitly stating their dependence on the ruler in various ways for their position, status, and wealth and for sanctioning their actions.

We see two quite different expressions of royal power in the many roles of the ruler mentioned in the non-royal inscriptions in the 10th and 11th centuries and the content of the royal inscriptions predominating in the 9th, and 12th–13th centuries. The royal inscriptions, many

[105] Where an inscription is undated and a researcher has suggested a range of years, such as a century, for its date, the time intervals have been weighted for each half century. For example, an inscription dated to the 10th century CE is considered as half an inscription for the interval 900-949 and half for 950-999. Since some inscriptions have only been dated to within two centuries, some frequencies in Figure 8 might have values as little as 1/4.

[106] The role of rulers in land matters is their most frequently mentioned type of involvement in the non-royal inscriptions.

[107] Although not immediately apparent here, the curve for inscriptions whose founder was unknown varies proportionately to that for the non-royal inscriptions, indicating these inscriptions were also non-royal in origin.

issued as edicts, express power, stress the generosity, bravery and wisdom of the kings, and compare their qualities with those of the gods. Those of the officials emphasise material wealth and status, often referring to their ancestry, the purchase of lands, their endowment of religious foundations and the privileges granted to them. Vickery (1998: 93, n. 36), while not distinguishing between royal and non-royal inscriptions, relates the greatest volume of all inscriptions produced in the first half of the 11th century during the reign of Sūryavarman I (1002-1050), to 'a time of instability and transition', in contrast to the reigns from Yaśovarman I to Jayavarman V (889-1000), Sūryavarman II (1113-1150) and Jayavarman VII (1181-1220), when many inscriptions were produced. It is felt however, that the instability and transition should apply more to the officials, and to the early part of the reign of Sūryavarman I, not the greater part of his 50-year reign which must also be considered as strong, if not also stable. Vickery adopts a similar argument for the Pre-Angkorian 8th century, when very few inscriptions were produced, that this was a period in which the political economy was consolidating (Section 3.3.2).

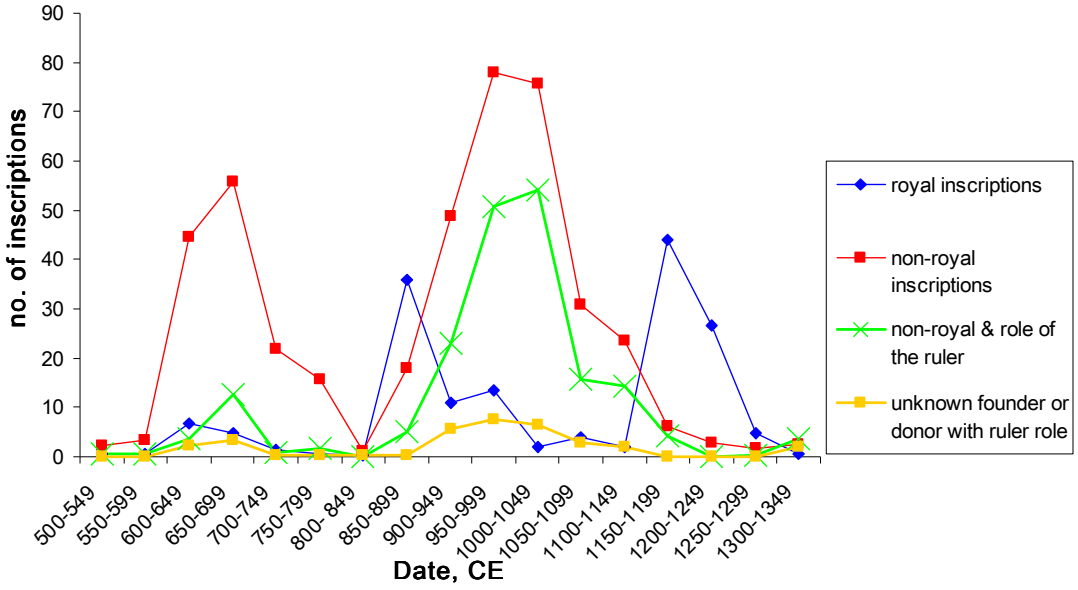


Figure 8 Royal, non-royal inscriptions and role of ruler over time (500-1350 CE)

In Figure 9, the distributions of Angkorian period royal and non-royal inscriptions and of non-royal inscriptions with a stated role of the ruler are plotted against distance from the Bayon temple at Angkor. Perhaps not surprisingly, the greatest frequency of each type of inscription is concentrated around Angkor, the capital. Within a 25 km radius, there are somewhat more royal than non-royal inscriptions. Beyond 25 km, the numbers of all types of inscriptions fall, and now there are always fewer royal than non-royal inscriptions. The graph of non-royal

inscriptions which refer to a role of the ruler roughly parallels that for all non-royal inscriptions, as with the temporal graphs.

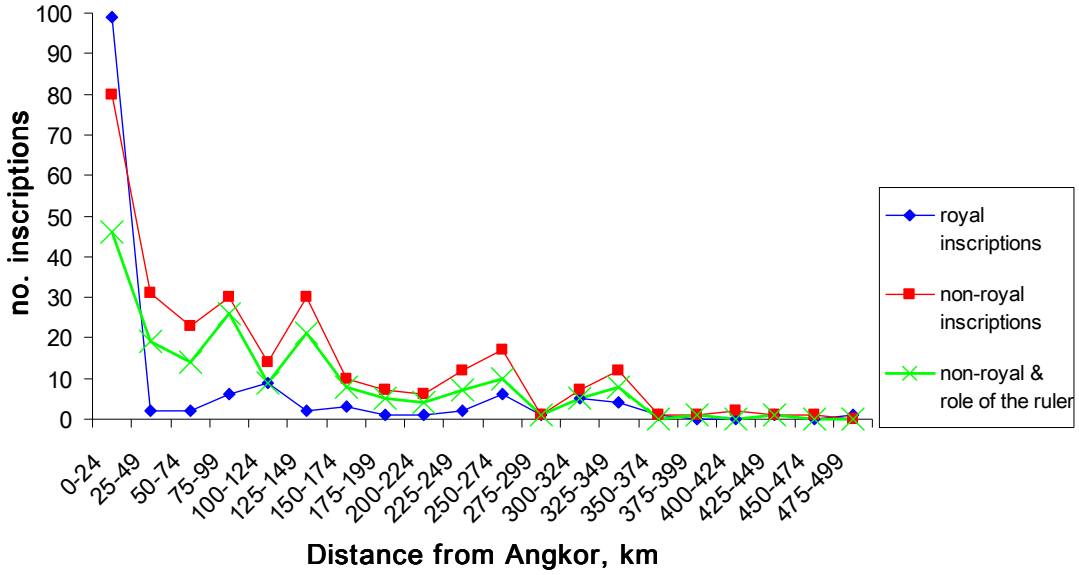


Figure 9 Frequency of Angkorian period inscriptions against distance from Angkor: royal, non-royal and role of ruler

With distance from Angkor, the inscriptions appear to diminish in number in two stages, consistent with three decreasing levels of influence. Frequencies remain fairly constant up to about 150 km. Beyond this distance, there are fewer inscriptions to 350 km, and after that there are almost none.[108] The shapes of the curves may also be a function of the pattern of settlement. For example, the dip in the 25-50 km interval may be related to the proximity of the Tonle Sap Lake, the associated swamps and the Kulen Hills, where there are few temples, while at 150 km the Dangrek Mountains could have affected settlement patterns. It may also be partly due to the existence of modern political boundaries and a potential for Khmer sites and inscriptions in Laos, Vietnam and Thailand to be less frequently recorded or published than those inside Cambodia.

Figure 10 illustrates the same data as percentages of the total for each category. Here it can be seen that about two thirds of all royal inscriptions and one third of the non-royal inscriptions are in the city's core area, i.e. within 25 km of the centre. About 40 percent of the non-royal inscriptions are between 25 km and 150 km out from Angkor, whereas only 13 percent of the

[108] The database has 3 inscriptions written in Old Khmer beyond 500 km and the furthest inscription is actually more than 600 km from Angkor. However, these appear not to have been written when the areas were under central Khmer dominance.

royal inscriptions are in this range. The area encompassed by the 150 km transition incorporates many of Angkor's strategic localities, much of the formalised road network (Hendrickson 2007: 253) and the furthest placement of Angkorian bridges (Mitch Hendrickson 2008, pers. comm.), suggesting that this represents a hinterland for the capital.

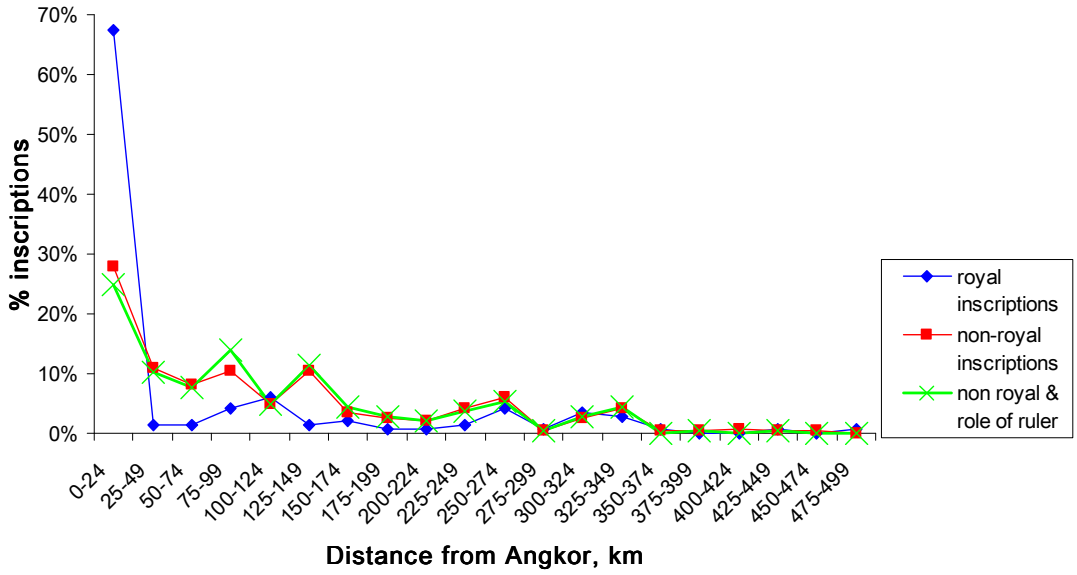


Figure 10 Angkorian period percentages of inscriptions against distance from Angkor: royal, non-royal and role of ruler

## 6.4 Officials in the administration

Because the Pre-Angkorian period mentions very few officials, the following analysis is for the Angkorian period only. Most officials are mentioned in non-royal inscriptions between approximately the mid 10th and the mid 11th century.

Heitzman observed that a number of the officials linked to the Chola royal court functioned as agents 'for royal penetration into local affairs' (1995: 175). He nevertheless recognised the difficulty of distinguishing between honorific and functional titles of officials and only used those he was confident were 'supervisory'. The Khmer titles also present difficulties. Often one cannot be certain which officials were directly responsible to the central authority. The positions and authorities prefixed by *rāja-*, such as *rājakāryya* (royal service) could be fairly confidently deemed to be appointed centrally and the most likely to be acting directly on the state's behalf; it is possible that many of the other titles belonged to regional elites with mainly or solely local responsibilities, albeit having Khmer titles.

In one mention of the *rājakāryya*, K. 212/ 1027, it is implied that local officials, the *khloñ viṣaya* (district chiefs) in the Battambang area, were distinct from the royal service. However, in

others, also in Battambang and elsewhere as far afield as Pracinburi, local officials such as the *khloñ viṣaya* (K1087/ 937; K208/ 1066; K831/ 925), *khloñ sru* (rice chief) (K233/ 10th c.; K831/ 968), *khloñ parrayaṅ* (oil chief) (K831/ 968), *khloñ vrīha* (rice/ paddy chief) (K831/ 968) and *khloñ vala* (population chief) (K1152/ 977), appear to be agents of the *rājakāryya.* From this, it might be inferred that the appointment of officials may to some extent have depended on the relationship between the centre and outlying districts at any particular place and time. A large number of different officials are mentioned in the texts. As will be seen in Section 8.2, many of them seem to have acted in multiple roles. Appendix 7 summarises the most commonly mentioned officials and their functions.

This study examines those titles of all officials and authorities carrying out functions, other than those obviously at village level or pertaining to ritual temple duties. Status titles, which do not seem to be associated with a particular function, such as *mratāñ,* have not been analysed. Many titles are still not understood – for example, it may not be clear whether they were religious or honorific (Vickery 1985: 230). Insofar as they bore Khmer titles and their roles were sanctioned by the state, the presence of these officials is seen as some indicator of central influence, though not necessarily of central control.[109] Total numbers of the different officials mentioned, which might be a good indicator of their relative importance at different times or locations, are not used in the analysis, both because it is often not clear if a person or the authority is implied, and because sometimes the plurality of officials may not be obvious.[110]

In Figure 11, the percentage of different titles extant in each 50-year time interval,[111] together with the percentage of new inscriptions, are graphed, as indicators of the diversity of officials over time. This is compared with the percentages of royal and non-royal inscriptions. It can be seen that the number of official titles peaks around 1000-1050 CE, which coincides with the end of the period in which the number of non-royal inscriptions had reached a plateau. At first glance, this appears to concur with the opinion that the Khmer administration was established in this period (Section 2.4.1). After 1050 CE, the numbers of both non-royal inscriptions and titles diminish.

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[109] Historical references to officials (e.g. a relative who was an official in an earlier period) are counted as at the time of writing, since in eight of the nine instances where this might be an issue, the period under consideration is no more than a generation earlier. In K. 956, the land history covers the approximate period of 802-910 CE, but there are only three entries for officials, not significant for this study.

[110] Khmer does not contain any forms of tense, gender or number, and does not indicate case by any inflection. It does however have many ways of expressing grammatical functions: syntax or word order; context, specifying the time or number of objects; and grammatical terms such as prepositions, conjunctions, particles, markers and linkers (Pou, 2003: 273-4).

[111] If two disparate intervals contain a particular title, it is taken that this title, though not seen, was in use in the interval between them.

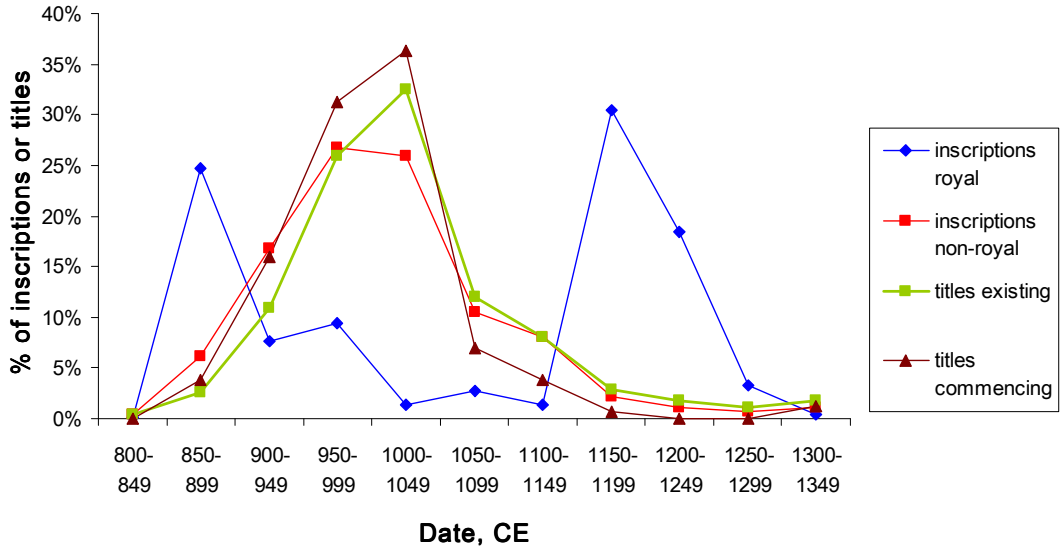


Figure 11 Angkorian period percentages of inscriptions with titles over time: officials, royal and non-royal inscriptions (weighted where only the century/s indicated).

It is not clear if the number of official titles did actually decline, or if the depicted decrease was simply a function of the number of inscriptions. However, since the curves for existing titles and commencing titles are very close to the curve for non-royal inscriptions, having correlation coefficients of $r^2$=0.92 and 0.95 respectively (Appendix A16.10), this implies that the diversity of titles is a function of the number of published non-royal inscriptions. Furthermore, it is highly unlikely that the diversity of official titles would have both increased and then declined with such close correspondence to the production of inscriptions. The frequency of occurrence of the non-royal inscriptions is a function of how many foundations produced inscriptions, how many of these inscriptions survived, were found and were published and how many can be dated – all which are obviously unrelated to the diversity of titles. Whatever the relationship between the number of inscriptions and the number of titles – and hence of the administrative structure – there should be time lags between observed changes, which is not seen here. A possible explanation is that the titles are samples from a larger set, some or many already existing before the appearance of the non-royal inscriptions, and that, regardless of any changes to society or the administration, they generally continued to be used after the non-royal inscriptions declined.

To test this, Figure 12 plots temporal distributions of three of the officials or authorities associated with tax and immunities in the Angkorian period: the *rājakāryya; the khloñ vala*, the most frequently occurring official; and the *khloñ viṣaya*. These are seen together as percentages of their totals. The distributions of the first two follow the distribution of non-royal inscriptions closely ($r^2$=0.86 and 0.85 respectively), while the *khloñ viṣaya* appears to follow a

somewhat different pattern of occurrence ($r^2$=0.61) perhaps because of the appreciably lower incidence of this official in the central area around Angkor (Figure 14). Another contributing factor may be that the position of *khloñ viṣaya* varied during the early Angkorian period when the administrative districts were being created. An indication of some uncertainty of the *khloñ viṣaya*'s role is the somewhat interchangeable use of *pramān* (in use from the Pre-Angkorian to refer to territory or district), and the Angkorian *viṣaya* (Sahai 1977a).

The close correlations of the *rājakāryya and khloñ vala* with the non-royal inscriptions give further weight to the idea above that the titles proliferated early in the Angkorian period and continued late, perhaps even beyond the Angkorian period.

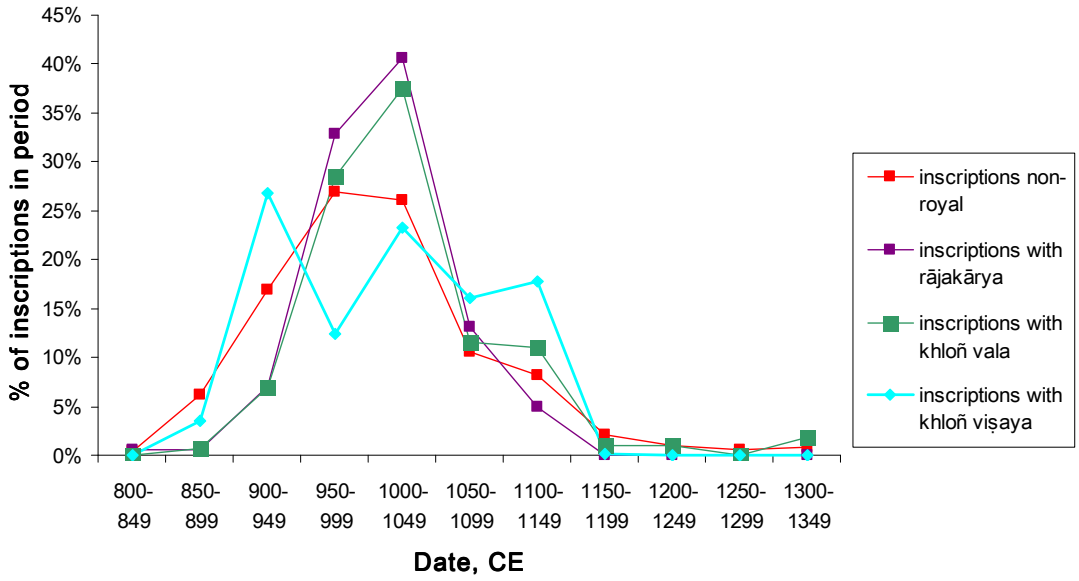


Figure 12 Angkorian period inscriptions as percentages of their totals over time: *khloñ vala*, *khloñ viṣaya* and *rājakāryya*

Figure 13 shows the percentages for the number of inscriptions with official titles and of non-royal inscriptions against distance. The greatest percentage (20 percent and 30 percent respectively) is in the core area around the capital Angkor. This drops off to around 10 percent for each 25 km interval up to about 150 km, after which the percentage falls again, fluctuating within a band of 0-10 percent up to about 350 km. Again the distribution of titles correlates very well with the distribution of non-royal inscriptions.

Figure 14 plots the percentages of specific officials with distance from Angkor. Once more the graphs for *rājakāryya* and *khloñ vala* as well as those for all officials are proportional to the curve for all non-royal inscriptions and are found up to distances of 450 km from Angkor. The curve for the *khloñ viṣaya* is significantly different in the core area of Angkor, which is to be expected, since the role of district chiefs may not have been so important around the centre.

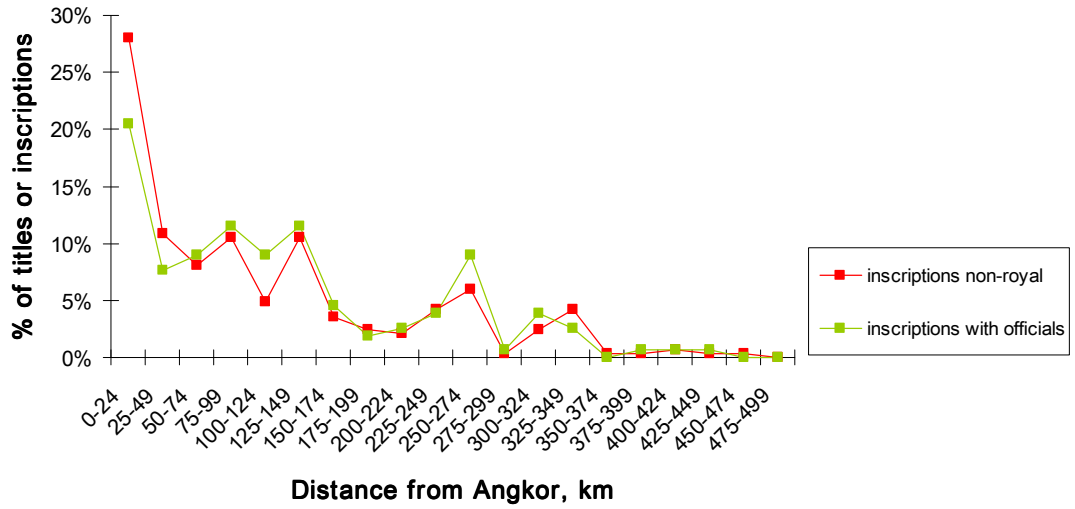


Figure 13 Angkorian period percentages of inscriptions against distance from Angkor: titles and non-royal inscriptions

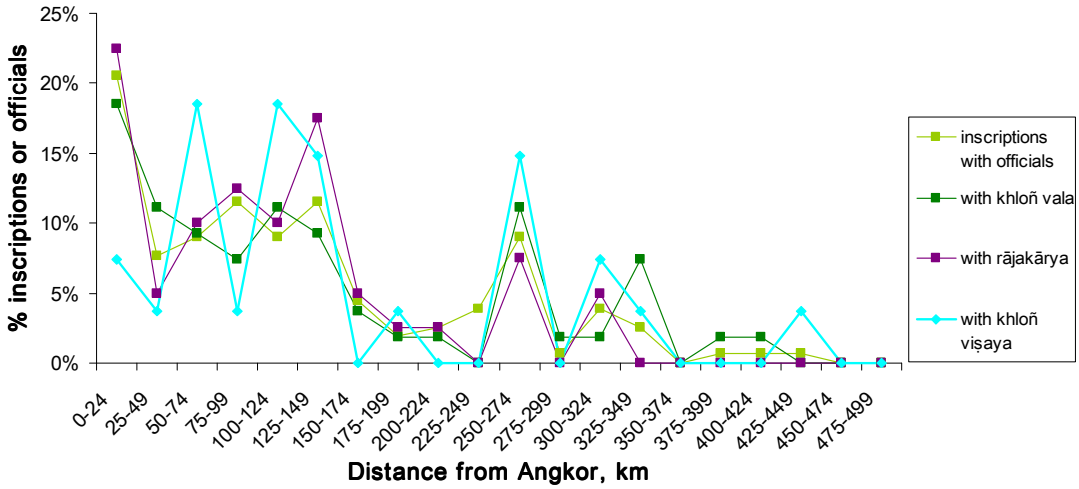


Figure 14 Angkorian period percentages of inscriptions with officials against distance from Angkor

The graphs have illustrated that royal or non-royal inscriptions predominated at different times, very likely in line with changes in the organisational structure of the state. In the non-royal inscriptions, the ruling monarch is mentioned in many roles, always appearing to be in control in matters of law, land distribution and foundation affairs. The close correlations between the number of official titles and the number of inscriptions suggest that many of the titles were established early in the Angkorian period. There appear to be three zones of diminishing importance to the administration: up to 25 km from central Angkor; to 150 km and then to 350

km or more. This supports the idea that the level of involvement of the capital with the affairs of the regions diminished with distance, but that the administrative structure in the regions did not change. These indicators of state influence will be examined further and discussed below in relation to the geographical distribution of sites and communications.

## 6.5 Centres and communication networks

Angkor's expansion and methods of control were not simply a function of distance, but also related to economic and political considerations. To gain further insight into how Khmer administration might have functioned, the spatial distribution of the inscriptions and communication links will be appraised.

In an empire the size of Angkor's, it may never have been feasible to exercise controls uniformly. At a communication speed of 25 km per day over poor roads, and with some Khmer settlements over 500 km distant from the capital, decentralised administration, with a network of regional centres, would have functioned more effectively. The more peripheral an area, the more likely it is to have been decentralised, though nevertheless integrated through obligations such as taxation, religious ideology and personal alliances. After local appointees had been authorised to govern, areas that were distant from the capital probably experienced minimal interference by the centre.

On the other hand, strategically important and economically rich areas could have been closely supervised, with a greater presence of officials and communication links to the capital. Sedov (1967: 187-90) identified what he considered to be 10-13 large temples which acted as 'central' temples in relation to the smaller local, personal temples in the 10th–11th centuries (Section 2.4.2). He chose these because they were large; their inscriptions indicated long duration; and they received offerings from other temples. Unfortunately, only seven of them may be identified with any certainty (see Appendix 2).

Whether or not Sedov was correct, we might expect to find that there were centres of regional political and economic importance, functioning as nodes in a communications network, with links to a still greater international network. These nodes may have originated as transportation junctions, sites for river crossings, ritual activities, or centres for resource management, developing as locations of markets, or perhaps for social or judicial activities (Smith 2006: 106). Those which continued to be important could have seen permanent temples established. Such centres would attract personnel for temple construction, operation and maintenance, which in turn might generate more local infrastructure, temples and inscriptions, population growth, artisans, markets and state investment. Administration centres, for both local and central officials, would tend to follow (Stein 1984a: 163-70; 1984b: 201-2; e.g. Heitzman 1987). Some Khmer sites may even have been in existence as early seats of chiefly government.

It might follow that features associated with regional centres would include high densities of inscriptions; temples or temple groups with long durations; and prominent construction. Royal temple building could indicate strategic central interest, such as to secure revenue in an area. An aim of this section is to locate such regional centres; to assess if they could have been nodes in a network; and to look at the functions they might have served. It will consider whether, despite a seemingly limited road network in the north, suggesting that regional communications were not a priority, extensive communication routes might have been maintained throughout the Pre-Angkorian and Angkorian periods. The data used will be the locations and dates of temple and inscription sites.

## 6.6 Identification of regional centres

### 6.6.1 Density of inscriptions

Hendrickson's (2007) study, outlined in Section 3.3.1, made a significant contribution to our understanding of when, why and how the different sections of the communication network were established. He identified 'communication corridors' pertaining to successive Angkorian rulers, lying within the boundary circumscribed by a number of sites considered to have had longstanding royal association or to have strategic importance. As was argued above (Section 6.2), all sites and their inscriptions indicate Khmer influence, and this in turn implies that there must have been communication links. Therefore, by using the locations and dates of all available inscriptions, we may gain a more comprehensive appreciation of the communication corridors beyond the identified road network. As a first step, we shall seek those sites which might have been associated with regional centres. High densities of temple sites, and thus of inscription sites, indicate concentrations of economic and political activity, which are commonly found in regional centres. The zone of influence of each site was taken to be a circle of radius 25 km or one day's journey. Where zones of influence overlap, the Kernel density[112] increases. High densities of temple sites will thus have high Kernel densities.

Figure 15 is a Kernel density distribution, having six density zones,[113] of the 536 database inscription sites of known location.[114] The areas having the higher densities (Density Classes 4

[112] To calculate the Kernel densities over a surface, a circular boundary is drawn around each sample point, in this case, each location with an inscription. A density distribution going from a maximum at the point to 0 at the boundary is applied. The size of the kernel is determined by the radius to this boundary, in this case 25 km. The surface is divided into small cells and the density value for each cell is calculated by adding the values of all the kernel surfaces where they overlay the cell. Where two or more kernels overlap at a cell centre, the value for that cell is the sum of the overlapping kernel values divided by the area within the circular boundary (ESRI 2004-2007).

[113] The density zones adopted vary geometrically. That is, the upper limit of one zone represents a Kernel density three times that of the lower limit. This was chosen by trial and error as a simple and robust distribution for highlighting clusters of high density.

to 6) are coloured yellow to red and are taken to represent 'dense' clusters of inscription sites. This immediately highlights two broad regions of high density, one in the south and another in the central-north of Cambodia. However, other areas of relatively concentrated inscription sites can also be seen broadly linking the two regions. One is to the north-east from Angkor, others are to the north-west and west of Angkor, and two approximately north-south strips more or less follow the Mekong, one beginning at Vat Phu, the other extending south south-east from where the south-east roads terminate.

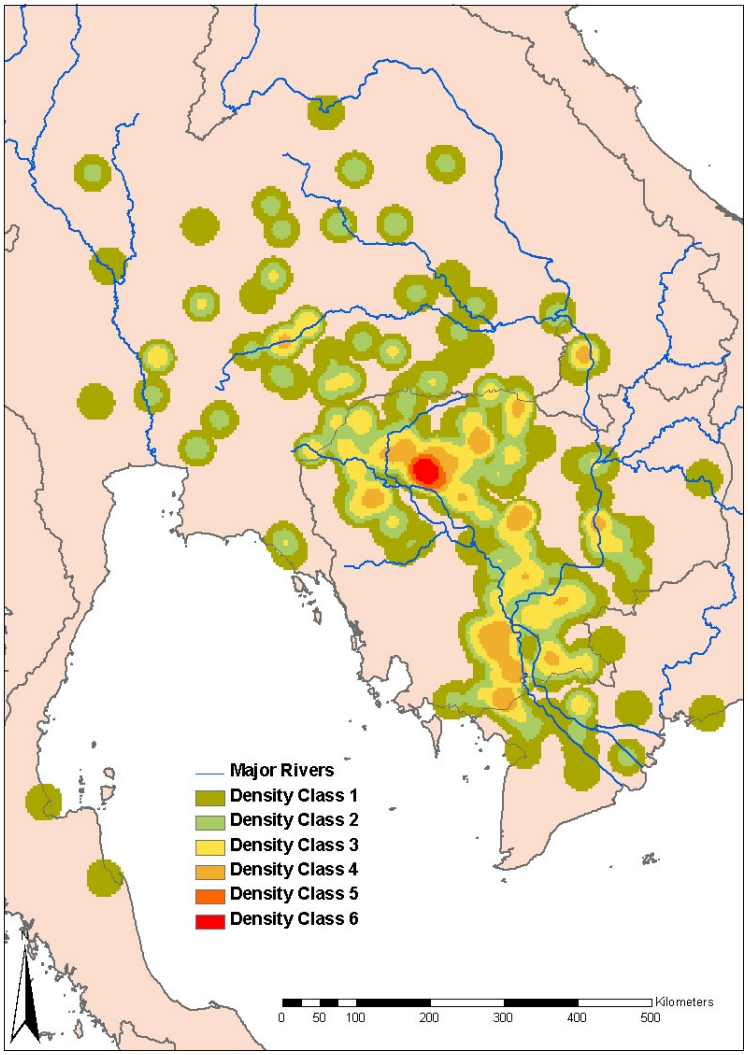


Figure 15 Kernel density distribution (all inscriptions)

Appendix 12 shows a much larger data set of over 7000 sites in Cambodia, Vietnam, Laos and Thailand with indications of Khmer influence (CISARK 2007). Nearly 800 of these are in Cambodia and have been mapped by Carte Archéologiques du Cambodge (M.C.B.A. and

[114] This distribution includes inscriptions where the date is unknown.

E.F.E.O. 2007).[115] The distribution and density of sites across Cambodia in the figure seems to concur with the view that the inscription sites of this study are largely representative of the broader distribution of all Khmer durable construction.

This data may be compared with a map of recent population densities in the same region (Appendix 13). The areas of high population density correspond with the regions of high density of inscriptions in Figure 15 and CISARK sites in Appendix 12, suggesting some continuity of communication links. There are two important differences, however. The first is that while the densest area of population is the delta region of the Mekong, this is matched by the high densities of inscriptions and of CISARK sites only as far as the Vietnamese border, suggesting that not all Khmer sites in Vietnam have been recorded. The second is that the current population density around Angkor is not as high as in the delta and is even lower in much of the northern part of Cambodia, in contrast to the corresponding densities of inscriptions and CISARK sites. This points to a post-Angkorian reduction in population and agricultural production in the centre and the north, consistent with the apparent weakening of the Angkorian Empire and the subsequent depopulation of the region (Groslier 1998[1986]).

Figures 16 and 17 are Kernel density distributions of Pre-Angkorian and Angkorian inscription sites respectively. As already seen in Figure 7, they illustrate that while the overall centroid of the sites moved from the south to the north between the two periods, there are large areas in the south and the north that had clusters of inscription sites in both periods, i.e. where foundations continued to be established from the Pre-Angkorian period into the Angkorian, or where Pre-Angkorian temple sites continued to be occupied into the Angkorian period. It might be expected that the longest occupied of these sites acted as 'centres' and that they would often be found in areas of high inscription density.

To observe the distribution of activity under different royal administrations, the locations of inscriptions attributed to individual reigns in the Angkorian period were examined together with the Kernel density distributions (Appendix 11). These inscriptions were written by a Khmer king, referred to him, or could be dated with some accuracy to his reign. A summary of individual reigns, including construction and military exploits, is in Appendix 1. What immediately becomes apparent about the reigns in which more than a handful of inscriptions were produced, is that in the 9th and 10th centuries, activity was fairly continuously maintained in the high density areas of the north-south corridors described above. This is seen particularly for the periods of Indravarman I (877-889), Yaśovarman I (889-915), Jayavarman IV (928-941), Rājendravarman (944-968) and Jayavarman V (968-1000). From Jayavarman V, the centroid of the sites shifted northwards and thereafter interest was focused to the north of the

[115] Locations for Cambodia were determined by geo-referencing the maps produced. I am grateful to the Archaeological Computing Laboratory of the University of Sydney for providing this data.

Tonle Sap, although Sūryavarman I (1002-1050), Udayādityavarman II (1050-1066), Jayavarman VI (1080-1107), Sūryavarman II (1113-1150), Tribhuvanādityavarman (1165-1177) and Jayavarman VII (1181-1220) are all mentioned in inscriptions in the south of Cambodia.

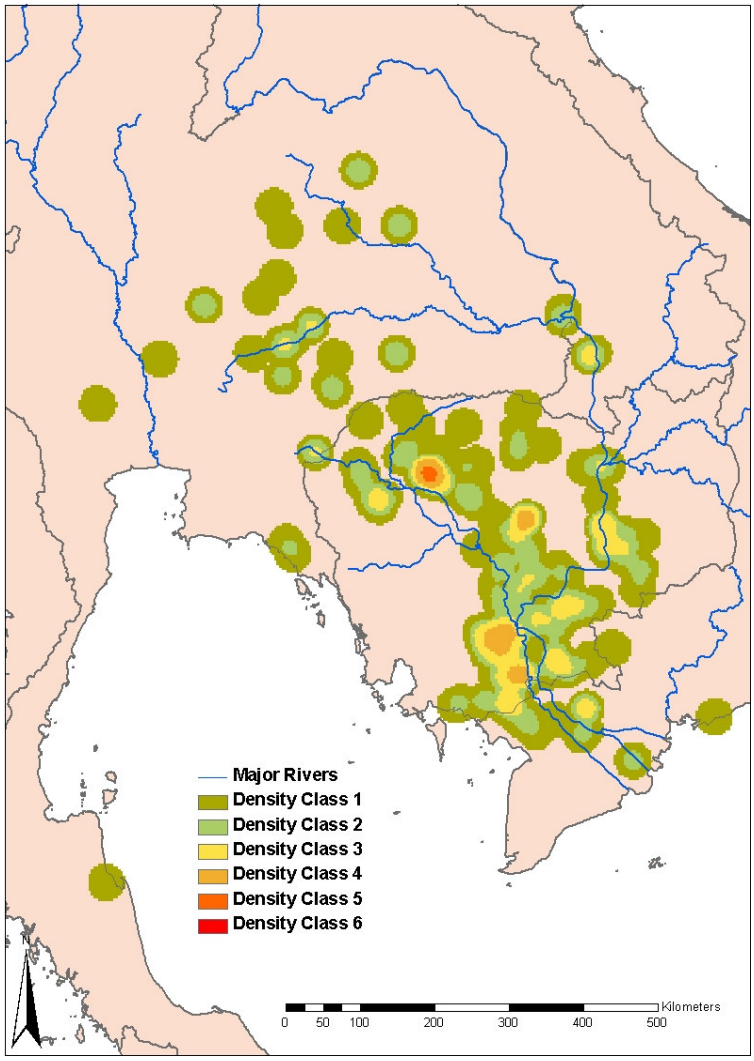


Figure 16 Kernel density distribution (Pre-Angkorian period inscriptions)

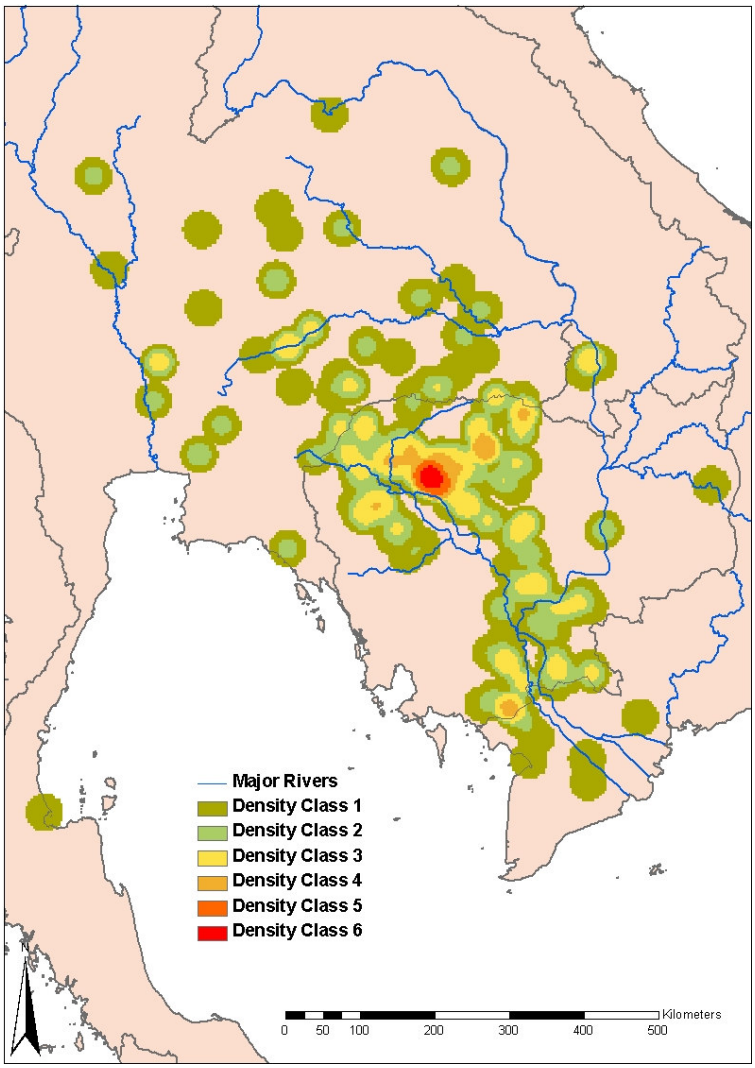


Figure 17 Kernel density distribution (Angkorian period inscriptions)

### 6.6.2 Duration

A regional centre might be indicated by the duration either of a group of sites or a single site spanning some centuries of occupation.[116] Individual sites with durations of between 300 and 700 years are shown in Figure 18. These are well distributed throughout Khmer territory.

[116] Evidence of age may also be based on architectural styles, as well as on dated inscriptions (Hendrickson 2007: 192).

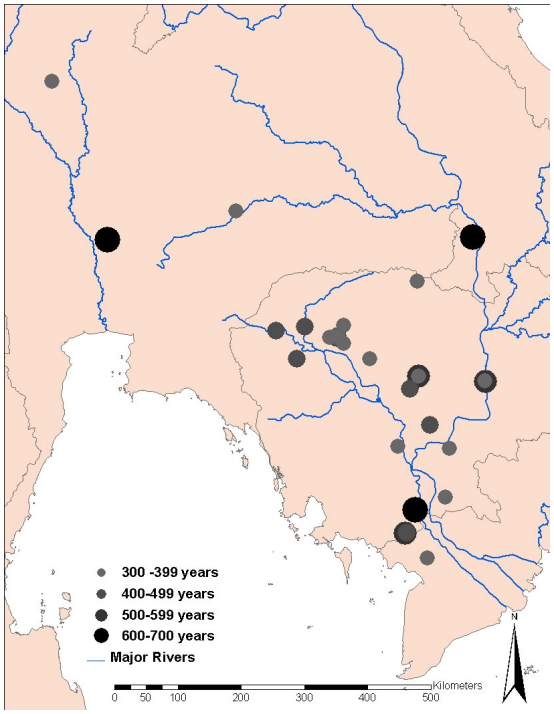


Figure 18 Locations of inscription sites of long duration

### 6.6.3 Prominent sites

Sites may have become important in the Angkorian period, when they offered new strategic, political or economic advantages. They may be at relatively more isolated sites, perhaps notable for their size. The construction of large temples, mostly by rulers, but also by officials (for example at Sdok Kak Thom[117]), may be an expression of wealth and power. However, where such monuments are constructed in locations unlikely to be viewed by many people, their presence on major thoroughfares, near passes, at lookouts, or close to important resources may provide some strategic benefit. Such sites may not have been of long duration, if for example they were associated with a road built later in the Angkorian period. For the same reason, they need not be part of a cluster of sites.

### 6.6.4 Regional centres

Eighteen areas with Kernel Density Classes 4 to 6 of the Kernel distribution in Figure 15 were delimited and all inscription sites within them identified. For each group, the following parameters were determined: the date range of each group of sites;[118] and the date range of

[117] The temple, dated to 1053 CE, was probably constructed in place of an earlier one, destroyed during the civil war leading up to the reign of Sūryavarman I (Jacques 1986: 331).

[118] The date range is based on the minimum and maximum end dates for the group, where continual occupation might be reasonably inferred. (see Appendix 9).

the site with the greatest duration. The clusters were named after the site with the longest duration or with the greatest prominence. Three of the sites corresponded with Sedov's central temples of the 10th–11th centuries: Vat Baset, Neak Buos, and Vat Phu. Four others were among Hendrickson's major sites (2007: Figure 9.4): Koh Ker, Beng Mealea, Sambor Pre Kuk and Vat Bati. The remaining eleven in this study were: Angkor, Ballang, Kralan, Phnom Bayang, Phnom Da, Preah Nan, Preah Theat Preah Srei, Prasat Praptus, Sambor, Ta Kam and Tuol Preah Theat.

It was noted that six additional sites, apparently not in clusters, were of long duration. These were Banteay Nan, Kok Roka, Lonvek, Lopburi, Phimai and Vong-the. The CISARK (2007) data[119] for Cambodia (Appendix 12) indicates that these too may have been within clusters.

Finally, there were nine prominent temples, also not in clusters, whose inscriptions do not indicate long duration. These had been identified by Hendrickson because of their high visibility: Banteay Chhmar, Phnom Rung, Phnom Srok, Preah Khan of Kompong Svay, Preah Vihear, Prasat Andaet, Prasat Don An, Sdok Kak Thom and Vat Nokor.

These sites and groups are plotted in Figure 19 over the Kernel density distribution of all inscriptions (Figure 15). Their identifying features are summarised in Appendix 10.

## 6.7 Communication networks

### 6.7.1 Cluster network

The unbroken areas of colour in the Kernel representations in Figure 19 indicate zones where inscription sites are in close proximity, namely where the 25 km radius zones of influence overlap. This suggests there were long-standing communication links between them, forming a communication zone which covered a broad area of the Khmer heartland in both the Pre-Angkorian and Angkorian periods. This is apparent even in the reigns of individual Angkorian rulers (Appendix 11). A suggested network based on this communication zone is depicted in Figure 20. The dominant communication corridor ran from Angkor to the south of Cambodia, continuing beyond the south-east roads through Prah Nan, crossing the Tonle Sap River and the Mekong River, and continuing to the south through the Pre-Angkorian heartland on both sides of the Mekong. Other routes are indicated along the Mekong River from Sambor, linking to regional centres in the south. Use of water or land would have depended on the seasonal flow of the river. The Angkorian north-east road has been traced to Vat Phu and the north-west road to Phimai, and these appear to be termini. However, it is possible that the west road ending at Sdok Kak Thom continued further, ultimately connecting Angkor to the Lopburi region in central Thailand. The furthest stretches of the west road and the north-west road are

[119] Some sites may not be attributable to Khmer influence, though they would indicate areas of long duration of occupation.

less visible than the sections closer to Angkor and this may be because there was more military and trade movement nearer to the capital. Alternatively, the ends of these two roads may represent the border between cultivable and savannah lands (Hendrickson 2007: 181; 244). The rich rice-producing area around Vat Baset (Battambang) was accessible via the Tonle Sap Lake during the wet season, but less often in the dry, when communication would, as today, have been by a road circumventing the lake.

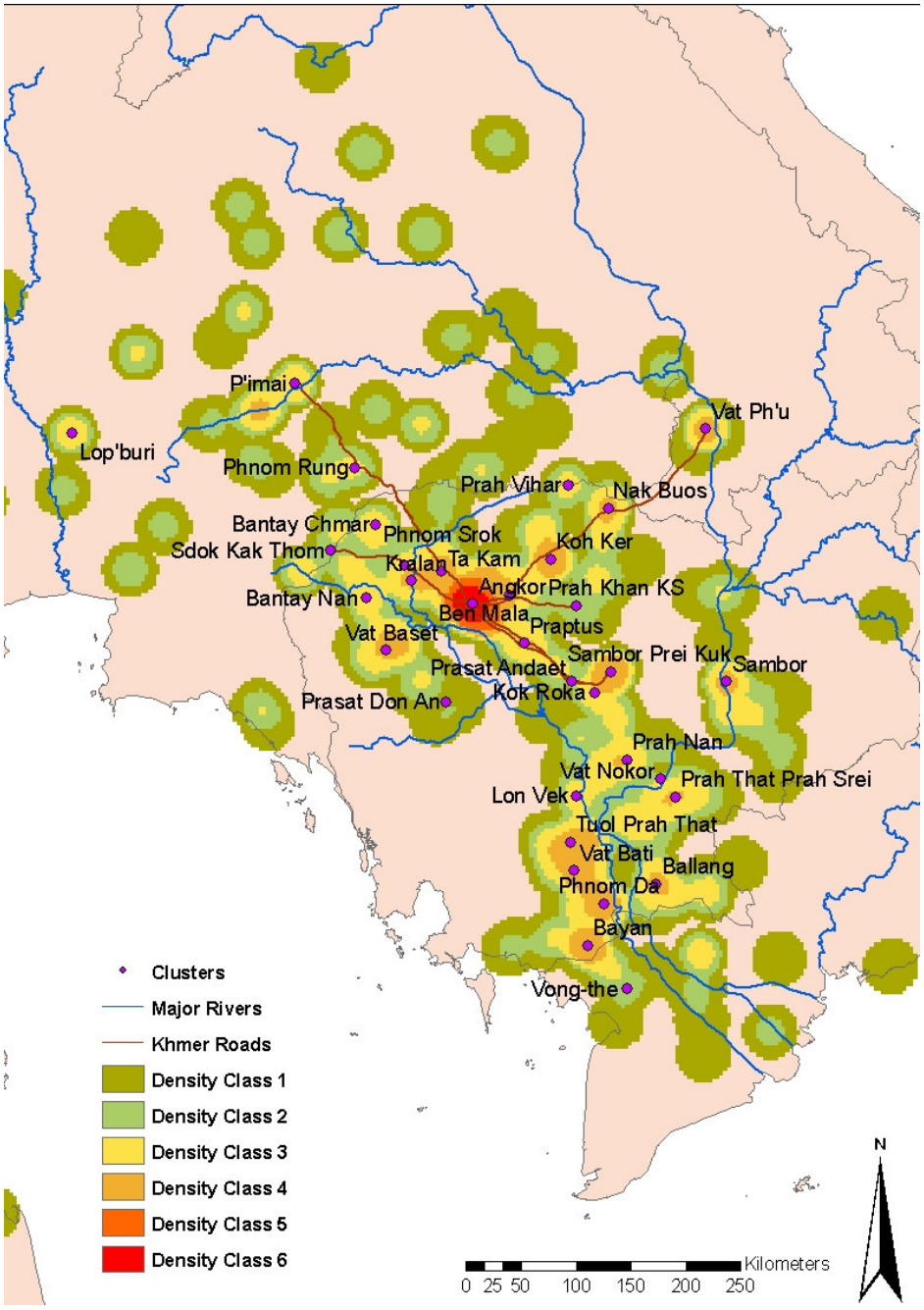


Figure 19 Cluster groups and prominent sites (Pre-Angkorian and Angkorian periods)

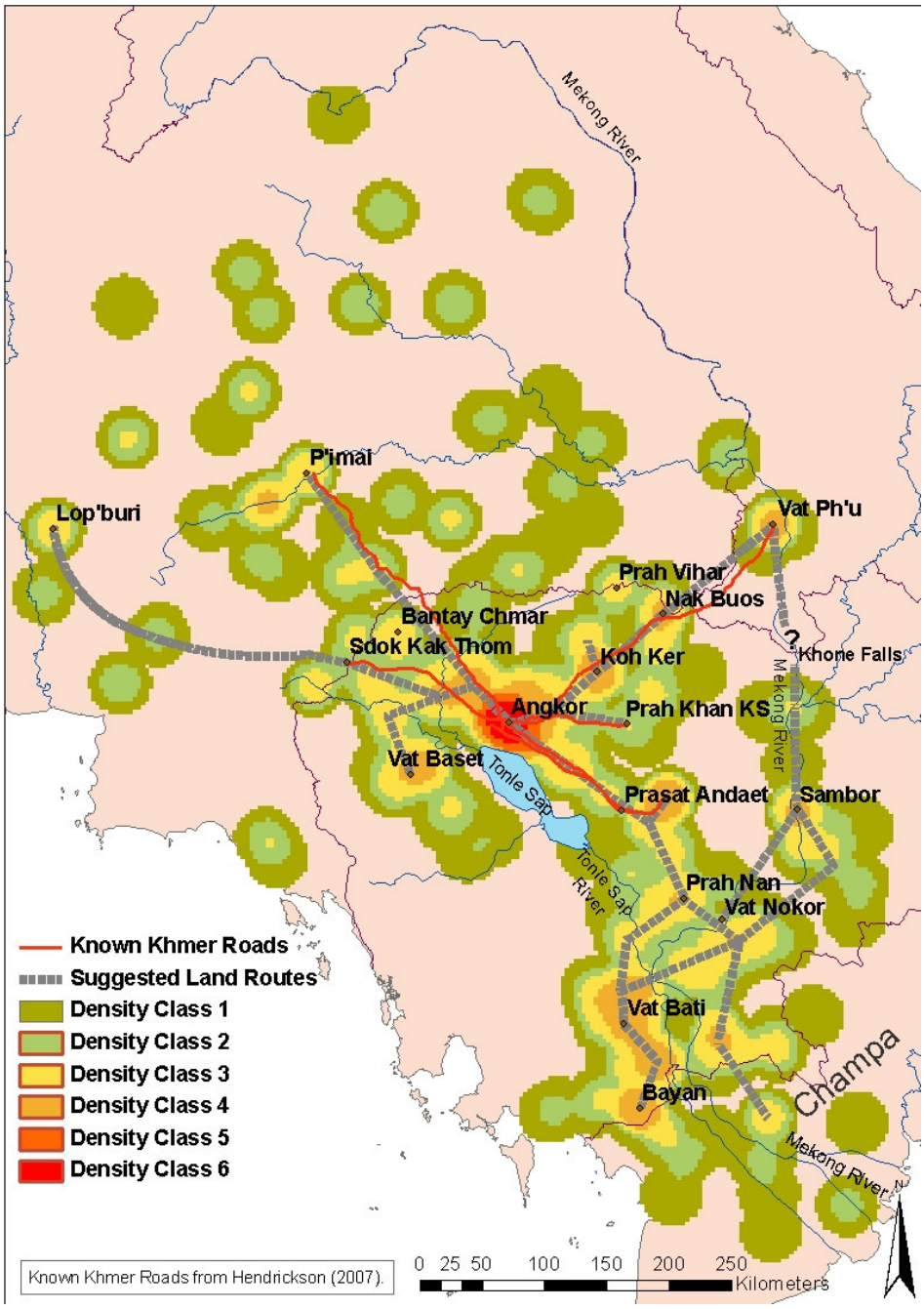


Figure 20 Suggested land communication corridors.

It is also possible that an extension of one of the formalised south-east roads continued beyond Prasat Andaet to the south (Groslier 1973: 117; see also Section 3.3.1). Groslier (1998[1986]: 262) argues that Jayavarman VII built Vat Nokor and Ta Prohm of Bati (in the Vat Bati cluster), both west of the Mekong, to establish a borderland and military bases against the Cham, with whom the Khmer were engaged in numerous conflicts in the south (Hendrickson 2007: 250). Communications between sites of predominantly Pre-Angkorian areas and sites in

the north have yet to be studied (Hendrickson 2007: 191) and it has yet to be demonstrated that the south-east roads continued to Vat Nokor, as originally suggested by Albrecht (1905: 10 cited in Hendrickson 2007: 189). However, any extension of formal roads to the south may have been of lower importance than other roads closer to the capital in the Angkorian period.

Figure 21 shows the same corridors together with water routes. Navigability varied according to the season, particularly during floods and very low flows. The most important route was from Angkor to the sea along the Tonle Sap, Tonle River and the Mekong River. From the junction of the Tonle River with the Mekong, another vital water route would have gone upstream to Sambor and possibly beyond to the Khone Falls. Beyond the Khone Falls, the Mekong is navigable, past Vat Phu, to Vientiane and further north.

Water transport is often faster and more cost effective than roads, especially for bulk goods. Trade goods, arriving overland or by sea from the delta area may have reached Angkor via the Mekong River system and the Tonle Sap (Section 3.3.1). Although much sea traffic between India and China by-passed the Cambodian coast, and post-Funan ports have not yet been found in the Mekong delta region (Pierre-Yves Manguin 2008, pers. comm.), it seems likely that some trade would have been conducted along this route.

Goods could be transported from the Tonle Sap Lake to Preah Vihear via the Sen River, then over the Dangrek Range to the Khorat Plateau, although the Angkor-Phimai road was a more direct route to Angkor. North of the Dangrek Range, the Mun River system was navigable in parts (Hendrickson 2007: 244) and could have facilitated communication between Lopburi and the upper Mekong system. Lopburi, which was controlled by the Khmer in the first half of the 11th and in the 12th century, was important for access to commercial centres on the Isthmus of Kra and international trade routes (Hall 1985: 173-176). Population centres on major rivers and roads must have been an essential feature of trade networks for provisioning, exchanging goods, storage and duty collection, although we have no evidence of these activities in the Khmer texts.

Only two inscriptions refer to river transport (K. 940/ 7th c. and K. 364/ 12th c.) although four others mention boats. While settlement in the 11th century was often associated with river systems (Hall 1985: 173; Groslier 1998[1974]: 114), the many Angkorian sites near rivers originating in the pre-Angkorian period indicate that settlement began earlier. For example, the long-duration Vat Baset cluster in the Battambang area was in easy access to the Tonle Sap Lake and Angkor by water.

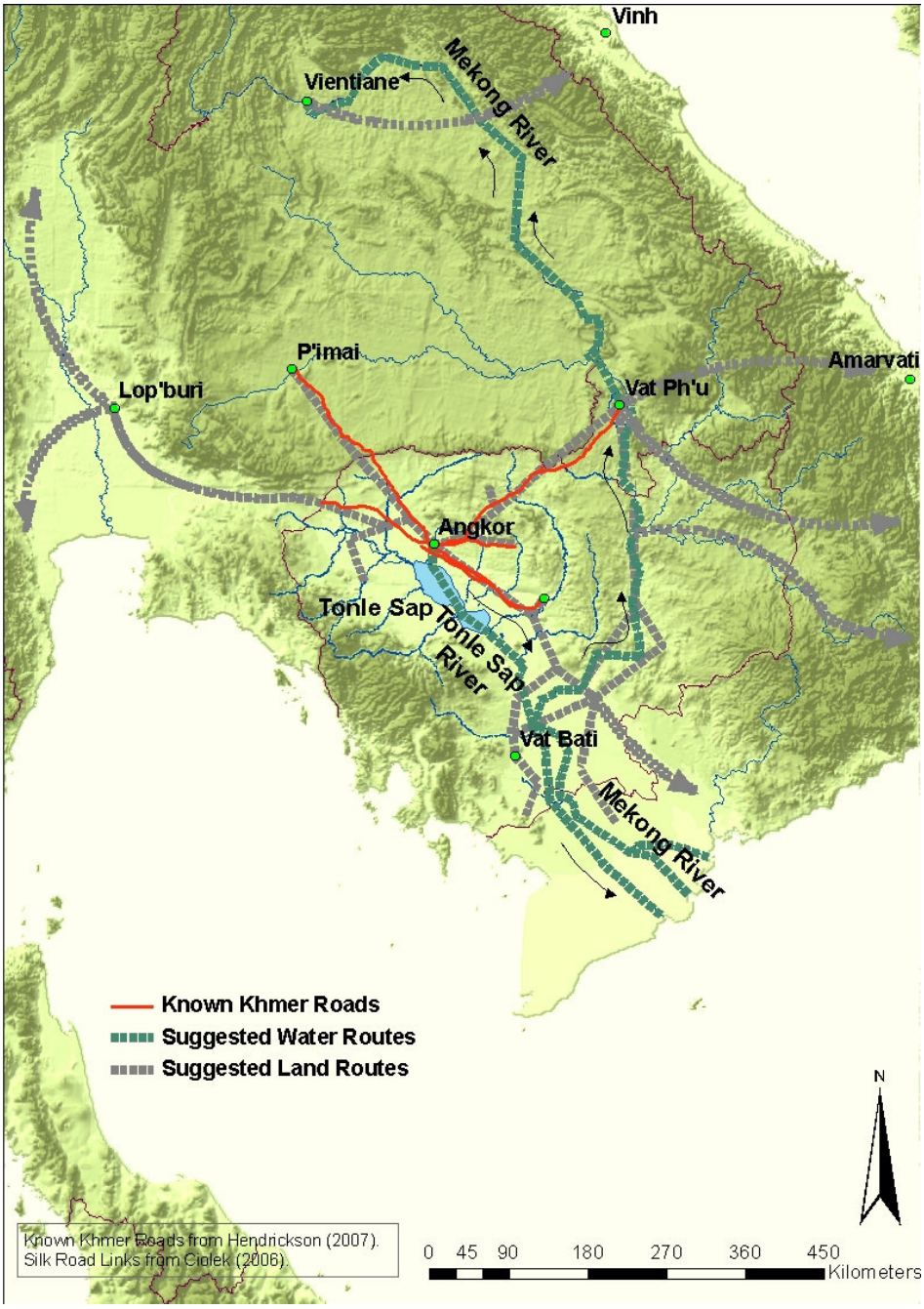


Figure 21 Khmer land and water communication routes

### 6.7.2 Links to international trade

The supply routes linking the Khmer with the outside world are not well documented, although recent research on Old World trade routes (e.g. ODDDA 1999-; Yang 2004) and by Hendrickson (2007) on the Angkorian communication network has begun to throw light on these. Figure 22 shows suggested communication links between Angkor's road and river

systems and the Southern Silk Route, the coastal areas of present day Vietnam, Thailand and the Isthmus of Kra. Arguably, all or many were used for transportation well before the Angkor era. The emerging picture is one of a continuous and integrated network, linking the Khmer heartland to the outside world. Sections were augmented during the Angkorian period, apparently from the mid 10th century.

Reports of conflicts between the Khmer and the Cham[120] are found in inscriptions of both of these polities as well as in Chinese records. These resulted largely from rivalry for a share of the international trade, especially from the time of the Song dynasty's re-engagement in foreign commerce in the 11th century (Hall and Whitmore 1976: 306). Cham attacks on the Khmer are recorded from the early 9th century (Cœdès 1968[1964]: 104; Wolters 1973: 28) and there were retaliations a little later in northern Champa, apparently via an overland route (Wolters 1973: 28). In the 10th century, Rājendravarman I plundered a capital of Champa near Nga Trang (Mabbett and Chandler 1996: 100; Briggs 1999[1951]: 126; Jacques and Dumont [1990]1999: 71). The aggression increased in the 10th–11th century, as both Angkor under Sūryavarman I and Champa were expanding into new territories, both wishing to exploit the mountain pass region in search of tradeable forest products. Access to the coastal trade via this overland route would allow the Khmer to avoid Cham ports on the coast, especially Vijaya, near modern Qui Nho'n, potentially depriving Champa of mountain resources and of trade (Hall 1999[1992]: 257; 266). Retaliation came with the Cham attack on Śambhupura (Sambor) on the Mekong in 1050 (Hall 1985: 185 n. 88; Briggs 1999[1951]: 168).[121] The area around Śambhupura was important because of its location on the Mekong River and its access to the Stung Treng area, where three major rivers from the north-east converged, and possibly further north to Vat Phu (Vickery 1998: 379).

Both Sūryavarman II and Jayavarman VII expanded to the east and made diplomatic initiatives towards China, Champa and Đại Việt (Hall 1985: 207; Maspero 2002[1928]: 75; Vickery 2005: 5). The rivalry continued up to the mid 13th century. Vickery proposes that the end of the conflict could have resulted from Cambodia's political decline, the Mongol invasions in Vietnam and Champa, and Vietnamese expansion into Champa (Vickery 2006). However, Chinese maritime trade was in decline in this period and this too may also have been a cause (Wade 2006: 9; 32).

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[120] I am grateful to Gabrielle Ewington for the insights gained from her report 'Protecting the ten regions from fear; conflict between the Chams and the Khmers from the 9th to the 15th centuries'.

[121] Śambhupura, or modern Sambor on the Mekong, important from at least the 8th century, became a centre for trade and contact with eastern and north-eastern hill people who supplied forest products in the 11th century (Hall 1985: 184; Vickery 1998: 28).

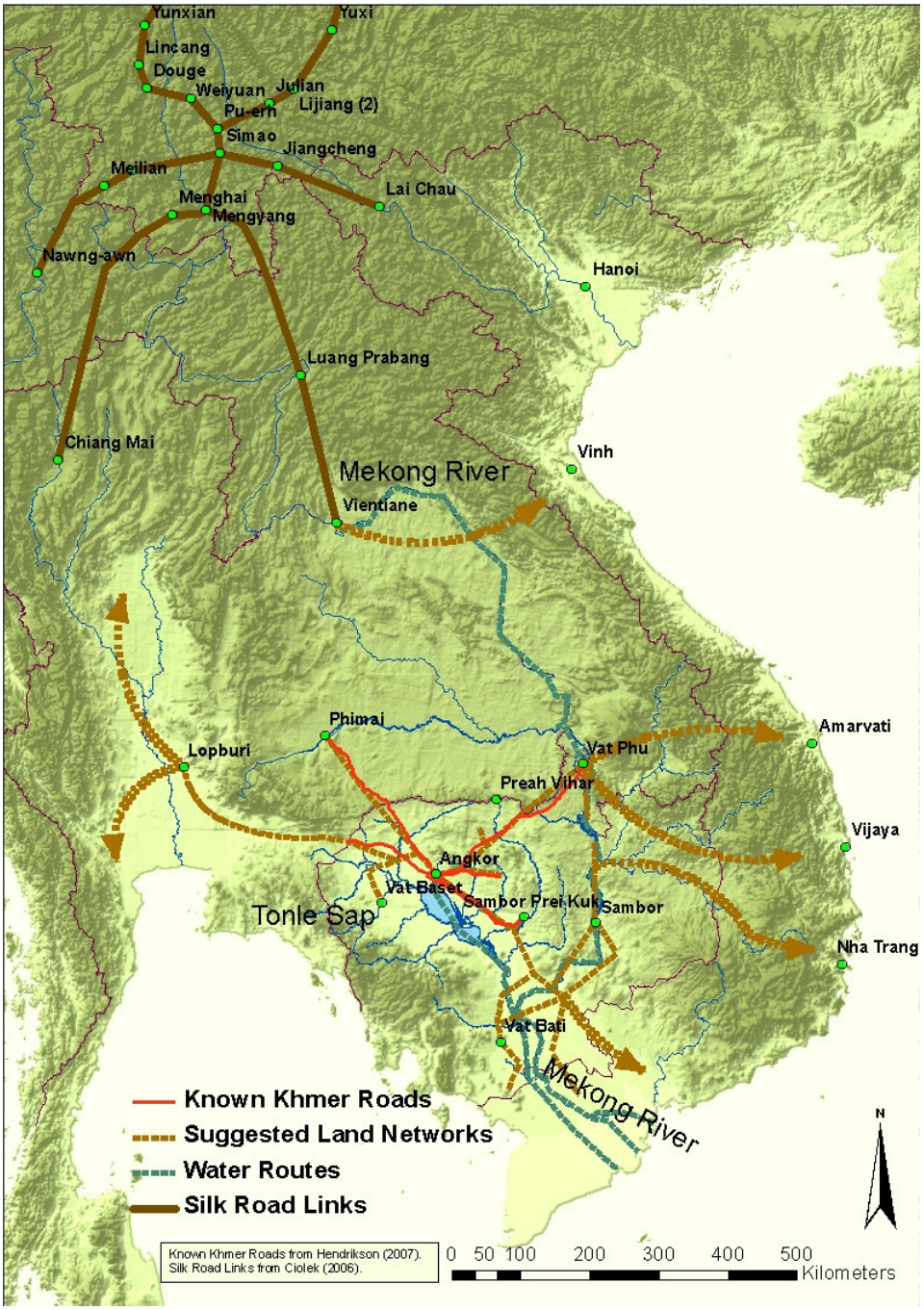


Figure 22 Proposed communication routes in use by the 11th century CE

According to the explorers de Malglaive and Rivière (2000[1879-1895]: 306-307) and Maspero (1918: 31) the Ha-Trai pass was the main access from the Vietnamese coast near Vinh to the Mekong River. Goods could be999 transported down the Mekong to Vat Phu and then overland to Angkor. From the 7th century CE, one branch of the Southern Silk Road network passed through Luzhenla (modern Vientiane) on the Mekong River and carried on to

Huanzhou (approximately Vinh) on the coast; another branch reached Dayinkong (modern Chiang Mai) on the Mennam River (Yang 2004: Map 2). Other possible routes, now modern roads and trails but perhaps long in use, for example, leading from Vat Phu and from south of the Khone Falls, extend towards the coast of Vietnam, but are not documented.

There is a considerable body of research on the routes of the Silk Road, dealing with aspects of trade and the transfer of ideas between China and the Indian subcontinent, Central Asia and Europe. Southeast Asia and India could be reached via Yunnan. However, no maps have been found which show communication links between the Silk Road network — seeming to terminate at Vientiane and Chiang Mai — and the Khmer heartland (Section 4.6.3). Nevertheless, the Sai Fong hospital inscription K. 368, dated 1186, attests to communication between Angkor and Vientiane at the time of Jayavarman VII. Pre-Angkorian and other Angkorian period inscriptions at sites in north east Thailand indicate Khmer influence, though this was not continuous. The links between Angkor and Chiang Mai via Lopburi and the Chao Praya River system led to routes further to the north, thereby connecting Angkor and China.

Evidence of Angkor's overland expansion into central Thailand and the Isthmus of Kra from the 10th century has been linked to its accessing Indian trade (Section 4.6.3). Although we cannot be certain of the motives for this expansion, the presence of Khmer speakers in these regions capable of facilitating trade, as well as the evidence of trade between Southeast Asia and India from before the 1st millennium CE, suggest that the Lopburi region served as a node for the trade network to the west.

## 6.8 Spatial distribution of indicators of central influence

For a better appreciation of the role of the temple clusters as centres of Khmer administration, the distributions of specific 'markers' of central influence will be analysed. The issue to be investigated is whether these markers were concentrated in the clusters or distributed more evenly over the landscape. It might be expected that a high proportion of royal inscriptions would tend to be concentrated in important, accessible areas, i.e. the clusters, since royal concerns are generally strategic (defence, trade and resource extraction), while essential administrative functions (here indicated by references to *rājakāryya* and *sabha*) might have roughly the same distribution as the royal inscriptions. Land transactions, which are not necessarily indicators of central or local administration, might have a similar distribution to that of all the inscriptions, since land was originally allocated in many places where inscriptions were placed in the religious foundations. Table 4 below and Figures A 14.1 to A 14.4 show the distributions of these markers in relation to the Angkor cluster and the 32 other identified clusters or groups. These results are discussed below.

| Angkorian period inscription sites | Total | No. of sites not in clusters | No.of sites in a cluster | No. of sites in Angkor cluster | No. of sites outside Angkor | No. sites outside Angkor in clusters |
|---|---|---|---|---|---|---|
| Inscription sites | 333 | 124 | 209 | 91 | 242 | 118 |
| | | 37% | 63% | 27% | 73% | 49% |
| Non-royal inscriptions | 253 | 108 | 145 | 50 | 203 | 95 |
| | | 43% | 57% | 20% | 80% | 47% |
| Sites of royal inscription or founder/ donor | 80 | 16 | 64 | 41 | 39 | 23 |
| | | 20% | 80% | 51% | 49% | 59% |
| Jayavarman VII hospitals | 19 | 9 | 10 | 5 | 14 | 5 |
| | | 47% | 53% | 26% | 74% | 36% |
| Yaśovarman digraphic *stelæ* | 12 | 5 | 7 | 1 | 11 | 6 |
| | | 42% | 58% | 8% | 92% | 55% |
| Royal founders or donors, not hospital | 61 | 7 | 54 | 36 | 25 | 18 |
| | | 11% | 89% | 59% | 41% | 72% |
| Inscription sites with *rājakāryya* | 35 | 11 | 24 | 10 | 25 | 14 |
| | | 31% | 69% | 29% | 71% | 56% |
| Inscription sites with *khloñ viṣaya* | 21 | 9 | 12 | 3 | 18 | 9 |
| | | 43% | 57% | 14% | 86% | 50% |
| Inscription sites with *khloñ vala* | 55 | 21 | 34 | 14 | 41 | 20 |
| | | 38% | 62% | 25% | 75% | 49% |
| Inscription sites with *sabha* | 45 | 18 | 27 | 13 | 32 | 14 |
| | | 40% | 60% | 29% | 71% | 44% |
| Inscription sites with land exchanges | 51 | 15 | 36 | 13 | 38 | 23 |
| | | 29% | 71% | 25% | 75% | 61% |
| Inscription sites with exchanges | 57 | 16 | 41 | 13 | 44 | 28 |
| | | 28% | 72% | 23% | 77% | 64% |

Table 4 Indicators of central influence in Angkorian period inscriptions (804-1349)

### 6.8.1 Royal inscriptions or royal founder or donor

'Royal' inscriptions are those where the author or principal donor is a king. These include royal edicts concerning administrative matters such as the foundation of temples and privileges granted. They are found at royal or non-royal temples, monasteries or other establishments, such as hospitals and on donated objects or statues. It might be expected that the royal footprint would be seen largely in the core capital area and in important regional centres appearing as nodes in a communication network linked to the capital. Beyond these, it would be more difficult to supervise local affairs and impose central rule or ideologies. Figure A 14.1

shows the location of all royal inscriptions plotted over the Kernel density distributions of Figure 15.

There are 80 Angkorian period sites having royal inscriptions, 80 percent of which occur in one of the designated groups or clusters (Table 4). This contrasts with 63 percent for all inscriptions. Of those in the clusters/ groups, 51 percent are in the Angkor cluster area and 49 percent are outside Angkor. This compares with 27 percent and 73 percent respectively for all the inscriptions. Away from the Angkor area, the proportion of royal inscriptions in clusters is higher than that for all inscriptions, but the difference is not so marked (59 percent compared with 49 percent).

The locations of two specific types of royal inscription were also examined. These were Yaśovarman I's digraphic *stelæ* (Figure A 14.6), predominantly statements about his royal power, and Jayavarman VII's hospital foundation *stelæ* (Figure A 14.5), which were widely distributed. Yaśovarman's *stelæ* were almost all in the provinces (92 percent), compared with only 49 percent of all royal inscriptions outside Angkor. Nevertheless, of the inscriptions outside Angkor, a similar proportion was located in the clusters (55 percent compared with 59 percent for royal inscriptions). However, only 36 percent of the hospital sites were in the clusters, indicating that hospital sites were chosen for different reasons, that were perhaps more benevolent than strategic or economic. A chi-squared test (A16.8) showed that the difference in distribution of the hospitals from the rest of the royal inscriptions was highly significant ($p<1\%$). If the hospital inscriptions are excluded, a significantly larger proportion (72 percent) of royal inscriptions away from Angkor is in the clusters. A chi-squared test (A16.7) showed that the concentration of non-hospital royal inscriptions in the clusters was significantly different from the concentration of the non-royal inscriptions ($p<5\%$).

These results illustrate the concentration of royal interest in the core area of the city of Angkor (also illustrated by Figures 9 and 10 above), and suggest that in the provinces it was focused more on the areas designated in this study as clusters, and which logically functioned as regional centres because of their strategic or economic importance.

### 6.8.2 Officials

In a centralised economy, one might expect representatives of the *rājakāryya* (royal service), responsible for collection of state taxes and levies, to operate fairly evenly throughout the territories, i.e. in both the high density clusters and other areas, since taxes and levies need to be extracted from all parts of the empire.

As with the royal inscriptions, the sites of all Angkorian inscriptions with references to the *rājakāryya* were plotted over the Kernel density distributions of Figure 15 (Figure A 14.2). Sixty three percent of all sites occur in one of the designated clusters, as does a similar

proportion (69 percent) of sites with *rājakāryya* (Table 4). The proportions within the Angkor cluster and in the other clusters are also comparable, i.e. outside the core area about half of all inscriptions and half of the mentions of the royal service were not in clusters. Thus, the royal service was as likely to be active at a more isolated temple beyond major communication networks, as at an important centre (see also Figure 14).

Table 4 shows the spatial distribution of two other officials, the *khloñ viṣaya* and *khloñ vala.* Outside Angkor, the distributions are much the same as for the *rājakāryya*. However, as discussed above, the proportion of *khloñ viṣaya* in Angkor is small.

### 6.8.3 *Sabhā* (courts)

Inscriptions of the 10th and 11th centuries often discuss legal disputes over land, and there are references to courts, court officials, appeals to the king, royal intervention, justice to be administered, etc. From the texts, it could be interpreted that the king himself was personally involved, but given the location of many of these inscriptions, it seems more likely that the courts were delegated to act on behalf of the ruler, and some of the declarations were made in the name of the king. There was a court in the capital (*vraḥ sabhā nagara* mentioned in K. 342/ 1015) and territorial courts, perhaps functioning at different levels: *vraḥ sabhā viṣaya* (district – K. 247/ 1060) and *vraḥ sabhā sruk* (village – K. 208/ 11th c.). There may have been separate courts based at temples, as mentioned in K. 374/ 1042, to deal with religious matters (Sahai 1976: 90).

Figure A 14.3 shows all 45 sites at which a court or court official, regardless of context, is mentioned. Although it cannot be taken that these sites are where the courts were located, they most probably were within a reasonable distance, given the number of recorded instances in which the court is seeking evidence from local village elders. As with the *rājakāryya* above, the distribution is similar to that of all Angkorian period inscriptions: 60 percent in a cluster, compared with 63 percent for all Angkorian period inscriptions (Table 4). For the elite at least, the courts seem to have been accessible.

### 6.8.4 Land exchanges

The reporting of land transactions occurs only in non-royal inscriptions. The locations of inscription sites where these are recorded should therefore inform about where land issues were important. For example, if they relate to land allocated for cultivation in new territories during Angkor's expansion, such as to the south-west of Angkor and in the Phimai area from the 10th century, it might be expected that they would not occur frequently in the regional centres. In fact, 71 percent of all sites with reported land transactions were in one of the designated clusters (Figure A 14.4), which is higher than the percentage for all inscriptions (63

percent). Outside Angkor the differences were also marked (61 percent for land exchanges compared with 49 percent for all inscriptions),[122] contrary to what was expected (Table 4).

It is likely that many inscriptions were written with the purpose of registering the legal ownership of land and property, and a number of the texts written by officials during the 10th and 11th centuries were doing this retrospectively (Section 5.2.3). The distribution of these registrations seems to indicate a focus of land concerns in the clusters. Perhaps land close to the regional centres, within important communication corridors, was more in demand than in outlying areas.

## 6.9 Conclusion

The cycles of royal and non-royal dominance of inscription production are a marked feature of the Angkorian period — that is, when the number of royal inscriptions is high, that of non-royal inscriptions is low, and vice versa. This suggests that the relationships between the two groups altered with time. How the patterns of royal and non-royal inscription production were affected by Angkor's changing political economy is examined in Section 9.3.

The nature of state control of Khmer territories varied according to distance from the capital, and over the Angkorian period. There is a high concentration of royal inscriptions in the inner Angkor area. Elsewhere, central influence dropped off in two stages: fairly rapidly outside Angkor's core area of about 25 km radius, about a day's journey, remaining reasonably steady up to 150 km. These two distances appear to mark respectively the core area of Angkor the city and the strategic hinterland of the city, which contained much of the formalised roads. From 150 km, Angkor's influence again diminishes, and it is minimal beyond 350 km. The three zones are indicative of different modes of control across the territorial-hegemonic spectrum, where states control regions of economic importance close to the capital more directly (territorial), while areas further away and of less importance are given greater autonomy (hegemonic).

The study has identified three different classes of sites which may have served as regional centres:

- Clusters of enduring sites (tending to span Pre-Angkor to Angkor)
- Non-clustered enduring sites
- Non-clustered Angkorian period prominent sites

The clusters, mostly of long duration, can be reasonably posited as containing centres of administration which were the focus of religious, economic and political activity, requiring

[122] A chi-squared test (Appendix A16.9) showed that that the concentration of land exchanges was appreciably different when compared with non-royal inscriptions as a whole ($\rho$=<10%)

central support and communication links. Temples having the longest duration within their cluster were arguably the centre of activity of the group and constituted some of the central or senior temples in Sedov's hierarchy. Despite the Pre-Angkorian shift of power to the north and Angkorian development to the east and west of the capital, the links between proximate clusters of long duration and other important sites constituted long-standing communication corridors during both Pre-Angkorian and Angkorian periods. A dominant corridor ran from Angkor to the south of Cambodia. Another corridor may have also run along the Mekong River from Vat Phu to the south. Other corridors led along and beyond the known roads and waterways, generally in the direction of centres of trade. The concentrations of sites and their links suggest that the empire can be usefully viewed in terms of nodes and communication links, rather than as held territory.

Distributions of key indicators of central influence suggest a decentralised administration. The relatively high percentage of royal inscriptions in the clusters outside Angkor points to regional centres for overseeing the state's administration. Based on a travel time of 20-25 km per day on land, distances were probably too great for most decisions to have been made in the capital. However, despite a degree of regional autonomy, the relatively uniform distribution of references to *rājakāryya* (royal service) and to *sabha* (courts and their officials) outside Angkor suggest that tax collection and the law were applied in most areas where there were temples.

The distribution of official titles had been interpreted as a bureaucracy increasing in complexity over at least the period 944-1000 CE during the consolidation and territorial integration carried out from early in the Angkorian period (Rājendravarman to Sūryavarman I). However, the close correlation between distributions of non-royal inscriptions and officials implies that the official titles were already largely in existence in the Rājendravarman period, which is earlier than suggested by researchers who regard the 10$^{th}$ to the mid 11$^{th}$ century as the period in which the administration grew. Thus there is little evidence for a substantial increase in complexity of the bureaucracy in this period.

Three issues of strategic concern arise from the analyses of central influence in this chapter.

- The long-standing communication corridors shaped the cultural links between those living along them, and must have contributed to the progressive formation of the Khmer state. Thereafter, enhancing this network, particularly in the hinterland area, contributed towards maintaining the integrity of the empire.
- The Khmer must have had a decentralised administration to oversee their large territories. This is in agreement with the 3$^{rd}$ stage of Kulke's *Processual model*, a feature of which is the decentralised collection of levies. Decentralisation has implications for other aspects of the political economy, in that it appears to run counter to the view of Angkor having strong central control. Evidence of an overall increase in central authority starting in the Pre-

Angkorian period and continuing into the Angkorian period has been observed by others — in the increasing central controls over land and communities, and in the greater ability of rulers to restructure sections of society (Sections 3.4.1; 3.4.3). The apparent inconsistency, that there was increased central authority in the face of a decentralised economy, might be seen as authority operating at two levels: allowing the exercise of regional authority for local issues, but ensuring central authority for matters of state significance, such as taxation.

- The cycles of royal and non-royal inscription production indicate shifts in relative influence of the rulers and the officials. This has implications for the distribution of wealth within the Khmer state and, given the reliance of the ruler on the regional elite for the decentralised administration, this may have consequences for the stability of the state. Moreover, these cycles indicate that the increase in central authority was not uniform.

The management of an empire such as Angkor's entailed developing strategies for the centre to exercise authority over its extensive territories in a cost-effective manner, that is, without employing excessively large numbers of people in its administration. From the above discussion, three interrelated processes are seen to contribute to the integrity of the state: enhancing the communications network; maintaining an effective decentralised administration appropriate to the locality; and maintaining a system of mutual support between the ruler and the regional elite.

# 7 Economic processes: money, markets and trade

> In 908 śaka, on the 14th day of the crescent moon of Bhādrapada, a Sunday, there was an order from His Majesty to Vāp Hṛdayaśiva, *paṃcāṃ pratyaya* ot the fourth category, stipulating that he go and give a rice field, because he had borrowed with interest a pair of buffaloes, in order to buy the laterite, in view of building a holy pyramid.
>
> K. 105 (987 CE)

> For long years this country has enjoyed commercial relations with us.
>
> (Zhou 1993[1297]: xviii)

## 7.1 Introduction

The geographic analysis of the inscription locations has helped to provide an outline of the Angkorian Empire's communication and administration network. This in turn has brought to the fore political processes which were arguably important for ensuring Angkor's security and prosperity. Economic processes were also important, and these will now be assessed in some detail.

A degree of sophistication in management, including accounting, would be expected of an empire that extended across seven centuries. Yet, as outlined in Chapter 4, researchers have suggested that markets and trade were not important for its economy, a few even that the Angkorian period Khmer may have abandoned a practical, universally accepted basis of accounting used by other organisationally complex societies, that is, a unit of account. Society in the Angkorian period appears to have been more integrated and hierarchical than in the Pre-Angkorian period, with more comprehensive communication networks across a larger area. Yet, the Angkorian period inscriptions appear to be little concerned with monetary values and depict a relatively unwieldy transaction system. The inscriptions may record details of the exchange prices for land, servants or services, but never payments for goods and services outside the elite world of the rulers, religious foundations and titled officials. Indeed, the Khmer epigraphy is never explicit about issues of money and markets.

A number of explanations for Angkor's seemingly low degree of commercialisation are explored. Explanations for Angkor's lack of money, and how goods and services were valued, are considered together with evidence for a unit of account. In order to cast some light on the complex barter exchanges, the expressions used to describe different kinds of transactions and the transactions themselves are assessed. These suggest that Angkor had a unit of account and that the complex barter exchanges were unlikely to represent the broader Angkorian economy. The inscriptions are examined for evidence of Angkor's external trade and contact with other polities and, together with the historical and archaeological record,

indicate that trade was continual over a long period. The epigraphic records of the goods used either for barter or as gifts to the foundations are compared, to demonstrate an increase in wealth in the Angkorian period relative to the Pre-Angkorian period. The increase in wealth in the hands of elite individuals and temples implies Angkor had effective economic strategies for its empire and thus was able to secure a strong flow of taxation revenue. An explanation will be proposed for the apparent lack of interest in commerce.

## 7.2 Monetisation

### 7.2.1 Monetary systems

The evidence for Angkor's non-monetisation is examined below. It is first established that in complex societies a unit of account is essential for barter transactions and that transactions are facilitated by the introduction of money. Pryor (1977: 182) observes a direct relationship between the use of money and the level of economic development of a society. However, the Khmer, notably from the 9th century, appear to some to have been almost consciously prohibiting a monetary system (Wicks 1992: 313), and in fact not to have made use of a common unit of account. Some explanations for the low degree of monetisation have already been discussed in Section 4.6 above and found to be improbable.

A complex economy could not function effectively without a unit of account, being restricted if goods and services could not consistently and regularly be exchanged for one another (Melitz 1970: 1028). The role of a unit of account in dealing with the so-called 'non-coincidence of wants' in bartering has long been cited by economists as a principal reason for its existence (Mill 1868: 293; Jevons 1883: 5). Mill illustrates the difficulty of not having such a common measure with the example of a tailor making only coats and wanting to barter these for bread or a horse. It would require a new calculation based on different data each time he bartered a coat for a different item. A further problem would be that the tailor would need many loaves of bread in exchange for one indivisible coat. Yet most of the loaves would spoil before he could eat them. An alternative is to use either an intermediate item to facilitate indirect trade (Melitz 1974: 53), or a unit of account. Many societies have settled on metals such as gold, silver or copper (Mill: 295-296; Jevons: 30-52). Others have used non-metal objects, such as cowrie shells, rice or lengths of cloth (Wicks 1992). Provided there are fixed exchange equivalences between objects bartered there may be no real need for a common unit of account. However, with the diversification of products, services and requirements in a complex society, this becomes essential (e.g. Einzig 1966: 257).

Further, in a situation where the mode of transaction is most commonly barter, one is faced with the question of how it would be possible to maintain a consistent ratio between prices of different classes of exchange goods. Melitz (1970: 1028) argues that in a complex society with

many goods, there would inevitably be instances where, 'if prices are given in terms of different units of account, the exchange ratio between two goods in terms of one accounting unit may differ from the ratio between the same two goods in terms of another unit'. In a complex society with many objects bought and sold, relative prices would inevitably differ, allowing traders to profit by transforming a certain product into more of the same product 'through an appropriate series of trades'. This would be unsustainable and it is difficult to see why people would not adopt a common unit of account.

It is not uncommon in history to find societies, even amongst those using coinage, in which the medium of exchange and the unit of account are not the same thing, typically when the value of a currency becomes unstable. In parts of post World War II Germany, for example, cigarettes became a form of commodity money. When the ratios between the goods become fixed, the 'money substitutes' are considered equivalent to money (Grierson 1977: 17).

The acceptance of a coinage will be based on a comparison of its perceived costs with its perceived benefits. The benefits are most obvious where there is a large range of goods in circulation. For money to be beneficial there must be significant trade and a need for comparing prices across a large range of goods. Money can reduce the cost of this comparison more economically than other methods (Melitz, 1974: 57-67). It tends to be portable, to economise on transfer costs, and is a good store of value. Among the costs of coinage are metal production or import; minting and standardisation; upkeep and replacement; and augmentation if the economy expands. If the perceived costs of coinage are too great, barter transactions in a central marketplace may be the most acceptable means of exchanging wares.

Smith (2004: 91) has noted the dearth of research concerning units of account and archaeological data on early money.[123] This study aims to remedy this situation for Angkor, in examining some aspects of its domestic and foreign commerce and addressing the question of why Angkor, in an age of at least a moderate level of monetisation, did not use money and has been assessed as lacking a unit of account.

### 7.2.2 Monetisation in other Southeast Asian states

In the period covered by this study (6th-14th century), no Southeast Asian economies were fully monetised (Wicks 1992). Some early Indianised states (Funan, Dvāravatī, northern Arakan, the Mon of Pegu, the Pyu of Burma, etc.) seem to have adopted coinages to various degrees, but after their demise, coins were replaced by barter, cowrie shells, metal bars or lumps

[123] For example, in Mesoamerica, where money including cacao beans and cotton textiles was used, archaeological evidence for the origin of money is very limited (Smith 2004: 91).

(Gutman 1978: 9; Wicks 1992: 3). Subsequent monetisation in pre-modern Southeast Asia was neither uniform nor continuous, and early coinages were mostly localised.

## 7.3 The exchanges

The evidence for Khmer transactions being conducted without money from the Pre-Angkorian period to the 14th century is outlined below. The inscriptions describe some quite complex payments, and refer to practices which are not always understood. A single donation may entail multiple transactions. The examples below, from the 7th and 11th centuries respectively, illustrate this complexity and obscurity.

> And Poñ Chāñ delivered the rice field of the Poñ which Poñ Matiśakti, former servant of laṅas (?) to Kaṅirap Amac (at) Purandarapura, delivered in reimbursement to the people of the Young God (Vraḥ Kanmeṅ), who asked in addition for 4 yau of double garments, as payment of the tax (of these people).
>
> (K. 493/ 657 CE; Cœdès 1951: 151)

> Land of the establishment of Vrai – which Kaṃsteṅ Vnur Khªval gave in compensation for the rice which he owed to the royal service, and for the 6 vaudi and spittoons together weighing 7 jyaṅ, borrowed with interest from V.K.A. of Vrac to pay the fees (to the Brahmins) at the inauguration of the holy basin. Servants: 1 supervisor, 3 men, 6 women, 1 gvāl.
>
> (K. 420/ 11th c; Cœdès 1952: 164)

An analysis of the inscriptions shows that in the Pre-Angkorian period, the 7th century has the largest number of inscriptions referring to exchanges. The greatest number of Angkorian period inscriptions with transactions is between the mid 10th and mid 11th centuries (Figure 23), a period in which many officials were producing texts containing what appear to be embellished details of genealogies, land histories and legal disputes, aiming to establish the rights to land (Vickery 1985).

Twenty four percent of the 376 transactions recorded are Pre-Angkorian and 76 percent Angkorian. Overall, 75 percent are for land (27 percent of these are Pre-Angkorian and 73 percent Angkorian) and 18 percent for servants (9 percent of these are Pre-Angkorian and 91 percent Angkorian). Many of the remaining 7 percent are Angkorian period payments for boundary marking and witnessing. One late Pre-Angkorian text, K. 124/ 803, refers to purchases of temple supplies (Cœdès 1951: 173). Some exchanges are not obviously associated with foundations, but given that the inscriptions were found mainly in temple precincts and that much of the land in question was given to foundations, they are likely to have been foundation-related.

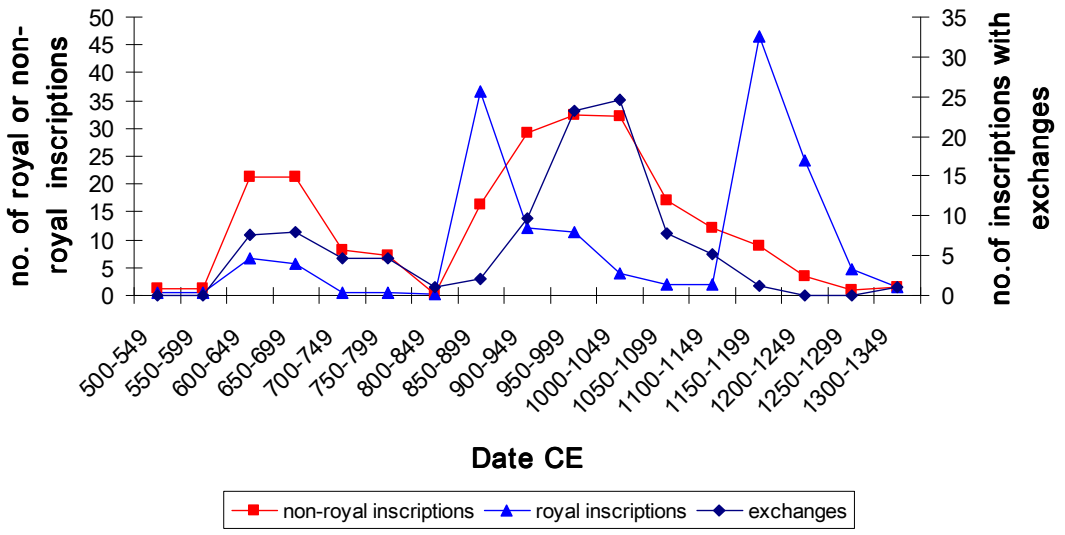


Figure 23 Distribution of Pre-Angkorian and Angkorian inscriptions and exchanges over time

### 7.3.1 Pre-Angkorian exchanges

There is no evidence that the Pre-Angkor economy was 'monetised', nor do the recorded exchanges of goods refer to market transactions (Vickery 1998: 257; 314). Overall, there are few references to Khmer commerce and taxation, when compared with what was recorded in the 7th–9th century inscriptions in inland agrarian Java (e.g. Wisseman Christie 1993).

Pre-Angkor transactions were often complex, with some inscriptions, notably K. 726/ 8th c. and K. 493/ 657, containing several different kinds of transactions. These include donations of rice fields, sale of land to the foundation paid for with 'goods of the god', payment to one god for something which was given to another god; payment of indemnity and redemption of one item or commodity by another, pledging and redeeming of workers, and land given in partial payment of a debt. In K. 124/ 803, temple provisions were purchased in exchange for produce (honey to buy oil, cloth to buy syrup, etc.) (Vickery 1998: 281-292).

As may be seen in Table 5, the range of items used in Pre-Angkorian exchanges is not extensive. Most common are paddy, fabric and silver (for example, K. 493/ 657, Ka 13/ 8th c., K. 726/ 8th c. and K. 1214/ 726) — but there is an instance (K. 910/ 652) of a conch being given in exchange for rice fields and another (K. 493/ 657) of a rice field exchanged for two female *kñuṃ* (slaves; servants) and a quantity of *yugala*. Vickery (1998: 284) suggests that some of the goods produced and exchanged by the Pre-Angkorian foundations may have been so-called 'prestige goods'[124] because the totals of listed goods are sometimes not

[124] According to Leach (1965: 144-145), 'ritual wealth objects' vary greatly in value and utility, and may bear little relationship to their quality.

consistent or because the units of measurement of the textiles *aṃval* and *yugala* are Austronesian borrowings, suggesting these were imported, perhaps at an earlier stage (ibid., 292-293). Inconsistent accounting is, however, ubiquitous throughout the corpus, though textiles and other items would have probably been prized for their prestige value, as in more recent times (Chandler 1996[1970]: 21; 1996[1978]: 90).

| Inscription | Object | size | price *(jnhāv)* |
|---|---|---|---|
| K. 493 / 657 CE<br>Tuol Kok Prah | *sre*<br>(ricefield) | 0.5 *sare* | 2 *kñum kantai* (female servants), 1 *caṃdak* (?), 3 *yau canlek yugala* (double garments). |
| **Inscription** | **Object** | **Size** | **equivalent price (*niṣkraya*)** |
| Ka13 / 8th century CE<br>Kong Pisei | *sre*<br>(ricefield) | 3 *māṣ* | 1 *liṅ* white silver, 6 *canlek yugala* (double garments), 63 *kaṃvala* (covers) |
| **Inscription** | **Object** | **Size** | **price (*jnāhv*); value (*mūlya*)** |
| K. 726 / 8th century CE<br>Tan Kran | *sre*<br>(ricefield) | | Acquired for **price** of a quantity of paddy having a **value** of 4 *tamliṅ* of silver, and 1 *yau* of *yugala* (double garments) |
| **Inscription** | **Object** | | **price (*tlai*); value ? (*argha*)** |
| K. 1214 / 726 CE<br>Duol Trabamn Samron | *ku*<br>(servant) | | **Price** of the *ku* a **value** (?) of 15 *liṅ* of silver |

Table 5 Four Pre-Angkorian exchanges showing equivalent values

Some inscriptions provide details on the size of the land exchanged. The boundaries were delimited according to landmarks such as *travan* (ponds; reservoirs). The size may be indicated in units of fields (*sare/ sanre*) or by the amount of seed required to sow the field, *je* and *ma*, or *pāda* (possibly a piece of indefinite size). It is difficult to compare relative values. In one inscription, K. 79/ 643, two plots of the same size are valued at different amounts, suggesting that the quality of the lands may have been taken into account.

Interestingly, the Pre-Angkorian texts contain two terms, *argha* and *mūlya*, which are thought to denote 'value', while none are discerned in the later Angkorian corpus. In K. 493/ 657 *sre ktiṅṅ argha kñuṃ* is glossed as 'the rice field…surrendered in payment (of a debt [*ktiṅṅ*]) for a slave' (Cœdès 1942: 150). Here, the slave was the value of the debt. K. 1214/ 726 contains the expression *tlai ku argha prak liṅ 10 IIIII* (price of the *ku*: a value of 15 *liṅ* of silver) and the translator comments on the use of the two different words, one Khmer (*tlai*), the other Sanskrit (*argha*), each denoting 'price' (Griffiths 2005: 27). A possible explanation is that *argha* again has the connotation of 'value' and that goods other than silver were used for the payment, i.e.

the price of the *ku* was goods which were worth 15 *liṅ* of silver. In the 8th century K. 726,[125] both rice fields and labour were valued (*mūlya*) using the extrinsic standard of *tamliṅ*, a weight, of silver and possibly[126] also *yau*, a length, of *yugala* (double cloth), although payment (the medium of exchange) was in weight of paddy (Table 5). These items may have had relative values which were commonly understood and were used as valuational standards in other sectors of the economy (Jacob 1979: 415; Wicks 1992: 191). There is no other evidence of a common unit of account until the late 13th century and the reports of the Chinese envoy Zhou Daguan (1993[1297]).

### 7.3.2 Angkorian exchanges

In the Angkorian records, there are no references to a common currency or valuational system. The lists of exchange items, often much longer than in the Pre-Angkorian period, contain a variety of barter items, most commonly cloth, *vaudi* (pitchers), livestock, silver, paddy and spittoons. However, trays and other utensils, elephants, *khñuṃ*, copper and spices were also exchanged.

As with the Pre-Angkorian texts, prices of land are not readily comparable (Table 6). This is either because the relative sizes of the plots and their productivities are not stated or because the aggregated value of the often numerous exchange items is difficult to assess. Table 7, listing transactions for purchases of servants, illustrates why it is said there is little evidence of price equivalence. The servants, with or without children, would have been of different ages and abilities, and there is no way of knowing how the different exchange items were valued against each other. Yet, as shown in both tables, the records often indicate the precise weights of the metal objects given in exchange.

---

[125] Michael Vickery points out that K. 726 is unusual. It is the only inscription with *mūlya*. The inscription is thought to be late Pre-Angkor (8th century), a time when other texts were showing changes from the 7th century. Thus it 'may not be representative of economic institutions throughout' and it may not be justified to use this inscription to establish a standard of valuation for the whole Pre-Angkorian period (Michael Vickery 2006, pers. comm.). Nevertheless, the concepts were expressed at this time.

[126] In Cœdès' (1953: 79) translation of K. 726B, the comma between silver and *yugala* suggests the rice was worth 4 *tamliṅ* of silver, while Wicks' (1992: 191) interpretation is that the payment was valued at 4 *tamliṅ* of silver plus one *yau* of *yugala*.

| Capacity of land | Land price: *duñ* (bought for) |
|---|---|
| 100 *vroḥ* | 2 gold rings (1 *pāda*), 4 *padigaḥ* [spittoons] (1 *tula* 2 *jyaṅ*), 4 *dlaḥ* [metal cooking pots] (1 *tula*), 4 *kuntika* [pitchers] (2 *tula* 12 *jyaṅ*), 3 *go* [oxen], 5 *yau ca thmi* [new fabric] of *tap hat* (10 cubits), 1 *thlvaṅ* paddy |
| 40 *vroḥ* | 2 bronze *tanlāp* [boxes], 4 *liṅ* silver, 4 *dlah* (19 *jyaṅ*), 2 *kuntika* (10 *jyaṅ*), 2 oxen, 2 *yau* new fabric (10 cubits) |
| 10 *thlvaṅ* | 2 gold *aṅguliyaka* [rings] (1 *pāda*), 1 silver *khāl* [bowl] (3 *liṅ*), *prak* [silver]…(6 *liṅ*), silver *gum* [?] (1 *jyaṅ* 1 *liṅ*), 1 *dlaḥ* (7 *jyaṅ*), 5 *kuntikā* (1 *tula*, 1 *jyaṅ* 10 *liṅ*), 1 *vardhanī* [vessel], 2 water vases, 5 *śarāva* [plates] (total of last 3, 1 *jyaṅ*), 3 tin *bhājana* [utensils] (10 *jyaṅ* 8 *liṅ*), 1 *valvyal* [candle holder ?] (5 *jyaṅ*), 1… (3 *jyaṅ*), 1 fine fabric *amśuka* (20 cubits long), 1….(10 cubits long), 2 fast oxen, 2 *yau* new fabric (10 cubits), 3 goats. |
| 100 *vroḥ* | 3 gold rings (1 *pāda*, 2 *sliṅ*), 5 silver bowls (1 *jyaṅ*) 10 *dlaḥ* (2 *tula* 15 *jyaṅ*), 10 *kunti* (2 *tula,* 2 *jyaṅ*, 10 *liṅ*) 3 tin utensils (10 *jyaṅ* 10 *liṅ*), 2 *go parat* [fast oxen], 15 *yo* new fabric (10 cubits), 2 *vave* [goats]. |
| 10 *thlvaṅ* | 2 silver bowls (5 *liṅ*), 4 *chnaṅ* [cooking pots] (10 *jyaṅ* 10 *liṅ*), 4 *yo* new fabric (10 cubits), 2 *ªvar marica* [pepper]. |

Table 6 Angkorian period prices of land of varying capacity: K. 258/ (?) early 12th c. CE. Measures are given in brackets

| *khñuṃ* | bought (*duñ*) for |
|---|---|
| 1 *teṅ* + 4 children | 60 garments |
| 1 *teṅ* + 3 children | 1 buffalo, 1 *vaudi* (6 *jyaṅ*), 1 ring (2 *pāda*) [or 2 foot rings ?] |
| 1 *tai* | 1 buffalo. |
| 2 *tai* +1 child | 50 (measures) paddy, 1 silver bowl (5 *liṅ*), ? pairs *thnap*,..garments, 2 *vaudi* (10 *jyaṅ*). |
| 1 *tai* | 20 (measures) paddy. |
| 1 *tai* | 1 buffalo, 1 *vaudi* (6 *jyaṅ*), ... 5 garments. |
| 1 *tai* | 1 *kadāha* (6 *jyaṅ*). |
| 1 *tai* | ….1 *vaudi* (x *jyaṅ*). |
| 1 *si* | 1 pair *dop*, 2 pairs *thap* (sic). |
| 1 ? | 10 *yo* garments, 20 (measures) paddy. |

Table 7 Angkorian period price of personnel (*khñuṃ*): K. 933/ 1014 CE

With exchanges comprising such a variety of goods, a question arises whether this negates the need for a unit of account, in that the range of items could overcome the issue of the non-coincidence of wants. Indeed, the elite of Angkor could conceivably have afforded to provide the variety of goods we see in the epigraphic exchanges, to meet a vendor's wants. On the

other hand, Wicks (1992: 195) questions if 'at least some of the items, such as *vaudi* (pitchers) and spittoons, commonly seen in temple inventories as well, were dictated by custom or ceremonial requirements', rather than the 'mere piling up of goods in order to equal the purchase price' as in Pharaohic Egypt, because the goods appear to him to occur in the same proportions in land and 'slave' purchases. While this seems to be the case at certain sites, overall there is considerable diversity and it may be that the availability of goods was also important.

The examples above highlight the difficulty in understanding the relative values of purchased goods, when the prices are made up of a variety of different items. In all but two exchanges of the 8th century, there is no indication of an accounting unit. Such an impractical system raises the question of its utility and this will be addressed later in this chapter.

### 7.3.3 Late twelfth-thirteenth century markets

Markets (*āpaṇa*) are first mentioned at the end of the 12th century in the Ta Prohm inscription of Jayavarman VII, where clothing and produce were to be taken 'from the weaver's shop, from the villages, from the market, etc.' (Cœdès 1992[1906]; 43). The Chinese envoy Zhou Daguan, living at Angkor in 1296-8 CE, refers to local markets, and his description closely resembles markets seen today in Southeast Asia.

By the late 12th century, large quantities of Chinese coins were in circulation in different parts of Southeast Asia. However, there is no indication that the Khmer imported Chinese cash (Wicks: 206). The only evidence for use of metal as a medium of exchange before Zhou Daguan is the 1225 CE mention by Chau Ju-Kua (1966[ca. 15th c.]: 53) that rice in *Kamboja* could be purchased with lead. Zhou Daguan (1993[1297]: 43) recorded that rice, grain and Chinese coins were used for small transactions, then fabrics, and for the largest transactions, gold and silver. Apparently, strong 'slaves' could be worth up to 100 pieces of cloth (ibid., 21). Gold and silver, which he said were not found locally, were brought to Cambodia by Chinese merchants to trade for 'agricultural products' and were much in demand (ibid., 45).

Given that regional centres had been in existence for a long time, it seems unlikely that Angkor did not have markets in some form much earlier than the 12th century. While the inscriptions may not represent the whole economy, the variability of prices shown in Tables 5 to 7 do not indicate any price setting, as would be required for a monopolistic market in a 'dendritic central-place' system (Section 4.4.2).

## 7.4 Suggested explanations for non-monetisation

Some earlier explanations for the absence of money have already been discussed in Section 4.6. These are: lack of precious metal reserves; Angkor's trading status as an inland agrarian state; and the desire on the part of rulers to maintain centralised control. On the

evidence, none appears plausible. Further evidence concerning the latter two explanations, Angkor's low trade and centralised control of the state's economy, are assessed below.

### 7.4.1 Primarily not a trading state: evaluation from the epigraphy

As pointed out in Section 4.6.3 above, the Khmer, after the 6th century, were not primarily traders, and Angkor was an inland agrarian state, concentrating on land and labour. From this it might follow that the costs of setting up and maintaining a monetary system may have outweighed the benefits.

However, the Khmer do appear to have maintained an interest in foreign trade, with China and arguably with India and there is evidence that the Khmer used the wider land and maritime trade network throughout Asia and further afield, from before the Angkorian period. Angkor's campaigns of expansion and its diplomatic initiatives were aimed at access to international trade and control of ports and overland routes. Imported prestige goods, including Chinese ceramics, have been excavated in Angkor, while China is known to have consumed various Khmer forest products. The epigraphy makes a few mentions of imported items from China, Javā (?) and perhaps India between the 9th and the 13th centuries (Table 8). In addition, some pharmaceuticals listed for the hospitals of Jayavarman VII,[127] for example long pepper (pippali), are indigenous to India and Sri Lanka and may have been imported.

The few mentions of merchants in the inscriptions listed in Table 9 might suggest that their status in society was not low. It is not clear whether these merchants operated locally or were itinerant. The 8th century inscription, K. 259, referring to a merchant chief, suggests profitable trading activity and high rank. In the Angkorian period, merchants are not seen carrying out their profession, but as participants in the endowment of foundations, and therefore of some wealth and status. If so, it may follow that trading was an economically important activity that had been pursued for some centuries and merchants would probably not have been precluded from acting independently, rather than on behalf of the rulers.

Consideration of all the evidence would suggest that Angkor participated in international trade, possibly continuously. In whatever way the exchanges were conducted, lack of trade cannot be cited as a reason for Angkor's apparent low level of monetisation.

[127] K. 386/ 1186

| CE Date | Source | Commodity | Material | Origin |
|---|---|---|---|---|
| 7th century | K. 407 Vat Maheyang[128] | *cīnadhv(aj) (banner of Chinese fabric)* | | China |
| 894 (?) | K. 947 Lolei | *1 dramvaṅ* (tree, object in form of flower ?) | hanira | China |
| | | *1 dramvaṅ* (tree, object in form of flower ?) | | China |
| | | *1 nū parivāra* (cover, accessory, container) | silver | China |
| | | *1 tanlap* (box, small box) | hanira | China |
| | | *1 tanlap dramvaṅ* (box with dramvaṅ) | hanira | China |
| | | *1 tanlap kralyak* (box for type of offering) | hanira | China |
| | | *1 tanlvat* (unknown ritual object) | silver | China |
| | | *1 vodi* (pitcher, jug, vase) | silver | Javā[129] |
| 972 | K. 669 (Prasat Komphus) | *1 ādarśaṇa cīna* (mirror) | | China |
| | | *1 tanlāp deśa* (box) | | India/ foreign[130] |
| | | *1 vān deśa* (cup with feet?) | | India/foreign |
| 984 | K. 662; K. 663 (Vat Prah Einkosei) | *3 noṅ cīna* (gourd-shaped utensils?) | | China |
| | | *3 noṅ cīna* (gourd-shaped utensils?) | | China |
| 1026 | K. 618 (Sek Ta Tuy) | *canlyak deśa* (garments) | cotton | India/ foreign |
| | | *phnāṅ deśa* (hangings) | cotton | India/ foreign |
| 1186-91 | K. 208 (Prah Khan) | *520 cīna samudga* (boxes) | | China |
| | | *323 maśakārtha cīnamśuka* (mosquito nets) | silk | China |
| | | *paṭa cīnāmśuka* (superior silk) | silk | China |
| 1186 | K. 273 (Ta Prohm) | *20 cīnaśayyā* (beds, couches) | | China |
| | | *20 amśuka cīnapaṭa* (cloth) | | China |
| | | *500 cīna samudga* (boxes) | | China |
| 1200 | K. 485 (Phimanakas) | *100 dhvaj cīnapaṭṭa* (cloth for banner) | | China |
| | | *1 dhvaj cīnāṃśuka* (banner) | silk | China |

Table 8 Epigraphic references to imports

[128] Given its date and location on the Isthmus of Kra, this inscription is unlikely to be 'Pre-Angkorian' (Michael Vickery 2007, pers comm). Nevertheless, it indicates trade with China in the region.
[129] The location of Javā has not been determined (Dominique Soutif 2007, pers. comm.).
[130] *deśa*: the land of the Indians; Its products, especially textiles (Pou 1992); land, provinces, foreign country, especially India, countryside (Jenner 2009a)

| Inscription | Province | CE date | Merchant (?) | Comment |
|---|---|---|---|---|
| K. 259S (IV) (Sk text) | Siem Reap | 8th c. | *vaṇijām adhipaḥ* (merchant chief) | Individual given title by King Nṛpāditya |
| K. 263B | Siem Reap | 984 | *travaṅ vanik* (trapeang Vanik) | Location: refers to limits of land |
| K. 221N | Battambang | 1011 | *vanik* (merchant) | Gift of 1 *tai* |
| K. 221S | Battambang | 1011 | *khloñ jnvāl vanik* (merchant chief) | Participant in sale of rice field |
| K. 221S | Battambang | 1011 | *khloñ vanik* (merchant chief *jnvāl*) | Title of the *kaṃsteṅ*, principal donor |
| K. 220S | Battambang | 1012 | *khloñ jnvāl vanik* (merchant chief *jnvāl*) | Donor of 2 *tai* via *kaṃsteṅ* |
| K. 843B | Siem Reap | 1025 | *vanik* (merchant) | Legal: Objects claimed from a trader |
| K. 249 | Siem Reap | 1109 | *mūla tamrvac vyavahāri* (merchant inspector) | Amongst those who prepared list of property |

Table 9 Epigraphic mentions of merchants

### 7.4.2 Degree of centralised or elite control of wealth

It has been argued that money was not necessary in societies where a significant proportion of the wealth of the state was channelled through the temples rather than the royal courts. This is difficult to accept for Angkor on two grounds. Firstly, as evidenced by their endowment of temples and their lavish gift giving to supporters, the rulers and the elites must have participated to a large degree in the circulation of wealth in the general economy. Secondly, the storage of temple treasure must have created a need for more precious goods, which had to come from imports, or mining activity and local manufacture, in turn stimulating a market for these goods which was not restricted to the temples.

The disappearance of coinage in some other early Indianised Southeast Asian mainland states is attributed to the loss of their strategic importance and also to the desire for states to have tighter control over resources and populations (Sections 4.3; 4.6.2). According this view, a strategy to maintain central control in an administered economy is to not issue money, thereby reducing market trading to small-scale barter transactions. Hence the scale of interaction between people would also be reduced.

Command economies are generally imposed to achieve specific aims, such as resource mobilisation for expansion (as with the Inka), or in an ideology-based radical transformation of the socio-economic system (such as the Soviet system). The command mechanism (Ericson

2008: 1-9) requires a high degree of centralisation by the state with a generally vertical flow of information up and down the administrative hierarchy. Central planning is facilitated by abandoning market principles and restricting the movement of resources and labour mobility. This ultimately amounts to imposing restrictions on money, keeping prices as mere accounting and measuring units, with little impact on the allocation of goods and services. Prices and wages are generally set and controlled centrally, but such economies, e.g. Soviet Russia, need not be moneyless.

Full centralisation poses an insoluble logistical problem, since it restricts the local management of resources and labour, ultimately making it expedient to decentralise and allow an increased degree of local flexibility, such as the existence of markets. As these become more active, 'the market' ultimately takes on an essential role in the economy, with economically flexible market prices allowed to function. This enables the accumulation of power outside the control of the state, with the state having to compete with higher incomes from the 'second economy'. The existence of sectors outside the command economy, for which markets are allowed to function, poses a threat to control, since these provide an outlet for incentive earnings and diverting resources. Ultimately the controlled economy cannot last. Hence, Angkor, despite not having money, could not have lasted over six centuries as a command economy. Moreover, money and markets may be independent of each other (Section 4.3). The epigraphic evidence of the inexplicably varying prices for land purchases in many regions argues against Angkor administering its prices uniformly from the centre. If the barter seen in the inscriptions was employed for the whole of Angkor's economy, the economy could not have been administered centrally. Moreover, given the maximum extent of the Angkorian Empire, at over 350 km from the centre, a single communication may have taken one to two weeks to reach the recipient, rendering administered prices difficult to sustain for extended periods. A state's mode of control of its territories might encompass a range of different socio-political-economic strategies. The nature and strength of each mode could vary dynamically and with geographical location (Section 2.3). To associate the absence of money with a single political agenda, such as central control, would require substantially more justification.

Furthermore, removing money need not limit the scale of interaction between people and thus would not necessarily control populations more easily. Without money, transactions must be by barter, which need not be less effective than money, nor limit the scale of interaction. High value goods can be used as effectively as money for large purchases and over distances, as seen in the Angkorian period records of land transactions (see also Section 7.3.2). As it is, a limited scale of interaction was typical of many pre-modern societies, with or without money, especially in the low population density areas of Southeast Asia. Finally, although the earliest coinage in Cambodia was relatively late (in the 16$^{th}$ century), it must be borne in mind that

monetisation and coinages were introduced into different marketised societies at different times, in different ways and for different purposes (Section 4.4).

Although the Inka may be considered to have employed a command economy to help implement their expansionist strategy, Angkor probably differed in several ways: the span of the empire covered a longer period; it was not always in an expansionist mode; it traded with money-using societies; there is no known evidence for communal facilities for the redistribution of resources; and importantly, there is no discernible evidence that Angkor's rulers established production enclaves on a large scale to mobilise resources.

Sedov considered that the central temples 'developed specialised industries supplying the state' with resources (Section 4.6.2). Before the latter part of the 7th century, control over resources could only have been on a small scale, since authority over large areas was not yet established (Section 3.3.2). From the quantities of grain, honey and wax to be provided by certain lands in the late 8th century, it is unlikely that the resources were required for a single temple. The Angkorian period offers two further examples of what appear to be organised collection of resources. One, K. 71/ 10th c. (Vraḥ Pullin or Sacred Island) is cited by Sedov as a centre for producing *paryyaṅ* (clarified butter) for the state. The inscription is obscure, but there are references to *paryyaṅ* of the *bhūtaśa* (?), the *pratyaya* (trusted servant; minister), the *tamrvac* (inspectors) and *paryyaṅ* of the *rājadravya* (royal treasury) as well as mention of four collectors (*dmāṅ*) of *paryyaṅ* for each fortnight. In K. 913/ 1066, a royal ordinance from Udayādityavarman II to the chief of wax is concerned with the marking of boundaries and the collection of honey and wax from lands in the Plain of Joncs. These instances may be referring to state enterprises or, on the other hand, to levying of these important commodities. Even if they were examples of state-organised production, it does not follow that the whole economy was centrally administered.

In summary, while Angkor's recorded exchanges were not in money, this can not be linked to a command economy.

## 7.5 Valuation

Since there is no evidence of monetisation in the recorded transactions, there remains a question of how valuations were arrived at. This in turn raises the question of how representative of the secular economy the transactions set out in the temple inscriptions are. To assess this, Khmer monetary concepts, changes in wealth between the Pre-Angkorian and Angkorian periods and differences between the temple and secular economies are explored.

### 7.5.1 No Angkorian period expression for valuation?

Although precise meanings cannot always be known, it appears that several terms found in Angkorian exchanges deal with the same transaction concepts as those in Pre-Angkorian

exchanges. In some cases, only the spelling differs. In others, new terms have been introduced. There are terms for buying, bartering, trading, selling, price, debt, borrowing with interest, repayment, indemnity and redemption in both periods (Table 10).

| Concept | Pre-Angkorian | Angkorian |
|---|---|---|
| **value; equivalent price** | ***mūlya; argha*** | |
| buy | *duñ; daṃnuñ* | *duñ; daṃnuñ; dvañ* |
| pay; buy; barter; acquire by exchange; bartering price | *jaṃnau; johv; jāhv; jnahv; pañjāhv; pañjau; jauhv; jo; jau; jaṃnāhv; jaṃnohv* | *jo; jau; jauv; jov; jāv* |
| price; value | *tlai* | *thlay(y); thlai; thlaiy* |
| sell | *lak(k)* | *lak(k)* |
| trade; swap | *tnor; panlas(s)* | *tvar; thnvar; thnur* |
| debt | *ktiṅ* | |
| borrowed with interest | | *pul* |
| interest | | *guṇa* |
| repayment; redemption; compensation | *niṣkraya; soṅ* | *soṅ; snoṅ; lapp* |
| indemnity; compensation; payment | | *phlās; thlās* |
| claim; receive | *dār* | *dār* |
| offer in payment (to god?) | | *thvāy* |

Table 10 Transaction concepts expressed in Pre-Angkorian and Angkorian periods

While only 27 percent of the dated inscriptions are Pre-Angkorian, the proportion of inscriptions with exchange expressions is approximately the same for both the Pre-Angkorian and Angkorian periods (10-11 percent). Yet while two Pre-Angkorian texts contain expressions suggesting extrinsic value, none have been found for the Angkorian period (Section 7.3). This discrepancy therefore might point to societal or economic differences. Did the Khmer of the period simply not bother with the detail of value? Or, is there an inferred expression of valuation? The significant range of monetary concepts present in both periods makes it improbable that a unit of account would not have existed in the Angkorian period as well. Although we cannot know if expressions such as those for redemption, debt, interest, and reimbursement carried the connotation of a specific extrinsic valuation, this would seem likely.

Furthermore, the exchange terminology used in one text, K. 257N/ 994 (Cœdès 1952: 148), shows that the Angkorians understood the concept of equivalent price. In the inscription, a *vāp*, a member of the *varṇa* of Boxers borrowed *(pul)* silver, metal objects and garments from a *mratāñ khloñ*, to make a purchase. Following a court order, the price/ value (*thlāy*) of this was repaid by the *varṇa* (a number of *vāp*) and the *mratāñ khloñ* was given a plot of land, named Gamryāṅ, representing the interest (*guṇa*) on the loan, and perhaps the capital as well.

The *mratāñ khloñ* then gave each *vāp* various garments, salt and metal objects, as the price (*jāv*) of another piece of land for a sanctuary for the deity at Gamryāṅ. The goods received were to be used for fulfilling their royal service obligation (*rājakāryya*) and the remainder for their subsistence. The limits of the land offered in payment (*thlāy*) for the goods are given. Thus, in this text, *thlāy* was used both for price value where *mūlya* or *argha* might have been used in the Pre-Angkorian, and for the actual amount paid. Further, the proposed uses of the transaction goods here do not suggest prestige exchange. At least here, market considerations, including extrinsic valuation, had a role.

Despite the absence of terms in the Angkorian period for valuation based on an external unit, there were many other examples of monetary concepts similar in meaning to those in the Pre-Angkorian period. Expressions used in the Angkorian transactions suggest that valuations were based on a unit or units of account.

### 7.5.2 Differences between Pre-Angkorian and Angkorian economy

Economic and administrative changes, observed from linguistic features over the discontinuity between the Pre-Angkorian and Angkorian periods, might also be discerned in a broader longitudinal analysis of the occurrence of lexical terms in the inscriptions. A basic graph of the duration of lexical items[131] might enable us to discern trends within the epigraphic record over both periods.

Figure 24 shows the dates and durations of all 1600 object types in the database. While it indicates many new words appearing in the 7th century, it is unlikely that the first appearance of a word in the inscriptions represents its first use in Khmer society: not only was Old Khmer the indigenous language, but Sanskrit is known from the 4th century in neighbouring Champa and from the 5th century in southern Cambodia (Briggs 1999[1951]: 24; 28). From the mid 9th to the early 11th century, there is a large increase in new lexical terms appearing in the epigraphic corpus, with another increase of Sanskrit terms appearing in Jayavarman VII inscriptions at the end of the 12th century.[132] A sizeable number of terms introduced in the Pre-Angkorian period endure well into the Angkorian period.

One interpretation of the changes in the Angkorian period is that they point to increased economic unification and concentration of resources, allowing for larger foundations. The steep increase in the number of new lexical terms in the 10th century corresponds to the

---

[131] The analysis includes all lexical items from the database. Because the study focuses on the economy, most of these terms are of objects from the Old Khmer texts. A large proportion of these terms (31%) are Sanskrit loan words. Data from non-eulogaic Sanskrit texts were included, though not from the bilingual inscriptions (K. 235/ 1052 and K. 254/ 1129).

[132] The Khmer language inscriptions (Coedès 1966: 9) of this period are one-line designations of gods and apotheosised individuals in the '*entrée des chapelles*', and contain no relevant economic information.

appearance of long lists of temple and exchange items. In fact, in Figure 25 the number of new words appears to correspond closely with the number of inscriptions. Using the same reasoning as in Section 6.4, it could be argued that the rates of introduction of new words in Figure 24 need not correspond to changes in the language or the economy to any significant extent. A more detailed analysis below, however, shows that sectors of the economy did change.

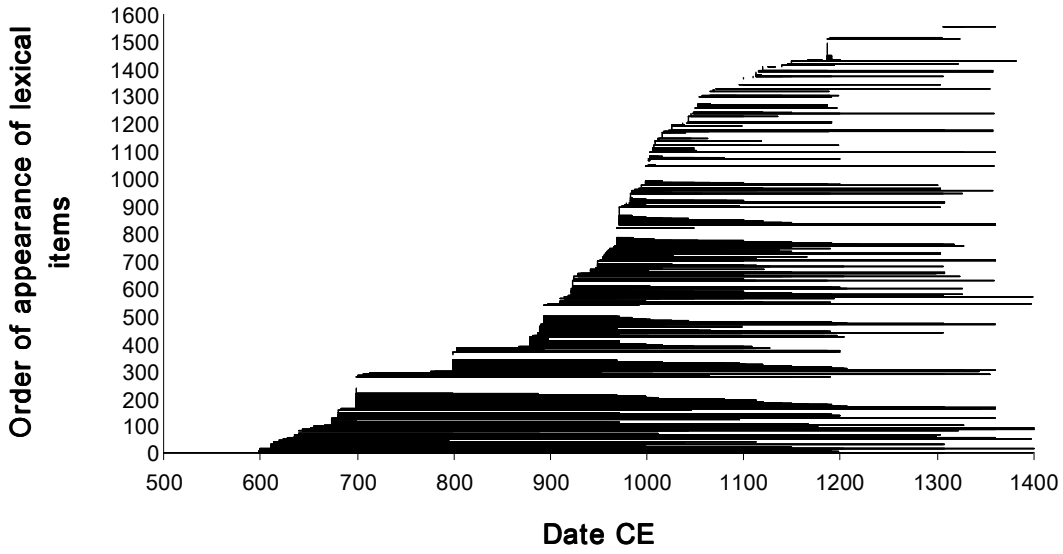


Figure 24 All Database objects: dates and durations, based on earliest and latest mentions[133]

[133] A single mention of an expression appears as a dot. Undated texts are allocated the average of the estimated date range, that is, the mid date between the earliest and latest estimate. Thus an inscription thought to be from the 10th century CE, is given an approximate date of 949 CE.

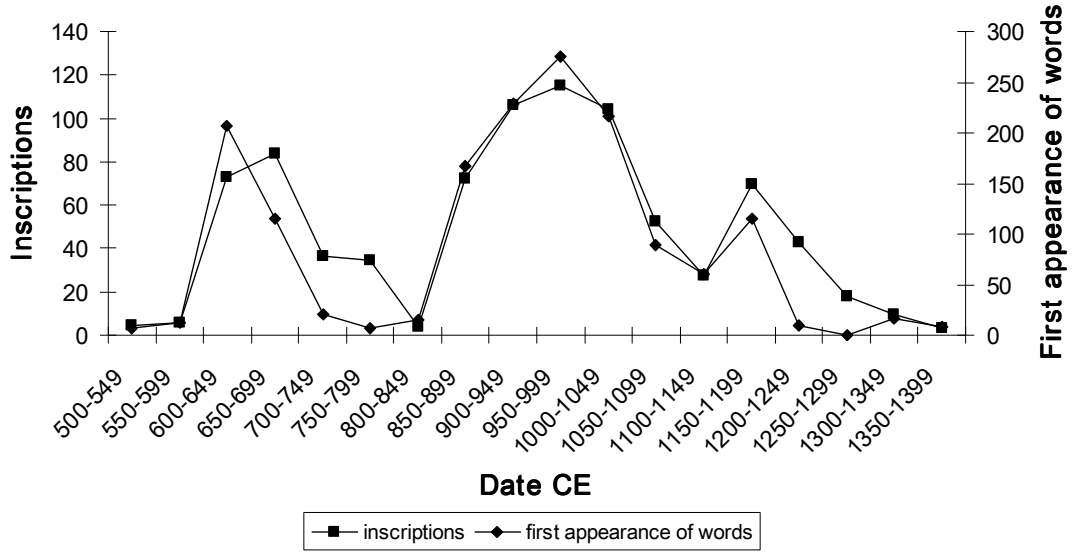


Figure 25 Number of inscriptions and number of new words in each period

Examination of the distributions of the lexical terms from Figure 24 reveals a marked continuity of some objects but localisation of others. A significant proportion of the terms are seen in one inscription only (see also Figure 5). However, this is likely to be at least in part due to inscription loss over time. A few terms do not continue after the point of transition between pre-Angkorian and Angkorian periods and many new words appear subsequently.

In Figures 26 to 28, we can see changes in Khmer terminology between the Pre-Angkorian and Angkorian periods for three categories of the material economy — textiles/ garments, jewellery/ precious stones and animals. In the first two graphs, there are significant numbers of new manufactured items from the 10th century CE. This contrasts with the third graph, showing new terminology for animals — representing the agricultural sector — where there is relatively greater continuity into the Angkorian period.[134] The shapes of the graphs for jewellery and textiles also differ from each other, with a more rapid growth indicated in the 10th century in new terms for jewellery, compared with a steadier increase for the textiles over a century.

[134] An interesting feature of the animal sector is that the proportion of cattle to buffalo mentioned for the Pre-Angkorian period is 3:1, while it is about 14:1 in the Angkorian period, pointing to some economic differences between the periods (Lustig 2007: 21).

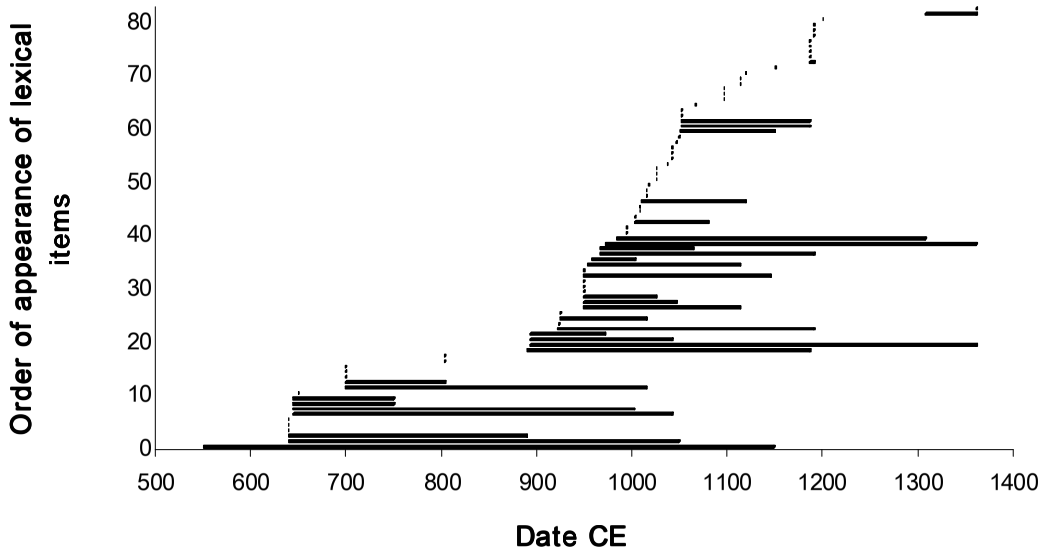


Figure 26 Duration of terms for textiles and garments

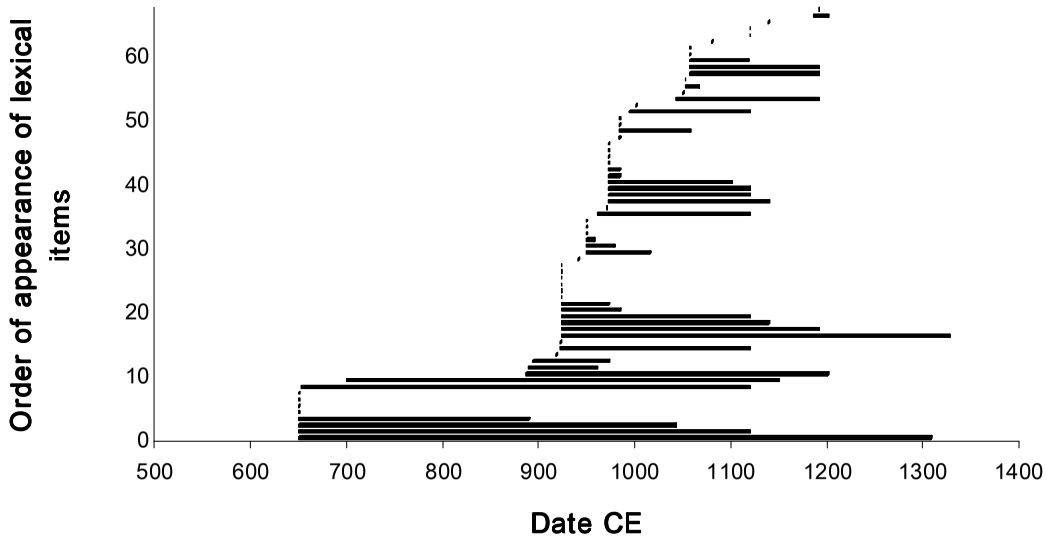


Figure 27 Duration of terms for jewellery and precious stones

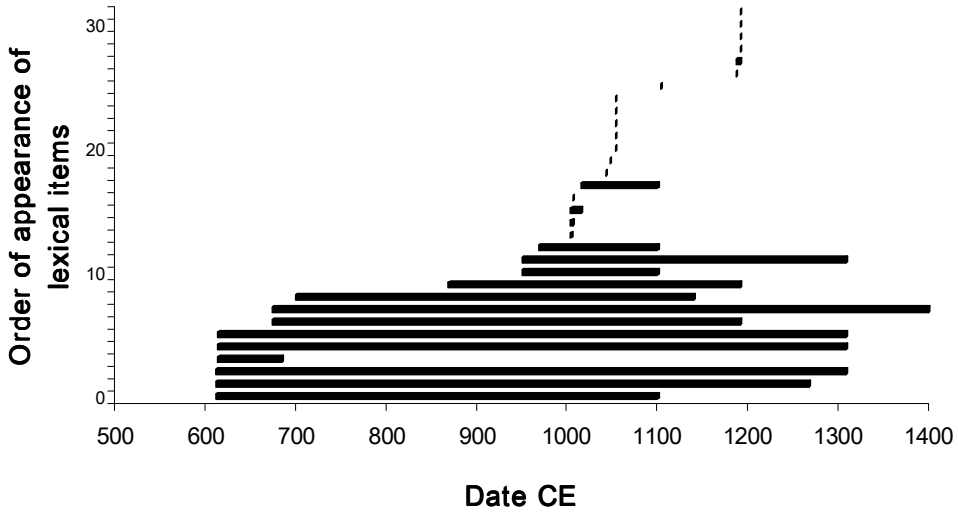


Figure 28 Duration of terms for animals

Analysis of items used in exchanges indicates significant changes in the material economy between the Pre-Angkorian and Angkorian periods. Although the transition period is poorly represented,[135] this altered economy can be observed from 928 CE. By this time, a greater diversity of goods was used for payments than previously, with less rice and textiles but more manufactured metal objects and animals[136] (Figure 29). This points to an increasingly wealthy elite having greater capacity to display status symbols than in the Pre-Angkorian period. Other indications of this prosperity are seen in the proliferation of non-royal temple foundations, the valuable contents of some foundation inventories and also the extravagant gifts and insignia given by rulers to their supporters. In K. 156/ 10th c., the king presented the founder of a temple with a gold palanquin having the head of a *naga*, a golden staff, a white parasol, a parasol of peacock feathers, a pearl and a spittoon.

These changes are seen at about the same time as, and may offer an interesting comparison with those of the 10th century inscriptions in Java. Here the records of gifts given at *sīma* ceremonies in which tax collection rights were granted, contain relatively fewer mentions of textiles and more references to money than earlier, and this is linked to the opening up of foreign trade (Wisseman Christie 1993: 185).

[135] Of the thirteen 8th–9th century Pre-Angkorian inscriptions recording exchanges, only two, K. 1214/ 726 and K. 124/ 803 are dated. The latter records purchases only of temple provisions, and not land or servants.

[136] Private ownership of working livestock, even today in the countryside, still indicates relative wealth.

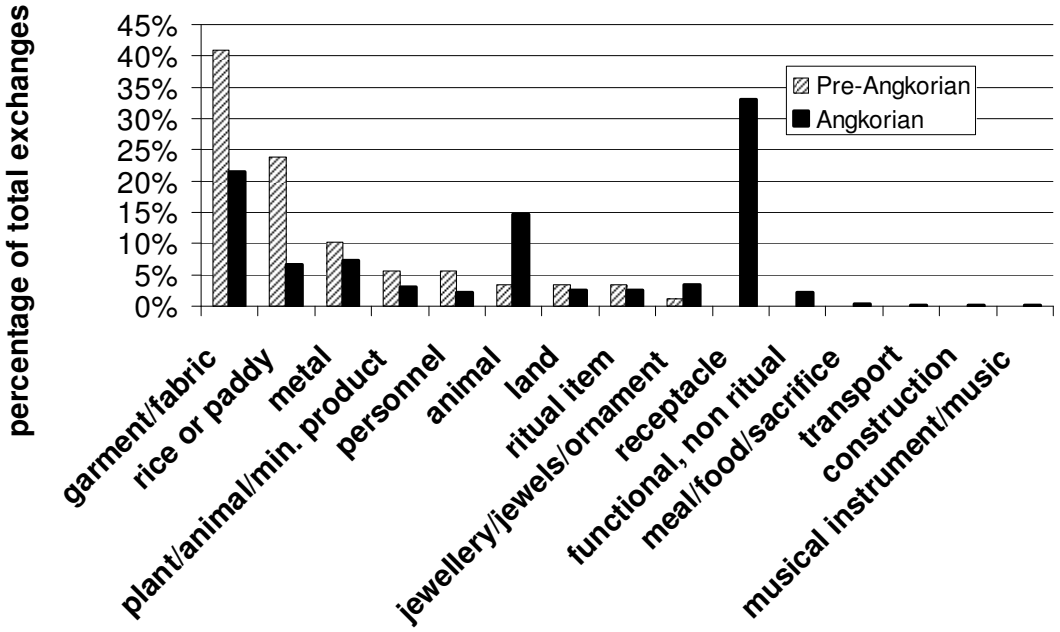


Figure 29 Percentage of exchanges by category: Pre-Angkorian and Angkorian periods

Hall (1985: 206) considers that much of the precious metal the Khmer used to finance the activities of courts and temples and to reward officials may have been plundered, particularly from expeditions waged against the Vietnamese and Cham, mentioned in some inscription eulogies from the late 11th century (e.g. K. 92/ 1028; K. 289D/ 1066). Whatever the source, the wealth of the elite was sufficient to acquire the imported goods they wanted, including precious metal. Manufactured metal items, such as receptacles, replaced some of the rice seen in the Pre-Angkorian exchanges. Given that it was widely available and could not be kept indefinitely, rice may not have been as desirable a store of value as metal. The relative reduction in textiles in exchanges is perhaps not significant in itself, given the introduction of the many new items.

The changes in the material culture signal the increased wealth which elites could acquire in the Angkorian period. This gave them a greater capacity to display status symbols. It is argued below that the economic changes were accompanied by an increased concern among the privileged with status and hierarchies, which is discernible from the inscriptions.

### 7.5.3 Valuations in temples and exchanges

Comparison of the objects recorded for both temples and exchanges in the Angkorian period reveals differences between the economies of these two sectors.[137] Not only do certain

[137] The 'temple sector' in this analysis is taken as that part of the economy relating to the establishment or maintenance of religious foundations. It includes donations, offerings and provisions for deities and temple personnel. The 'exchange sector'

objects occur uniquely in one category or the other (pointing to their apparently ritual or non-ritual function), but the metals used in manufactured temple objects occur in different proportions to those in exchanges (Figure 30). While overall there are more silver than gold objects, gold objects were more likely to be found in temples and silver objects were more likely to be in exchanges, suggesting a hierarchy of values. Gold is normally listed ahead of silver, copper etc, indicating it had the greatest value.

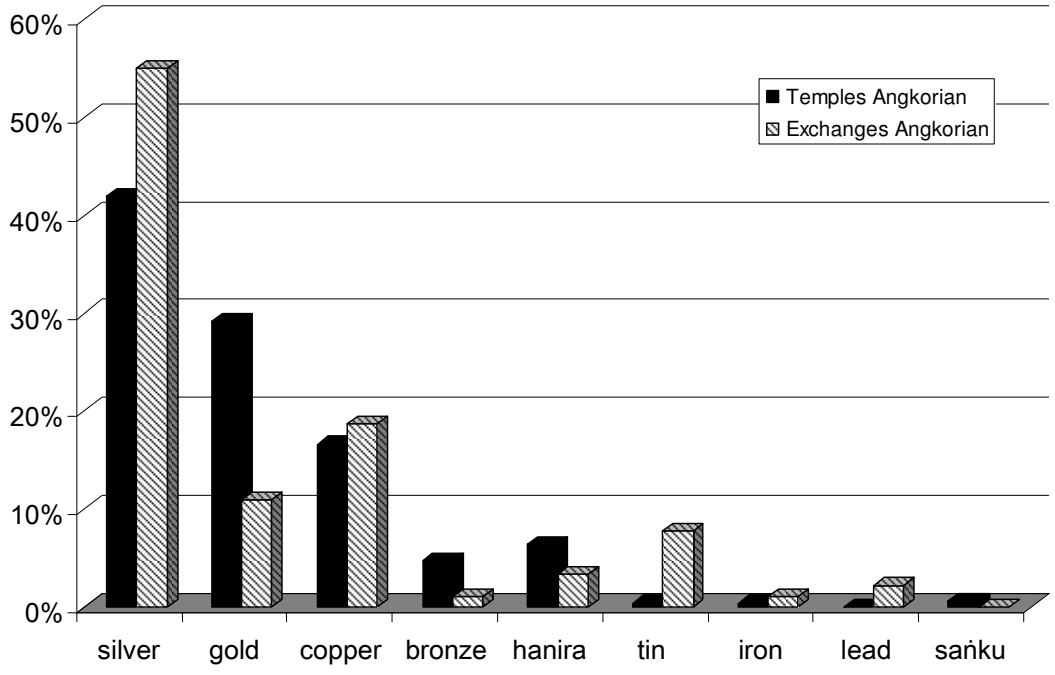


Figure 30 Metal objects in Angkorian temples and exchanges

About 1350 Angkorian period references to manufactured metal objects (ritual items, receptacles and jewellery or accessories) were analysed. Of these references, 35 percent state only the material, 12 percent state only a weight but not a material, and only 9 percent list both material and weight (Figure 31).

Temples have a much higher proportion of objects with stated materials (51 percent) than stated weights (10 percent), but it is the converse for exchanges, where 57 percent of all objects have a stated weight and 24 percent have a stated material. In 45 percent of temple objects and 36 percent of the objects in the exchanges, the materials are not mentioned, and these may sometimes have been of low value materials. However, they were probably metal,

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includes transactions for goods (mostly land) or services (payment for official duties, such as boundary marking). Because the number of metal objects in Pre-Angkorian exchanges is small, only Angkorian artefacts have been analysed.

since the same items appear in similar contexts where they are frequently of metal. Garments and fabrics are also more likely to have a measurement recorded in the exchanges than in the temples, but the difference is not so marked as with metal objects.

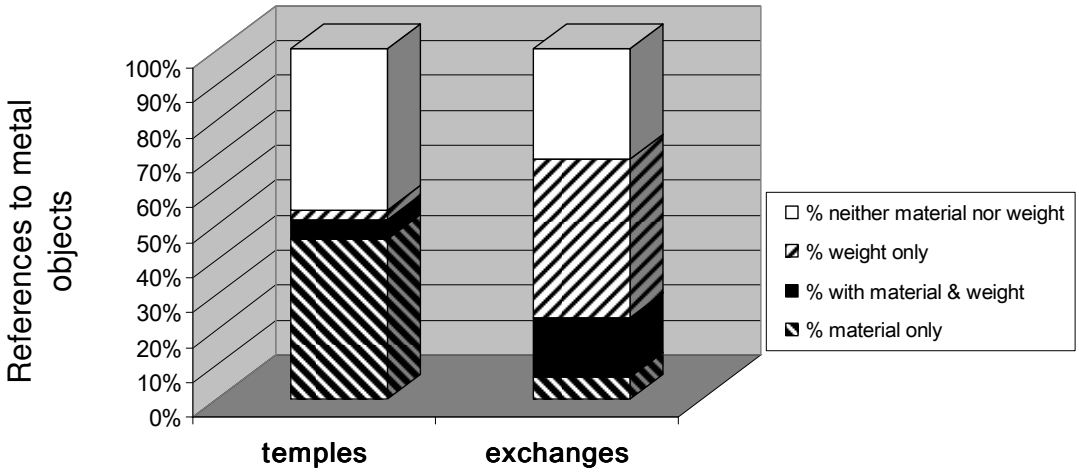


Figure 31 Angkorian metal objects: differences between temples and exchanges

The sometimes seemingly random assortments of exchange goods were, it appears, in fact carefully calculated. This is highlighted in K. 258A/ 1094 (Cœdès 1952: 195), where the totals for different metals are stated separately. The much higher proportion of weights found in exchanges than in temples suggests that the weights were important when bartering for exchanges, whereas accurate valuations were not so important for the more prestigious temple items. The exchanges may have been recorded when the dimensions of transferred land were officially registered (e.g. in K. 205/ 1089; K. 207/ 1042). Such 'legal documents' could have served as important evidence in matters of litigation and taxation assessments. Conversely, it may have been more important to record the material of a gift to a temple than the material of an exchange item, since the material of the gift could be important for proclaiming the status or merit of the donor, and these objects were presumably not, at least originally, intended for subsequent transactions.

### 7.5.4 Values of hierarchy, status, merit

Various material differences in wealth between the Pre-Angkorian and Angkorian periods discerned in the Khmer inscriptions have been discussed above. Other important differences include increased control of populations and the foundations, changes in the names of commoners and in the titles of officials, and spelling and vocabulary changes, much of the

latter in administrative and technical language. These suggest substantial institutional changes (Vickery 1998: 87). Arguably, the increased wealth led to a more highly stratified society.

The organisation of the foundations also changed. Pre-Angkorian foundations tended to be established by a person of relatively high status, perhaps a *mratāñ*, obtaining land and basic needs from other individuals, frequently *poñ.* These foundations often appear to have been run as economic units and, although deities were frequently referred to in the inscriptions, the foundations may not have all been religious institutions (ibid., 278). The Angkorian period foundations, on the other hand, were mostly established by rulers or wealthy individuals. These establishments sometimes maintained large numbers of people to provide for the deities and produce surpluses, much of which would have been consumed by the founders and their associates.

The Angkorian period inscriptions highlight an elite society seemingly more focused on ritual and gaining merit than earlier. As well, there is more emphasis on hierarchies and status (Sahai 1978: 18; Wolters 1982: 19), consistent with the nature of a more complex society. Hierarchies are evident in the many levels and classes of positions, real or symbolic, given to officials and members of *varṇa*[138] (corporations); and in the links formed between local and regional deities.

As elsewhere in Southeast Asia and up to relatively recent times, status, hierarchy and merit appear important. Political activity had a strongly hierarchical basis adapted from India. The centre regulated status by specifying the privileges of different ranks of people, bestowing marks of legitimacy: titles, posts, regalia and other symbols of honour and favour. Social distinctions were reinforced by ideology and merit acquisition (Errington 1983: 199; Ebihara 1984: 284). In Java from the 11th century (Wisseman Christie 1986: 83) and Angkor in the late 13th century (Zhou 1993[1297]: 7) for example, social differences were enforced through laws restricting the wearing of particular fabrics.

Since Angkor's bureaucracy was not institutionalised, administrative roles such as tax collection, levies of *corvée* labour, mobilisation of troops, adjudication of legal cases, etc. were given to officials appointed by the king. Rulers exercised patronage in appointing people to these positions, or to others having ceremonial functions (Mabbett 1977; 1978; Wolters 1982). The elaborate ritualised language in which government and foundation matters were dealt with (e.g. Terwiel 1996: 322-23) and observation of 19th century court appointments has even suggested to one researcher that the complexity of titles, dispersal of functions and overlapping roles of the officials which, in effect, limited any consolidation of power by the rulers, may have had antecedents in the Angkorian period (Mabbett 1977: 440). Yet the flow charts below — Figure 32, from a lengthy explanation of the history of ownership of some

[138] Varṇas: see Mabbett, 1977; also Section 3.4.2.

disputed lands; and Figure 33, showing a more detailed chain of authority from the king down to village elders in a legal dispute over land (Cœdès 1952: 115) — give an idea of the protocols of a seemingly well functioning hierarchy in accordance with titles, ranks, positions and other marks of status.

Further, many Angkorian period inscriptions contain records of royal edicts on matters of land, law and administration of the religious foundations, and indicate that the power of the kings to impose their authority was not as restricted as it appeared to be in the 19th century.

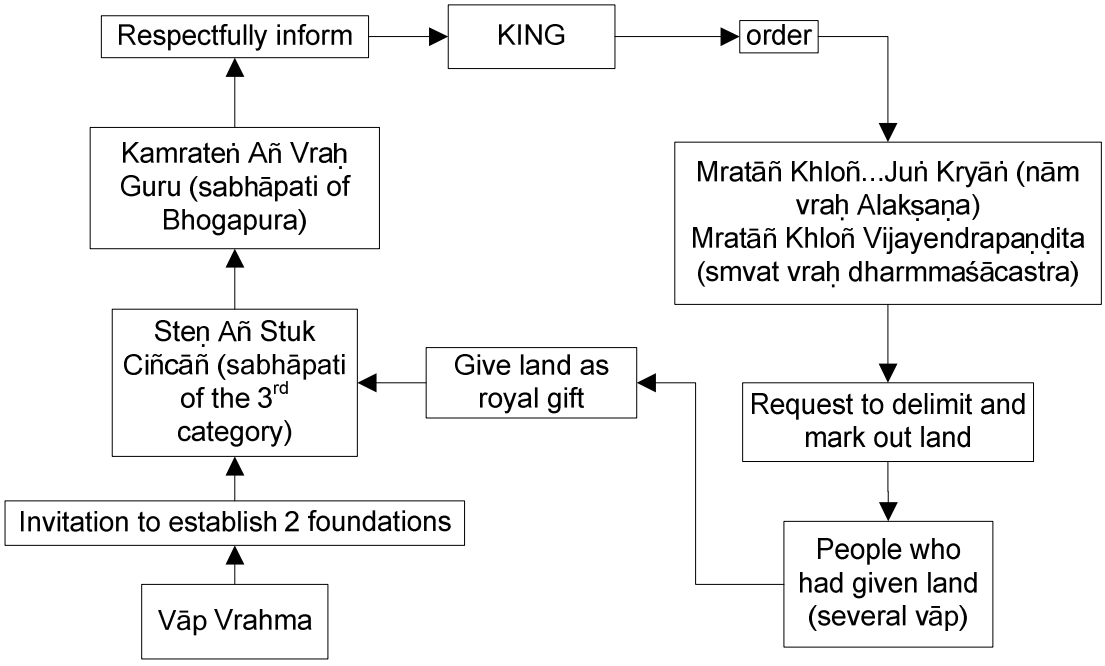


Figure 32 Chain of authority inferred from K. 843/ 1025 CE

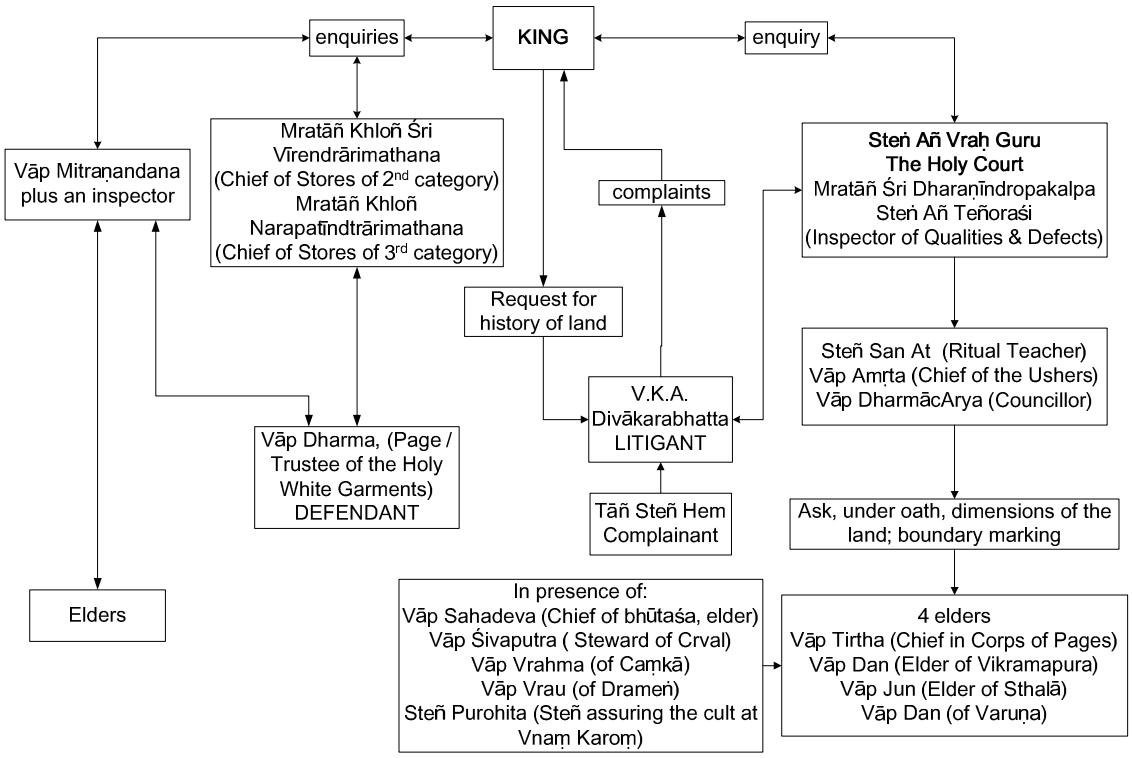


Figure 33 Chain of authority inferred from K. 262/ 982 CE

Donations to a foundation are frequently recorded in the inscriptions as 'works of merit', presumably enhancing the donor's status before the gods and helping ensure a comfortable and prosperous afterlife. Offering a share or all of the merit of a private foundation to the ruler would have been a judicious move on the part of the founders. The practice was based on the Indian proposition that the king shared the spiritual merit of his subjects (Sahai 1970: 122). A 10th century inscription from Banteay Srei explains how the share of the merit of the foundations of the Vraḥ Guru (Yajñavarāha) and his brother are allocated to the king and others. The merit was apportioned in line with status.

> 'Of all the merit of these foundations, the king should receive either one quarter or one sixth; the king, who will protect them, should receive half the merit; the favourite of the king, who will protect them, should receive one quarter of the merit. If ill fortune comes to the temple, the Śivaite master who is the Superior, the Chief Minister of the royal family and the good people who will inform the king seven times, should still receive half the merit'
>
> (K. 842/ 968).

People were, not uncommonly, rewarded on the basis of their status. In K. 206/ 1042 (Cœdès 1951: 16), payments to members of the court for boundary marking services appear to be in accordance with status (Table 11).

| Payment/fees (*thlās*) | to Members of the Court (*vraḥ sabhā*) |
|---|---|
| 2 *thnap,* 10 *yo canlyāk* | V.K.A. Pūrvāśramādhipati |
| 1 *thnap,* 5 *yo canlyāk* | V.K.A. Vidyāśrama |
| 1 *thnap,* 10 *yo ullāra* | V.K.-- |
| 1 *thnap,* 1 *yo ullāra* | Kamsteń Yanap, *vraḥ sabhā* |
| 1 *thnap* | Mratań Khloñ Mat Chlań, *khloñ vala* of Urvāśrama |

Table 11 Payment with *canlyāk* (garments), *thnap* (covers) and *ullāra* (a textile) for boundary marking: K. 206/ 1042 CE

In at least one case (Table 12), the same applied to prices paid for land. In K. 374/ 1042 (Cœdès 1954: 253), officials with higher ranking titles (V.K.A.) were paid more for their share of a land parcel than those with lower ranking titles (*kamsteń* and *khloñ*). It would appear that the individuals receiving payment were paid together and the goods apportioned later according to status. Had the payments been made to individuals, each selling a different piece of land, this would usually be set out.

| Payment | Vendors |
|---|---|
| 4 holy cows, 1 *kinnara* (musical instrument), 1 copper water vase | Paid to the god (*Kaṃmrateń Jagāt*) |
| 1 gold half ring with 3 sapphires (1 *liń*), 1 *yau* of *khjo* | V.K.A. Vyāpāra |
| 1 gold *gobhikṣa* (1 *sliń*), 1 *patula* (2 *pāda*), 1 silver box (2 *liń*) | V.K.A. *Vraḥ Tirtha* |
| 1 *pań śāla* (?), 1 container (*bhājana*) (4 *jyań*), 1 tin bowl (2 *jyań*), 1 holy cow | *Kaṃsteń*, *khloñ mukha* of the waxing moon |
| 2 *kmauv khlāń* (animal ? strong ? black | *Kaṃsteń*, astrologer |
| x holy cows | *Kaṃsteń*, Guardian of Holy Registers |
| 1 holy cow | Inspector of Population |
| 1 holy cow | *Kaṃsteń, khloñ rmes* |
| 1 holy cow | *Kaṃ(steń)*, Guardian, Chief of Vraḥ Vloń |
| ? holy cows | Chief of Population of J., Chief of *caṃlāk* |
| 1 container (*bhājana*) (4 *jyań*) | *Kaṃsteń* Dulau |

Table 12 Prices for land, varying with rank, K. 374/ 1042

Artisans may well have been paid according to recognised status, the demand for their work or hereditary factors. Weavers, temple builders and sculptors were often held in high esteem and paid accordingly in societies such as Vijayanagara (Sinopoli 2003: Ch. 6) and Pagan (Aung

Thwin 1976: 210-11). In some cases under Angkor's rule, their status seems to have been relatively high.[139]

While hierarchy or merit patently influenced the terms of these transactions, such a system is unlikely to have functioned in the rest of the economy, since all prices would then vary according to the relative status of buyer and vendor, and this would be unworkable without an elaborate code, for which there is no evidence. In transactions unrelated to temple deities, market considerations were likely to have had higher priority. Nevertheless, whatever the situation in the rest of the economy, in these elite transactions, the participants would have had more than wealth in mind.

## 7.6 Taxation and the accumulation of wealth

While monetary values are not readily discernible in the epigraphic records, the accumulation of wealth by individuals was a very high priority, as evidenced by disputes over property, requests for immunities and the declarations by the founders concerning the inheritance of foundation lands. The increase in individual wealth was underpinned mainly by rice surpluses. This in turn funded the growth in power and influence of the Khmer state, largely with tax collected at all levels from land, agriculture, commerce and as *corvée* (Sections 4.5.2; 6.4; Appendix 7). The state's acquisition of revenue is seen in the many references to tax and tax collectors. The officers of the *rājakāryya* were seemingly active in most locations where there were sizeable temples, even beyond the major communication corridors (Section 6.8.2). There were state and district taxes and levies, which are often difficult to separate, since some local officials appear to have been acting on behalf of the state service. As will be discussed in Sections 8.2 and 8.4.3, local temples do not appear to have been collecting and transmitting significant quantities of resources to the centre. The large amounts of rice directly mobilised from villages for the Prah Khan temple in the late 12th century (Sections 4.3; 8.2) appear to be an exception, and are unusual in that the capital, Angkor, has been assessed to have been self-sufficient in rice (Section 3.3.3).

Rice need not have been the predominant taxation item of the wealthy. The elite were able to use high value items, which, it was argued above, could stress prestige and the value they carried and were easier to store or transport. For example in K. 158/ 1003, officials of the rice

[139] In K. 205/ 1089 an artisan in the service of the god is a witness to a land transaction, alongside chiefs, members of the court, guardian of the holy registers etc. and in the Sanskrit part of the same inscription an individual who is chief of the artisans is rewarded by king Udayādityvarman by admission to the *varṇa* of the golden cups. In K. 383/ 1119, Sūryavarman II authorises a royal artisan to establish a village. K. 470/ early 14th c, was translated to suggest that gold objects were given as payment to artisans, master architects, Brahmins, astrologers and reciters, but this is now uncertain (Section 4.5.1).

authority accepted spittoons, tools and a goat as payment to the *rājakāryya*. In K. 420/ 1049, land was given in compensation for rice owing to the *rājakāryya.*

Levied revenue was doubtless used for roads, irrigation, temples, armies, officials, gifts, temple support, tribute and as exchange for trade goods. Where state expenditure is away from the capital, it is efficient to use taxes and levies sourced locally — local rice to feed the workers, *corvée* to supply the labour and perhaps high value goods such as can be seen in the exchanges in Section 7.3, for skilled workers. Rice, a principal taxation commodity, could be exchanged for high value goods which could be transported where additional payment was needed, or exported, using the effective Khmer communication network (Sections 3.3.1; 6.7). Where tax was paid with agricultural products, they could be kept in royal stores or with the producers until needed, and could be administered using a register of lands and taxes, such as is mentioned in K. 205/ 1036.

Whether or not there were also specialised industries controlled or supervised by the state, such as for exportable forest products (Section 4.6.2) or for iron (Section 3.2.3), it is likely that these were limited to sectors of the economy which were of strategic importance (Section 7.4.2). The Khmer state did not control the economy from the centre. It would seem that Angkor's economic strategy for accumulating wealth developed consciously or unconsciously as one of enhancing the general economy in order to increase revenue from taxes and levies. Angkor was able to amass the wealth which allowed it to expand, to trade and to build its monuments and infrastructure. The evidence indicates that the Khmer Empire had effective means of accumulating capital, which had developed over time and could be adapted to changing circumstances.

## 7.7 Conclusion

The assessment in this chapter has highlighted material differences between the Pre-Angkorian and the Angkorian economies, which are consistent with other findings of linguistic and organisational differences between the periods (Vickery 1998: 87). Important changes in the lexicon, and in indications of increased wealth and exposure to foreign goods have been observed from temple inventories and lists of exchange items. The Angkorian period saw a much greater variety of material items, especially of metal objects and textiles, in contrast to the terms for agricultural items, which were more likely to carry over from the Pre-Angkorian period. Metal objects and animals replaced textiles and rice as classes of items most commonly used in elite transactions. The enhanced wealth of the elite would add to the importance of symbols of wealth and status and be manifest in a more stratified hierarchy. The changes in Angkor appear analogous to those in another part of Southeast Asia, Java, where an increase in the records of metal in inscriptions has been ascribed to increased wealth due to trade.

Although Pre-Angkorian inscriptions rarely listed temple treasure, this was common in the Angkorian period. A comparison of the proportion of gold to silver objects in temples with the proportion in exchanges showed that gold was more common in temples and silver dominated in the exchanges. In addition, listed metal exchange objects were much more likely to include a weight, while temple items more commonly referred to the material only. These findings suggest that, despite the seemingly random lists of objects, valuations were taken into account and the weight of an object was important in bartering. Gold, being more valuable than silver (and always listed ahead of silver) was more prestigious and brought greater merit to donors. If someone wished to display wealth or generosity, publicising the high-value material in temple donations could be more conspicuous, which might account for the more frequent mentions of the type of metal in the temple lists. The lists themselves of transaction and temple items are likely to have been a means of highlighting the wealth of the donors. The Angkorian period inscriptions reflect an elite society seemingly more focused on status and gaining merit than earlier.

The importance of status and hierarchy has been shown in the depiction of the chains of command observed in two inscriptions. Much attention was paid to recording the protocols which were based on function, title and rank and influenced the relationships between individuals from king to commoner — though the interactions in the texts do not go below village elders. Status is a factor in the allocation of payment to officials for service in one inscription and in payments for land in another.

Since barter existed in many parts of Southeast Asia, at times alongside monetised economies, post 9th century Angkor epigraphy is remarkable, not for lacking a coinage, but for its lack of mention of any common unit of account. However, there are indications of paddy and silver being used in this capacity in the late Pre-Angkorian period. It is logical to speculate that this would have continued. Moreover, since the Angkorian period saw a significant increase in silver and gold objects for gifts, ritual display and exchanges, the apparent disappearance of a unit of account is unlikely to be due to a shortage of metal. We cannot unequivocally interpret the meaning and significance of the few occurrences of the terms signifying value, *mūlya* and *argha,* in the late Pre-Angkorian texts, nor indeed of many other terms of transaction in both periods. Nevertheless, in a complex society such as Angkor's, the diverse items recorded in the epigraphy are likely to have been valued against a common unit. The diversity of expressions in both Pre-Angkorian and Angkorian periods for different types of transactions suggests a sophisticated understanding of monetary concepts. The apparent absence of expression for value in the Angkorian period would thus seem to have more to do with the society having changed priorities, than regressive economics.

The question then arises why the Khmer, in order to simplify the accounting, did not record the prices paid in terms of a unit of account that must have existed. In small-scale transactions,

such as for food, barter without the use of a unit of account is possible. However, it is impractical for a range of different items to be used in small transactions. For larger value transactions, such as for precious metal objects, a common unit of account becomes essential, especially to deal with the problem of the non-coincidence of wants. Without doubt, the elite were familiar with transactions at both levels. Further, and given the example of fines, mainly in gold, outlined in the 9th century Lolei monastery text, K. 323/ 889, it was probably more pragmatic to use a simpler medium of exchange such as a weight of metal than to exchange many objects. Domestic markets were likely in existence before they were first documented in the late 12th century.

Even if the availability of precious metals had been limited, which, apart from silver, is unlikely according to modern mineralogical surveys, non-metallic or base metal money could have been adopted. There is no reason to think that Angkor's position as an inland agrarian state would have hindered development of the market principles in evidence around Southeast Asia. Trade items and traders are occasionally mentioned in the epigraphy and we have archaeological evidence of imports dating from the 9th century CE or earlier. Further, there is increasing historical evidence of commercial contact with other states, including records of Khmer merchants in Southeast Asian ports in the 9th to 11th centuries. Following the decline of the Funan trade, Pre-Angkorian polities must have established links with international trade routes through new or established communications networks. One 8th century inscription, K. 259, mentions a 'merchant chief'. Contact with other economies would certainly have exposed the Khmer to monetisation. If they did not adopt such a system, it may have been because the existing system worked for the rulers and other elites.

Regardless of the material differences between the temple and the exchange sectors, the transactions outlined in the temple inscriptions should be viewed as intrinsically bound to the elite milieu of the rulers, officials, religious institutions and gods, where merit, hierarchy, status and displays of wealth played a significant role. The Angkorian temple economy should not be seen as separate from nor wholly representative of the greater economy, because the temple sector, run by and for the elite, impacted on, and was in turn influenced by the greater economy, while a secular economy of barter and a unit of account existed for local markets and probably for other transactions outside the temple setting. However, from the viewpoint of the writers of the inscriptions detailing the purchases of goods and services, status, hierarchy, merit and public display of wealth appear to override market concerns.

Command economies have used money, and moneyless societies may have price-setting markets. Extensive, highly controlled economies are unlikely to be sustainable in the long term. An economy such as Angkor's, with its long lines of communication, could not have relied on centrally administered prices. Furthermore, no strong evidence was found for appreciable state revenue coming from state industries, as was postulated by Sedov. Tax,

paid in kind, was shown to have been collected at all levels and in many areas, including locations beyond the major communication corridors. Some was paid by the elite in high value goods. Rice does not appear in the Angkorian inscriptions as an important taxation item, since the elite could use high value items which were easier to store, and as argued above, could stress prestige and the value they carried.

In spite of a lack of money, the Khmer state maintained an ability to derive revenue from production, commerce and trade. Ensuring that it continued to have the operational capacity to accumulate wealth was important for sustaining the empire. This could not arise by chance, but needed to be consciously developed and continually adapted to the prevailing circumstances, including the changing political processes discussed in Chapter 6. From the assessments in this chapter, some features important for Angkor's economic processes can be discerned:

- Despite being moneyless, Angkor had monetary concepts necessary for efficient transactions, including a unit of account.
- Trading links were continual and extensive.
- The state was organised to collect taxation at all levels.
- In the Angkorian temple inventories, displays of status and hierarchy appear to be of greater concern to the elite than accounts of market values.

The last feature, recognition of status and hierarchy, so important in the economic activities of the elite, appears also to have been a feature of the temple structure, and of ideological processes, discussed below.

# 8 Ideological processes: rulers, elites and foundations

> The king ordered him to proceed with the construction of K.J. Iśānatīrtha, to make a sacrifice in honour of the guru, to offer the three lands and all these royal goods and to offer up the lands to V.K.A. of Samtāc Vrāy, thereby ordaining that they not succumb to demands for *cañcūla*, grains or oil, and that they are not subject to the authority of the district other than for the protection of the original (foundation), beginning with (protection against) all harassment.
>
> K. 450 (11th century CE)

> Loñ Śri Barddha … presented a request (to the king) asking him to accept these servants, rice fields and gardens in royal favour and to offer them to the divinity he had erected, and to offer (these to the king) in the name of a royal foundation, and asking if his majesty King Sūryavarman could erect a stele proclaiming protection for this royal foundation.
>
> K. 230 (1026 CE)

## 8.1 Introduction

The quotations above are two of the many illustrations in the inscriptions of the close relationships between the Khmer rulers, the temple foundations, their founders and the deities to which these were dedicated. The administration of the empire, depending on the loyalty of the regional elite, was secured through material rewards, titles, positions and the sponsorship of private religious foundations. The continuing involvement of rulers in the establishment, administration and material support for religious foundations was an important strategy for managing the state and an effective means of ideological control.

The inscriptions depict a world in which considerable quantities of resources were poured into religious foundations to provide elaborate support for the deities. Founders and their families were able to enhance their wealth through production on acquired foundation lands, by the labour of assigned villagers, and the immunities from various levies granted to their foundations. The long-term consequences of these immunities for the state are considered here.

Hall's (1985) proposed hierarchy of temples and their deities, developed from Sedov (1963; 1967), was a mechanism for economic and ideological control (Section 2.4.2). Sedov's hypothesis derived from the practice, seen in some inscriptions, of a foundation deity formally joined and allocating regular provisions to another deity at a different location. The benefits to the founders of amalgamating their religious foundation and the role of the purported hierarchical structure in the transfers of resources between temples are examined. The presence of state officials in some temples also indicates that the temples played a part in the

state's administration. The large quantity of rice received by the Prah Khan late in the 12th century, which was well in excess of its needs, suggests royal temples had an economic role at that time. The roles of the temples and of officials in the state's administration and acquisition of resources are also assessed.

## 8.2 Relationships between the state, temples and officials

Taxation or other impositions are referred to in the temple inscriptions, frequently in reference to specific immunities. The inscriptions suggest that a variety of commodities and services were levied by authorities. Yet the means of taxation and the involvement of the state and the temples in the production and collection of resources are not explicit in the texts, despite numerous mentions of officials as founders and donors, and of their role in extracting levies from the population. Whether villages, which were producing resources for temples, were also supplying the state, is not clear.

Levies were calculated for whole villages or districts, at least sometimes. For example, in inscription K. 571/ 11th c., various districts (*anrāy*) are assessed to provision individual temple personnel. From late 12th century Jayavarman VII inscriptions, we know that thousands of villages produced agricultural supplies for two large royal temples: inscription K. 908/ 1191 records that 97,840 people in 5,324 villages (*grāma*) provided rice for the Prah Khan temple and 208,532 people in 8,176 villages did this for 20,400 gods in the provinces. K. 273/ 1186 reports that the Ta Prohm temple was supplied by 66,625 people in 3140 villages. Villages also provided the gods with comestibles and clothes, such as the provisions from the weavers' shop and from the market.

While the Prah Khan may have been getting around 20 percent of the estimated production of its villages, the Ta Prohm was receiving only 2 percent, a factor of ten less than the Prah Khan. If the rice supplied by the villages is compared with each temple's stated needs, the Ta Prohm would have received only about one fifth of its total rice needs from its assigned villages, while in the case of the Prah Khan this was about double its stated needs, again a factor of ten. Also in K. 908/ 1186 is mention of a very large quantity of rice (enough to feed about a quarter of a million adults for a year), whose origin is unexplained. Lustig (2001: 80-84) has concluded that it is not clear whether this rice should be regarded as state taxation. There is no information about the provenance of these supplies or of the relatively insignificant quantities of resources received from the royal stores. These are the only records of such large scale levying of villages by a central temple, and could represent a shift in economic management under Jayavarman VII or his immediate predecessors. There are no indications of the involvement of other smaller temples in providing resources to the centre.

Many of the officials engaged in taxing and levying also interacted with the foundations in other capacities. Much of our understanding of the various taxes and levies, such as *corvée,* derives from the records in the inscriptions of the immunities granted to foundation communities (e.g. Sahai 1977b; Hall 1985: 158). The statements of immunities specified that individuals representing the state, or local agencies, such as the district, the village or temple and sometimes even family members, had no authority to apply a levy or for the management of the religious foundation or its staff.[140] For example, in K. 212/ 1027, four *āśrama* are declared to be under the inspectors of the royal service and not a matter for the district chiefs. It is sometimes not clear if the immunity refers to impositions by state or by local officials, what a particular immunity refers to or what the roles of the officials and authorities were.

There is a difficulty in making a distinction between the various types of impositions, taxation, payments and provision for subsistence of the officials, since roles and rewards were not defined as in the modern western world. A person with authority over a foundation, its lands, servants, resources or other goods would likely be receiving or taking a proportion, be it through official tax, labour, or unofficial demands on goods and production. Direct payment for services would often have been more straightforward, as in the case of some officials of the *kāryya* (service) and the *rājakāryya* (royal service). In inscriptions K. 989/ 1008 and K. 684/ 10th–11th c., these officials, who were involved in fiscal and *corvée* levies, were allocated regular provisions of rice from the foundations. Oversight of family temples by government officials may have been common or obligatory (e.g. Sedov 1967: 164).

The jurisdictions of most of the named officials are difficult to identify and may not always have been clearly segregated (Section 3.4.2). Figure 34 illustrates the frequency of references to the duties of the officials most commonly associated with levies or immunities. The frequencies are calculated by counting each role of an individual official in an inscription only once, regardless of how often the role is mentioned in relation to that individual. The roles are assigned to one of ten classes. Roles specifically relating to land issues (such as placing boundary markers) are prominent. However, most of the legal disputes and instances of transmitting royal ordinances and witnessing are also about establishing the 'ownership' of land. Sometimes an individual in an inscription has two or even three roles, such as: transmitting an ordinance, arranging for land to be measured and informing the king about implementing a court ruling. Non-official roles, such as donating to a foundation, have not been considered in this analysis.

[140] The expressions most commonly used are *vvaṃ jā (pi) svatantra* and *vvaṃ āc ti āyatta* , meaning literally 'it is not good that' and *vvaṃ āc ti*, 'it is not permitted that' (Philip Jenner 2006, pers. comm.).

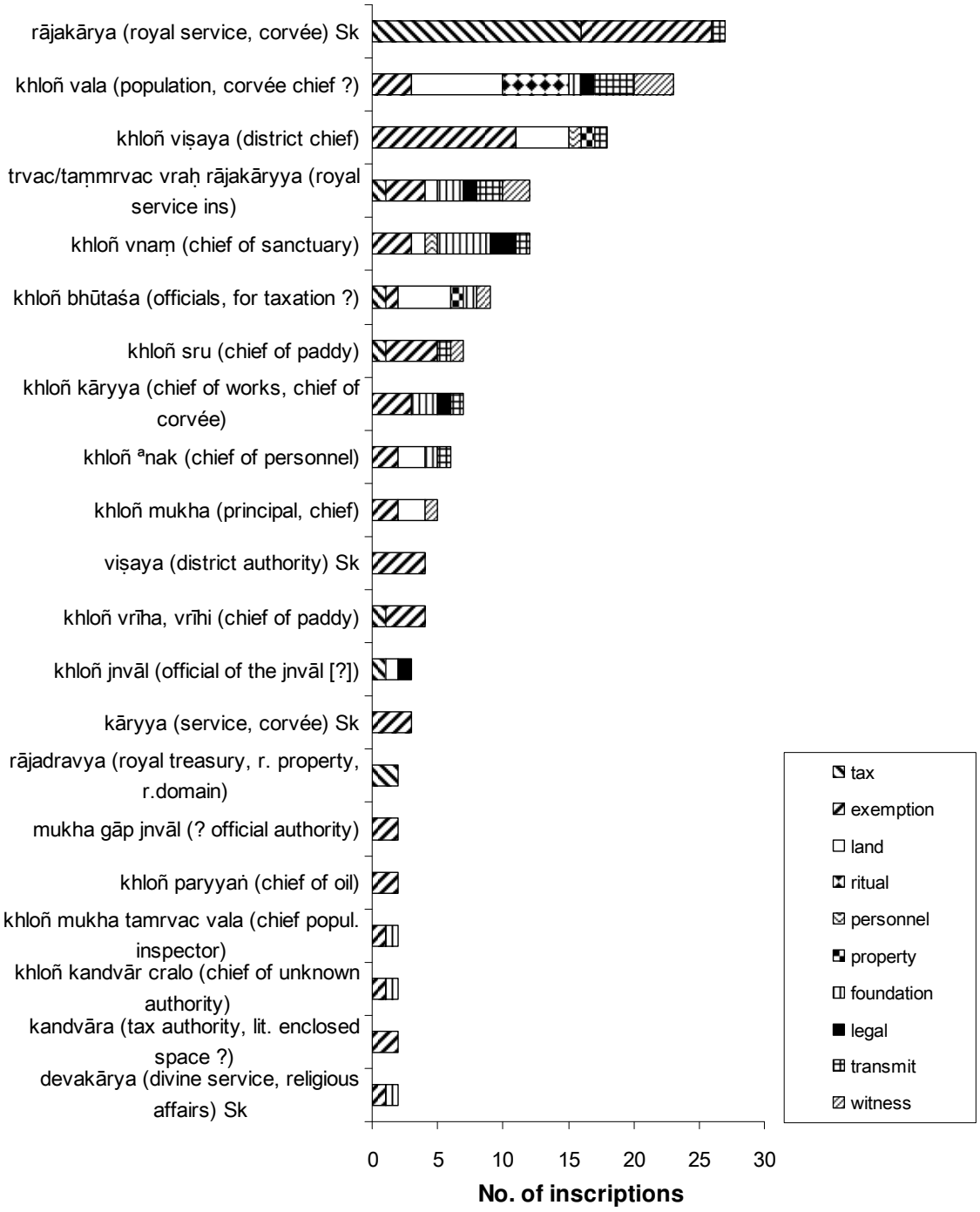


Figure 34 Roles of officials and authorities associated with tax or other levies. Officials listed were mentioned in roles additional to taxation or other levying.

Figure 34 demonstrates that officials who were extracting resources, including labour, for the state or the districts, were also undertaking duties at the temples and vice versa. For example the *khloñ vala* (chief of population) is occasionally mentioned in relation to administration of a

foundation. Of officials and authorities[141] mentioned at least twice, and at least once in connection with levies or immunities, some (*khloñ sru* [rice chief], *khloñ vrīha* [rice chief], *khloñ paryyaṅ* [butter/ oil chief]) are referred to principally in the role of imposing levies. Several others (*khloñ vala, trvac/ tamrvac vraḥ rājakāryya, khloñ kāryya, khloñ viṣaya* [district chief], *khloñ bhūtaśa* [?]) have up to six other administrative roles affecting landowners and religious establishments. For example, some officials associated with foundations, such as the *khloñ vnam* (sanctuary chief) and *devaparicāra* (servant of the god) sometimes exercised authority beyond the temple. In two inscriptions (K. 690/ 10th c.; K. 265/ 959), a *devaparicāra* is mentioned in lists of servants; in another one (K. 265/ 959), a *devaparicāra* is declared to have no authority to ask for *cañcūla.* Several different officials could recruit people for royal service or some other unspecified service. These included the *trvac/ tamrvac vraḥ rājakāryya* (e.g. K. 340/ 10th c.), *khloñ viṣaya* (K. 1087), *khloñ kāryya, khloñ mukha* (K. 682, K. 340) and *khloñ vala* (population chief) (K. 1152). The authorities of the *cañcūla, bhūtaśa, gāp jnval* and *kandvar cralo* are not understood. For example, *cañcūla*, occurring fourteen times in the epigraphy, always in connection with immunities, is taken by Cœdès (1937-1966), Sahai (1977b) and Jenner (2009a) to be castor oil and by Pou (2001) to be sesame, but by Sedov (1978: 123) to mean taxes paid in kind. The contexts suggest that it might refer to agricultural products other than rice.

This appraisal indicates that, apart from the one possible instance of the allocation of rice to the Prah Khan temple, the temples were not collecting or passing on resources for the state through taxation. In support for a link between the state and the foundations, it was found that officials who could impose taxes or levies on behalf of the state or district could also act in separate roles for the state, district or the temple. In some instances, the association between officials and temples is close, with officials receiving material support from the foundations.

## 8.3 Immunities

The immunities were a material incentive for individuals to establish religious foundations. The foundations in turn enhanced the wealth of the elite and, as discussed below, appear to have been an instrument for the promulgation of state ideologies. It is not clear from the inscriptions how the immunities were applied. Mabbett (1977: 437) considered that royal foundations were sometimes granted immunities from religious inspectors. Sahai (1977b: 134), in an interpretation of Cœdès (1963: 249), suggested a correlation between the granting by Sūryavarman I of land west of the Tonle Sap for religious foundations and fiscal immunities. However, this is not borne out by the distribution of immunities in the Angkorian period. The

[141] To avoid inadvertent errors, there was no attempt to group officials where the differences between them were not obviously variations in spelling (e.g. *kandvar craṃlo* was not taken to be *kandvar cralo*). Different ranks (e.g. *taṃmrvac vala* [population, *corvée* inspectors] and *khloñ vala* [population, *corvée* chief] were not grouped together.

47 inscriptions with recorded immunities occur across 13 different provinces and about half of them are dated prior to the Sūryavarman I period of the 11th century. Immunities benefited the founders and their families, who held expectations that they would apply into the future. Thus, it would have been of paramount importance to inscribe these privileges onto stone. Inscriptions of royal foundations, located perhaps at significant distances from the centre — a Yaśovarman monastery inscription, Huei Thamo K. 362/ 889 and the Jayavarman VII hospital *stelæ* of 1186 CE — also refer to immunities for the resident personnel. Sedov at first argued (1967: 169) that not all temples received immunities, but in a later paper (1978: 123) that they did, and that non-temple communities provided most of the state service. Analysis of the epigraphy does not demonstrate that the majority of temples were immune from state service, nor does it identify the immediate source of the Khmer state's revenue.

The inscriptions record immunities up until the second half of the 11th century. Figure 35 illustrates the frequency by date of inscriptions mentioning immunities and the number of non-royal inscriptions.[142] There were only two possible occurrences in the Pre-Angkorian period, one (K. 44/ 674) seeming to forbid an annual tax and the other (K. 940/ 7th c.) to declare that those who tax the salt which is to be moved from (or to) certain sanctuaries are to be punished. In both cases, the word *ckop* (to levy a tax), is used. The two references, both thought to come from the reign of Jayavarman I, support other evidence suggesting this ruler was 'reorganising and centralising control of land and wealth' (Vickery 1998: 294-5). Forty-seven inscriptions from the Angkorian period record immunities, almost all of them after 900 CE. After 1082 CE, there were no more documented immunities for private foundations. To test whether the decline in the number of immunities from the late 11th century is real or apparent, we need to compare the proportion of inscriptions with immunities for the two periods before and after 1050. A chi-squared test (Appendix A16.1) has returned a probability of less than 5 percent, indicating that the number of immunities declined after the mid 11th century independently of the decline in the number of inscriptions.

Although immunities were no longer recorded, royal involvement in land matters, such as grants and permission to purchase land, and the establishment of new non-royal foundations continued (though without lengthy histories of land ownership). This is demonstrated in Figure 36. The number of instances of royal involvement appears to decrease, but this may only be so because the number of inscriptions has decreased too. However, a chi-squared test (Appendix A16.2) has returned a result of $p$ = 7.2%, indicating that there is an appreciable likelihood that the royal involvement in land matters reduced after 1050 CE, independently of the reduction in the number of inscriptions.

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[142] Inscriptions dated post 1350 and outside the sphere of Khmer rule at that stage (in present day Thailand) were eliminated by this process.

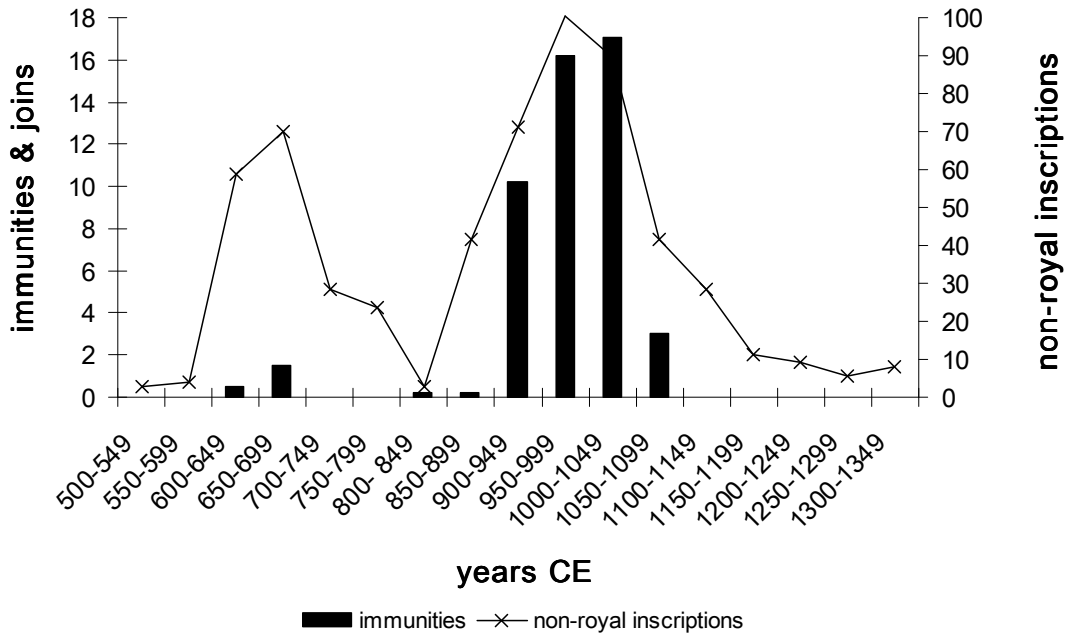


Figure 35 Distribution of immunities and non-royal inscriptions

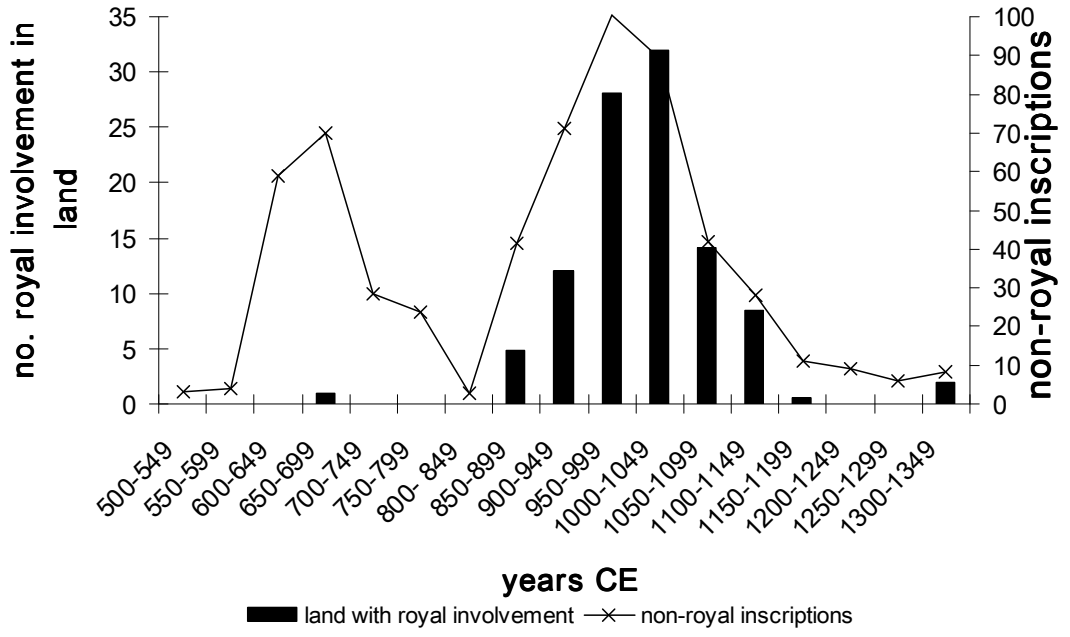


Figure 36 Royal involvement in land matters and non-royal inscriptions

The absence of immunities from the late 11th century does not correspond to changes to the classes of officials who were associated with taxation and other levies up to this period. Figure

37 illustrates the continuity over time of 19 officials and authorities mentioned more than once in connection with some kind of levying or immunity. Dates are from the minimum end date of the earliest inscription to the maximum end date of the latest one. Some titles persist after mentions of immunities cease, and these officials continue to perform at least non-fiscal tasks. After 1080, Sūryavarman's line was replaced by a new ruling group, the Mahīdharapura dynasty, which instituted social and administrative changes with seemingly greater central controls (Vickery 2005: 4-5). Some officials, notably those claiming descent from Jayavarman II and his followers, lost their status titles or saw them become less important than previously (Vickery 2002: 82-3; 97-100). The apparent disappearance of immunities might be understood in light of such organisational changes. The latest immunities are recorded in K. 391/ 1082 at Nom Van, in an order by the new king, Jayavarman VI and in the same region of the Upper Mun valley as his family seat. The king himself may have been associated with the hermitages concerned in this gesture of local support.

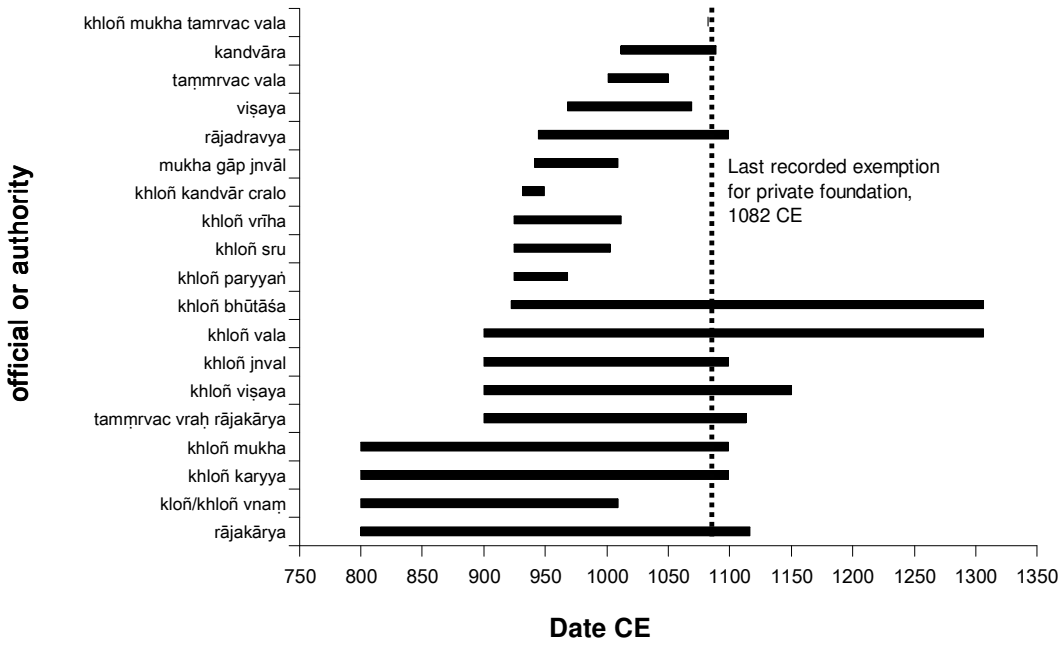


Figure 37 Date ranges for officials and authorities involved in tax or other levies.

## 8.4 Joined foundations

From the Pre-Angkorian era, a feature of a number of the inscriptions is a declaration that religious foundations are to be linked. The joining is usually couched in religious terms, but

often seems to describe sharing incomes or administrations. Vickery (1998: 155-8) stresses that the various terms used to express joining are not adequately distinguished in dictionaries and translations. This applies as much to the Angkorian terminology as to the Pre-Angkorian, which was the focus of Vickery's research. The expressions (Table 13) are variously translated as joining the means of subsistence, property, or revenues, or joining for common enjoyment, or rendering the gods co-participant.

In Pre-Angkorian inscriptions, the joining expressions do not specify personnel, so it is not clear if the shared resources include temple servants. In the Angkorian period, different terminology was used to describe the arrangements for linking (*saṃ/ psaṃ*) foundations. The expressions *saṃ paribhoga* and *upabhoga* (sharing use, enjoyment, possession, means of subsistence) of the Pre-Angkorian period are absent from the Angkorian inscriptions, while *miśrabhoga* (glossed variously as co-participant; resources shared; domains joined) persists, though seemingly only in Sanskrit texts. Forty percent of the joins are of personnel (variations of *saṃ gaṇa*). In the Angkorian period, whole communities appear to be treated as assignable resources in ways not apparent before the 9th century. This is first seen in the 9th century Roluos inscriptions, where among the temple workers are people in territorial groups at times from localities relatively far from Roluos (Vickery 1999a: 49).

The expression *saṃ mūla* (the joining of wealth or fortunes) is found only once, in K. 380/ 1049, referring to the joining of foundations.[143] Here the join is initiated by the ruler, who appears to be amalgamating ('the people of') his hermitage with the god of Prah Vihar. The expression *saṃ/ psaṃ siddhāyata,* which is translated as 'to join the exclusive right', may mean that the lands, resources and/or management of the foundation are henceforth to come under a single jurisdiction. In two inscriptions, we find both Sanskrit and Khmer expressions for joining. In K. 842, both *miśrabhoga* (Sanskrit) and *ta ti phsaṃ* (Khmer), meaning literally 'the whole', or 'all taken together' are written. Inscription K. 256 uses the expression *miśrIbhāvitabhoga* (? joint use) in the Sanskrit, but *saṃ gaṇa* (to join the personnel) in the Khmer part of the text.

[143] In the two texts, K. 956/910 and K. 230/1026, *saṃ mūla* amalgamations refer to the consolidation of resources within families, without reference to any foundation.

| SUGGESTED CONCEPT | PRE ANGKOR | ANGKOR |
|---|---|---|
| co-participant; sharing revenues; goods shared in common; means of subsistence shared; shared use, enjoyment, possession | *saṃ paribhoga* (K. 600/ 611; K. 926/ 624; K. 137/ 7th c.; K. 426/ 7th c.; K. 582/ 693; K. 904/ 713; Ka.10/ 7th c.; K. 51/ 7th c; K. 163/ 7th–8th c.)<br>*psaṃ paribhoga* (K. 818/ 7th c.; K. 561/ 681; K. 155/ 7th–8th c.;)<br>*saparibhoga* (K. 6/ 7th–8th c.) | |
| co-participant; joint use; joined domains | *saṃ miśrabhoga* (K. 563/ 7th c.);<br>***miśraṃ* (K. 561/ 681);**<br>*miśrabhoga* (K. 728/ 8th c.);<br>K. 415/ 977 [Pre-Angkorian?] | ***miśrabhoga* (K. 842/ 968; K. 92/ 1028; K. 620/ 10th c);**<br>***miśrīkṛ* (K. 669/ 972)**<br>***miśrībhāvitabhoga* (K. 256/ 984)** |
| means of subsistence joined; revenues joined; shared use, enjoyment, possession | *ekatvam uphaboghataḥ* (493/ 657)<br>*psaṃ upabhoga* (K. 127/ 683) | |
| joined: c.f. *saṃ* | *smaṃ* (K. 44/ 674) | |
| joining of personnel (lit. group) (sic K. 650 & K. 659, where translated as 'joining of goods') | | *saṃ gaṇa* (K. 99/ 922; K. 165/ 957; K. 957/ 941; K. 659/ 968; K. 842/ 968; K. 257/994; K. 256/ 984; K. 56/ 10th c.; K. 89/ 1002; K. 232/ 1009)<br>*phsaṃ gañña* K. 1087/ 937; K. 650/ 1001)<br>*sagaṇa* (K. 212/ 1027) |
| exclusive right to or use of [goods] joined | | *saṃ siddhāyata* (K. 832/ 910)<br>*saṃ siddhāya* (K. 999/ 11th c.)<br>*psaṃ siddhāya* (K. 1151/ 942)<br>*phsaṃ siddhāya* (K. 605/ 10th c.)<br>*phsaṃ siddhāyata* (K. 831/ 968) |
| shared property or wealth | | *saṃ dhana* (K. 164/ 922) |
| joined goods, property or fortune | | *saṃ mūla* (K. 380/ 1049) |
| incorporated into the domain | | *leṅ jā āsana* (K. 352/ 10th c.) |
| joining foundations: i.e. 'all taken together' | | *phoṅ ta ti phsaṃ* (K. 842/ 968) |
| provision of supplies joined | | *caṃnāṃ saṃ* (K. 258/ 1087) |

Table 13 Expressions used to indicate joining of foundations. Underline indicates joining expression in both Sanskrit and Khmer part of text. Sanskrit texts are in bold.

The distribution of joins over time may be seen in Figure 38. This distribution is compared with the distribution of immunities seen in Figure 35. As with immunities, there is a sharp decline after the mid 11th century. The last dated inscription referring to a join is K. 258/ 1087, although the undated 11th century inscription, K. 999, could be a little later in age. A chi-squared test ($p$ = 18%) did not show that the decline in the number of joins after about 1050 CE was independent of the decline in the number of inscriptions. The calculations are given in Appendix A16.3. If the practice of joining foundations continued after the mid 11th century, this would suggest that in addition to benefiting the founders, they served an important, perhaps symbolic function for the state.

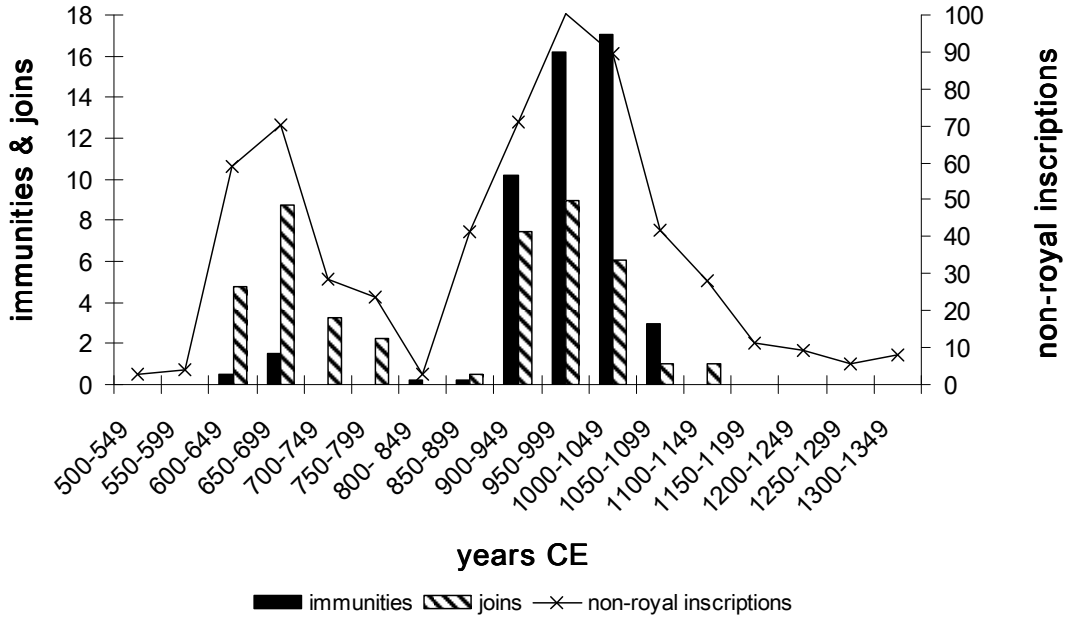


Figure 38 Distribution of immunities, joins and non-royal inscriptions

Table 14 documents the locations and names of all identified joined Angkorian period temples and their deities, together with the inscriptions and joining expressions which refer to those amalgamations. A few inscription sites have no joining terms but evidence for some linkage is indicated and noted in the Comment column (e.g. reference to taxes paid or works to be completed). Pre-Angkorian joined foundations are not included in this table, since the locations of the gods are not identified other than from inscription sites and the relevant deities have already been discussed by Vickery (1998: 155).

| SITE | K No. | DATE | JOINING GOD | JOIN EXPRESSION | JOINED GOD | SITE OF JOINED GOD | COMMENT |
|---|---|---|---|---|---|---|---|
| Inscription of Musée de Brest | K. 415 | 877 Pre-Angkor? | VKA[144] Śri Vindhyeśvara | *miśrabhoga* | ashram of Vraḥ Kaṃsteṅ āñ (god?) | | Inscription probably Pre-Angkorian |
| Prasat Tasar Sdam (Jayakṣetra) | K. 832 | 910 | Jayamāheśvari or Kanloṅ *kaṃmrateṅ añ* | *saṃ siddhāyata* | | -pattana | |
| Tuol Pei | K. 164 | 922 | | *saṃ dhana* | | | Foundation's goods joined with those of site |
| Coṅ Aṅ | K. 99 | 922 | Tribhuvanaikanātha (at Jeṅ Oṅ) | *saṃ gaṇa* | VKA Śri Campeśvara | Kok Po | Supplies specified |
| Angkor Thom (W of W gate) | K. 605 | 900-999 | Siddhāya(tana?) or (?) *psaṃ siddhāya* | *phsaṃ siddhāya* | [v]raḥ kamrateṅ] añ Liṅgapūra | | |
| Sdok Kak Thom | K. 1087 | 937 | VKA Śivaliṅga | *phsaṃ gaṇa* | VKA Parameśvara | | |
| Nong P'ang P'uey | K. 957 | 941 | | *saṃ gaṇa* | VKA jagat Liṅgapura / *kaṃmrateṅ añ jagat* | | |
| Unknown (Pracin(buri) (Siam) | K. 1151 | 942 | VKA Śivaliṅga (at Kanraṅ) | *psaṃ siddhāya* | VKA jagat ta rājya | | Exclusive right of god joined to god of kingdom |
| Thvar Kdei | K. 165 | 957 | VKA Śrī Campeśvara (land of DvāravatI) | *saṃ gaṇa* | VKA Śrl Campeśvara | | Two different gods Campeśvara |
| Bantay Srei (Iśvarapura) | K. 842 | 968 | VKA Śri Tribhuvanamaheśvara (Khmer) | *phoṅ ta si phsaṃ* (Khmer) | VKA Śrl Bhadreśvara | *anrāy* of Liṅgapura | Sanskrit identical to K. 620 (Sek Ta Tuy) and K. 662 (Trapan Khyan). Annual offering to Bhadreśvara. |
| | | | *Liṅgam idaṃ* Śaiva (Sanskrit) | *miśrabhoga* (Sk) | Śrl Bhadreśvara | | |
| O Romduol | K659 | 968 | VKA Śivalinga | *saṃ gaṇa* | Kamrateṅ jagat Liṅgapūra | | |
| Tuol Kul | K. 831 | 968 | VKA Śivaliṅga ? | *phsaṃ siddhāyata* | VKA Jagat Liṅgapūra | | Specified annual provisions to go to Liṅgapura |

Table 14 Inscriptions, joins and dates (century indicated for undated texts).

[144] VKA: *vraḥ kamratāṅ añ*

| SITE | K No. | DATE | JOINING GOD | JOIN EXPRESSION | JOINED GOD | SITE OF JOINED GOD | COMMENT |
|---|---|---|---|---|---|---|---|
| Prasat Thnal Chuk | K. 350 | 944-968 | The cell of Śāntipada (unknown location) | | Kamrateṅ Jagat Liṅgapura | | Founder and descendants to officiate at linked (?) temple. Daily offering of rice to Liṅgapura. |
| Prasat Kantop (Rudrapada) | K. 352 | 944-968 | VKA Śivaliṅga | *leṅ jā āsana* | VKA Śivapāda | Śivapāda E: Neak Buos | Offering of 5 liḥ rice daily & cook to go to Śivapada. |
| Prasat Ballang (Prei Ven) | K. 56 | 944-968 | VKA at Stuk Veṅ | *saṃ gaṇa* | Kamsteṅ Jagat Piṅ Thmo | | Servants and offerings specified |
| Prasat Komphus at Vrai Gmum (Kh) or Madhuvana/ Madhukānana (Sk) | K. 669 | 972 | Triad of gods dedicated to Bhadreśvara | *miśrlkṛ* (Sk) | | Prah Einkosei (Dvijendrapura) | Co-participant with Madhukanāna (Einkosei K663). Monthly offering to latter. |
| Sek Ta Tuy (Vnam Vrāhmaṇa) | K. 620 | 900-999 | Liṅga of Iśvara (?) | *miśrabhoga* (Sk) | VKA Tribhuvanamaheśvara | Bantay Srei | See K. 842 |
| Prasat Trapan Khyan (Caṃpriḥ) | K. 662 | 900-999 | Liṅga of Iśvara (?) | *miśrabhoga* (Sk) | VKA Tribhuvanamaheśvara | Bantay Srei | See K. 842 |
| Kok Po (Śvetadvīpa) | K. 256 | 984 (not insc. date) | Śvetadvīpa | *miśrlbhāvitabhoga* (Sk) | Śrī Campeśvara | Kok Po | |
| | | | VKA Śvetadvīpa | *saṃ gaṇa* (Kh) | VKA Śrl Campeśvara (Viṣṇu) | | |
| Prasat Car | K. 257 | 994 | VKA Śivaliṅga, VKA Parameśvara, VKA Bhagavati. | *saṃ gaṇa* | Kamrateṅ jagat Śrl Bhadreśvara | anrāy Liṅgapura | |
| | | | VKA Nārāyaṅa | *saṃ gaṇa* | VKA Campeśvara | Prasat Kok Po(?) | VKA images are of relatives |
| | | | Śivaliṅga, | *saṃ gaṇa* | Liṅgapura | | |
| | | | Śivaliṅga, | *saṃ gaṇa* | Kamrateṅ jagat Liṅgapura | | |
| | | | Śivaliṅga, | *saṃ gaṇa* | Liṅgapura | | |

Table 14 Inscriptions, joins and dates (cont.)

| SITE | K No. | DATE | JOINING GOD | JOIN EXPRESSION | JOINED GOD | SITE OF JOINED GOD | COMMENT |
|---|---|---|---|---|---|---|---|
| Prah That Prah Srei | K. 650 | 1001 | VKA Śivaliṅga | *psaṃ gaṇa* | Kamrateṅ jagat Rṅāl | | Annual offering of rice to Rṅāl. |
| Prah Nan | K. 89 | 1002 | Vijayeśvara | *saṃ gaṇa* | Kamrateṅ jagat Liṅgapura | | Personnel of one of the lands, Vijayeśvara, joined to those of KJ Liṅgapura. |
| Phnom Sanke Kon | K. 232 | 1009 | VKA Samaravīravarmasvāmi; VKA Samaravīravarmeśvara; *Kanloṅ kaṃmrateṅ añ* Samaravīrarmajananīśvarī | *saṃ gaṇa* | Kamrateṅ jagat Kanloṅ Ruṅ | Ph. Sanke Kon(?) or Tap Siem(?) | Gods (at Pr Tap Siem ?) joined to Kanloṅ Ruṅ (at Ph Sanke Kon ?). Supplies and *khñuṃ* to the latter. Images are father of founders. |
| K'ok Cen | K. 999 | 1000-1099 | Unnamed (pl). Inscription to be placed in Sādhupāli | *saṃ siddhāya* | Kamrateṅ jagat Liṅgapuri | | Offering of white rice. |
| Tā Nen | K. 212 | 1027 | VKA Śivaliṅga | *sagaṇa* | Kamrateṅ jagat Śri Jayakṣetra | Vat Baset | |
| Kuk Prin Crum (at Vrai Vyak) | K. 92 | 1028 | Liṅga of Iśa | *miśrabhoga* (Sk) | Śrī Iśānthatīrtheśvara | | Annual offering |
| Prah Vihar | K. 380 | 1049 | People of Sūryavarman's hermitages | *saṃ mūla* | Kamrateṅ jagat Śri Śikhariśvara | | Hermitages people joined with god Śikhariśvara (previously Bhadreśvara of Liṅgapura). |
| Samron | K. 258 | 1087 | Vraḥ Śivaliṅga | *caṃnāṃ saṃ* | Śiva Yogiśvarāśrama | | Date not latest date of inscription. |

Table 14 Inscriptions, joins and dates (cont.)

### 8.4.1 Pragmatic relationships between joined foundations

Vickery (1998: 155) considers the Pre-Angkorian period practice of joining foundations as 'superficially religious [though with] apparent economic, and possibly political, significance'. Hall (1985: 154) regards the joining of foundations as a strategy to consolidate resources, which benefited the founders and 'ultimately tended to limit the economic resources of rivals'.

The inscriptions indicate that rulers became increasing involved in the amalgamations, which strengthened the links between the centre and the religious foundations. Prior to the 9th century, the donors of land to foundations may have maintained certain rights over the land and its inhabitants, while the foundation received much of the production. Income from the foundations was redistributed in ways that ultimately consolidated resources and enhanced the social and political power of the elite donor families (Hall 1985: 150). A feature of this local consolidation of people and resources was the joining together of gods in which some of the income was moved from one temple to another or their administrations were joined (1985: 151). The largest number of Pre-Angkorian inscriptions with joins is from the reign of Jayavarman I (second half of 7th c.) and while earlier joins are apparently without royal involvement, those of Jayavarman show royal intervention, including prohibiting the joining of foundations in K. 44/ 674 and K. 137/ 7th c. This greater involvement in temple affairs is seen as evidence of Jayavarman's increased authority (Wolters 1974: 383; Vickery 1998: 367-8). Angkor-period inscriptions indicate that the rulers had still greater power over land allocation and transfers, with amalgamations requiring royal approval (Ricklefs 1967: 415) or, according to Hall (1985: 154), being 'closely supervised in order to limit the growth of the regional elite's resources'.

To ascertain if the joins had an economic purpose, the distances between some joined foundations have been compared. The few sites of joined foundations which can be identified with some certainty were plotted using GIS, and the distances between them calculated. Table 15 shows the distances between linked temple sites, varying between 7 and 84 km. The distance between Prasat Neak Buos and its linked foundation at Prasat Kantop, around 7 km, could have been covered easily in a single day. The 22 to 35 km, from Banteay Srei and Vat Baset to their linked temples, would have taken longer, since around 20 km per day might have been travelled on foot or buffalo. The 84 km between Prah Einkosei and Prasat Komphus may have required two to three days. Certainly, non-perishable goods could be moved long distances, but it would not have been practical to relocate workers too frequently. It is likely that the 120 *khñuṃ* who produced the rice and honey for Prah Einkosei would have been based at Prasat Komphus, and the produce transported. These distances are not so great as to exclude economic reasons for the linkages.

| Joining foundations | Joined foundations | Distance (km) |
|---|---|---|
| Prah Einkosei | Prasat Komphus (K. 669/ 972) | 84 |
| Banteay Srei | Prasat Sek Ta Tuy (K. 620/ 10th c.)<br>Prasat Trapan Khyan | 22<br>30 |
| Vat Baset | Ta Nen (K. 212/ 1027) | 35 |
| Prasat Neak Buos | Prasat Kantop (K. 352/`968) | 7 |

Table 15 Distances between linked temples

Because the majority of joining foundations are known only by the name of their deity, we can rarely discern any relationships between the foundations or their founders which might suggest a reason for amalgamating. Indeed, the joined groups of Prah Einkosei/ Prasat Komphus and Banteay Srei/ Sek Ta Tuy/ Trapan Khyan do have their founders in common, and in K. 258/ 1087 the provision of supplies for a *Śivalinga* erected by a pupil is shared with the foundation of his teacher. However, with the foundations linked to Prasat Neak Buos and Vat Baset, no such relationship can be discerned from the texts.

Although the evidence for relational or geographical proximity between amalgamated foundations is inconclusive, some of the expressions, such as *saṃ gaṇa*, the joining of personnel, suggest a motive of economising on resources. Another possibility, and this would have had potential economic benefits as well, is that amalgamating foundations could have been politically expedient, by demonstrating allegiance to allies or potential allies through the recognition of their cults.

### 8.4.2 A hierarchy of gods?

The idea that joined foundation deities were linked hierarchically through the temples from small village temples to large royal temples will be examined here.

In many instances, there is a fairly clear link to the throne. For example, the founder of both K. 263/ 984 (Prah Einkosei) and K. 669/ 972 (Prasat Komphus) was Divākarabha, son-in-law of Rājendravarman; while K. 620/ 10th c. (Sek Ta Tuy) and K. 662/ 11th c. (Prasat Trapan Khyan), founded by Yajñavarāha, Jayavarman V's *guru*, are both *miśrabhoga* with the god Tribhuvanamaheśvara at Bantay Srei, founded by Yajñavarāha and his brother. Prasat Neak Buos had long-standing royal associations. It is said to have been founded by Jayavarman I in the late 7th century and was added to in the 10th and 11th centuries under Jayavarman V and Sūryavarman I (Briggs 1999[1951]: 77; 139; 160). In K. 380/ 1049, the join was initiated by king Sūryavarman I (Cœdès 1954: 268), and the hermitage populations were joined to the god at Prah Vihar, a royal temple founded by Yaśovarman I. In K. 1151/ 942, the amalgamation

was with a royal god (*VKA jagat ta rājya*). However, it is likely that most Angkorian founders were allied to the centre, given that they would have all owed their positions to royal favour. Indeed, the founders initiating joins were typical of all founders and donors in the inscriptions – some royal relatives, some close counsellors of the rulers and several people of high status but unknown association.

A further proposal is that the linking was by a junior to a senior god, and, in an extension of this, that clergy from a smaller temple were given rights in the central temple (Sedov 1967: 183; 1978: 122; Hall 1985: 153; 167; Jacques 1986: 332). Hall (1985: 151) asserts that through *miśrabhoga* etc, there developed 'a pattern of subordination of one local deity to another as well as one local temple to another', which allowed some control over local ritual. Khmer temples are seen in a hierarchy through which the state's resources were redistributed between the villages and their temples, the regional temples and the central temples (1985: 166-7). Sedov (1967: 191-2; 1969: 338; 1978: 122) identifies a number of 10th–11th century so-called 'central' temples, and in some cases their smaller linked temples and deities. He describes the central temples as 'semi-state' because they were controlled by elite families with links to the rulers. The central temples[145] (see also Appendix 2) were KJ Bhadreśvara at Liṅgapura (Vat Phu ?), KA Cāmpeśvara (Kok Po), Śikhareśvara? (Preah Vihear), KJ Chpar Ransi (?), Śivapāda Pūrva (Neak Buos), KJ Kanloṅ Run (Phnom Rung), KJ Śri Jayakṣetra (Baset, Battambang), Vnaṃ Ruṅ (Phnom Rung), Raṇḍāparvateśvara (?), Vraḥ Thkval (?), Śri Iśānatirtheśvara (?), ashram of the Vraḥ Kamsteṅ Añ and Vnaṃ Kantal (Phnom Bakhen[146]). However, Hall's hypothesis cannot be demonstrated, as a broad hierarchical structure is not borne out by the epigraphy. Since many of the temples and foundations were unknown, it is not certain if one joined deities had seniority over the other. As well, the means of redistribution of resources have yet to be ascertained.

The only possible three-level hierarchy which has been found is indicated in Figure 39. Here, deities of five temples appear to be linked to the god Bhadreśvara. In both K. 257/ 994, where this deity is titled *kamrateṅ jagat* (*KJ*) and K. 842/ 968, where it has the title *vraḥ kamratāṅ añ* (*VKA*), it is located in *anrāy* Liṅgapura. The inscription K. 958/ 947 refers to gifts to the god Bhadreśvara at Liṅgapura, but it is not clear that foundations are being joined here.[147] Provided this is the one god Bhadreśvara, we may be looking at a hierarchical arrangement of gods. However, there are many other mentions of a god Bhadreśvara, including a KJ at Vat

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[145] The 'central temples' were translated from the Russian text by Michael Vickery (2006 pers. comm.).

[146] Vnam Kantal was identified as Phnom Bakhen in Cœdès 1911: 396-398, and Goloubew 1933: 319–344 (Martin Polkinghorne 2008, pers. comm.)

[147] The reference in K. 958/ 947 may not indicate joined foundations. Cœdès' translation (1964: 145), from the French, reads, 'this good work (an *āśrama*) was dedicated to Śiva Bhadreśvara at Liṅgapura in participation (*miśrabhoga*) with his family.'

P'hu, mentioned in K. 383/ 1119, another, a VKA, in K. 175/ 978 and one, untitled, in K. 158/ 1003 — but linkages to these are unknown. This issue is even more complex for Liṅgapura, since it occurs variously as localities, sanctuaries or deities and there is not sufficient information to localise most of them (Cœdès 1951: 97). Twenty-six Khmer language inscriptions mentioning a Liṅgapura have been found (SEAlang Classics 2007; Sakamoto n.d.). This one instance alone does not demonstrate conclusively that many or most Angkorian period foundations were linked through a hierarchy of gods to the centre.

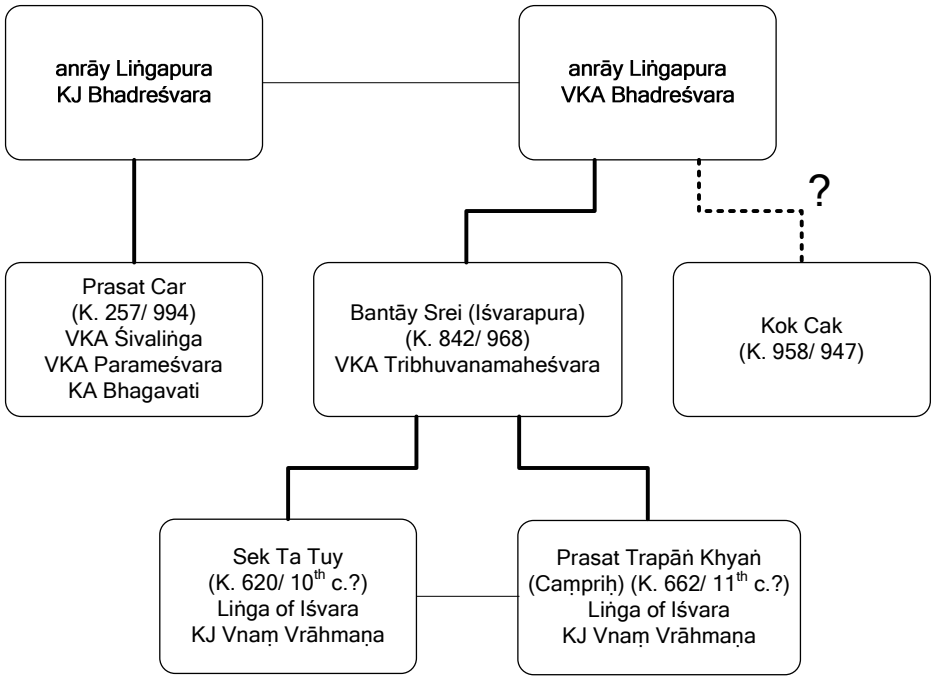


Figure 39 A possible temple hierarchy linked to the god Bhadreśvara

The sharing of resources between foundations could represent arrangements which were unrelated to any hierarchy. However, the titles of the deities involved might suggest otherwise. The significance of the different indigenous titles of the gods has been discussed by Cœdès (1961), Jacques (1985) and more recently by Vickery (1998: 140-46; 424-5), according to whom kings and gods had the title *VKA* in the Pre-Angkor period. Both the joining and joined[148] gods were almost always titled *VKA* (ibid., 156-57). In the Angkorian period, *kamrateṅ jagat* (*KJ*) was used mostly for local gods and spirits (and for late Angkorian statues of deified dead people), while *vraḥ kamratāṅ añ* (*VKA*) applied to Indian gods, kings and high

[148] In the following discussion, the term 'joined' denotes a foundation to which the foundation of the cited inscription (the 'joining foundation') has been amalgamated.

officials. The title *KJ* may have developed in the 10th century out of the title *VKA,* held by local protective deities of the Pre-Angkorian period[149] (ibid., 146). The titles of the linked gods of the Angkorian period generally conform to the custom of the relevant period. In addition, some commonalities can be discerned in the 26 recorded Angkorian period joins:

- Fourteen joining deities are designated Śivaliṅga*,* the co-founded K. 620 and K. 662 being named *liṅga* of Iśvara (the great lord or Śiva).
- Some VKA deities of joining foundations, for example in K. 257/ 979 and K. 232/ 1009, are images of relatives of the founders.
- There are 14 inscriptions where the joined gods appear to be indigenous deities. Their titles contain *jagat* and they often have names of localities or local deities. No titles of joining gods are designated *jagat*.
- In 10 inscriptions, joined gods are named [the god of?] Liṅgapura (seven with *jagat* titles) or, in three cases, are at a place called Liṅgapura.

Whether joined gods (e.g. Liṅgapura deities with indigenous titles) had higher status than the joining gods (mostly Śivaliṅga) in a hierarchy cannot be ascertained from this, but the trends do suggest some significance in the distinction between the joining and joined deities, which relates to whether they had indigenous or introduced Indianised names.

Maxwell (2007: 112-117) has recently argued that the joining of gods in Pre-Angkorian inscriptions symbolised the installation of a new cult-object in the domain of an older one, i.e. the linking of old and new forms of a particular deity. He identifies this practice in inscription K. 493/ 657, where Rudra becomes linked to Śiva Amrātakeśvara and in K. 563/ 7th c. where VKA Nārāyana (Viṣṇu) is joined to Kapilavāsudeva (also Viṣṇu). The titles of the gods of the Pre-Angkorian pantheon, having either indigenous or Indian sounding names, the latter sometimes being translations of Khmer names, signify their sacredness within a structured hierarchy, which has also been identified by Vickery (Section 3.4.1). This hierarchy was a modified version of, and ran parallel to, that existing for the titles of Khmer elites, i.e. *vraḥ kamratāṅ añ* or *kpoñ kamratāṅ añ* (*kamratāṅ* derived from *mratāṅ* and *kpoñ* from *poñ*). Deities with the Hindu names of Śiva, Viṣṇu or Sarasvatī had been integrated into Khmer culture and likely conveyed different meanings to the Khmer than to Indians. Maxwell suggests a process of acculturation, in which the spirits of the indigenous cults entered the images of the new religions, 'adding a new dimension to their original identities' (ibid., 120-121).[150] According to Maxwell, the economic aspect of joining, i.e. the merging of produce, may foreshadow the

[149] The titles *vraḥ kamratāṅ añ jagat* and *kaṃsteṅ jagat* appear to have been intermediate forms (Vickery 1998: 146).

[150] Vickery (1998: 147) argues it is not possible to determine the meaning of old and young gods. He considers that they both were local deities 'gradually Sanskritized'.

later Theravada practice in which an older image confers legitimacy on a younger one and shares its protective spirits with it (ibid., 119).[151]

Angkorian period amalgamations appear in a pattern akin to what is described by Maxwell, in that 'new' gods or deities with the Indian name Śiva are merged with 'old' gods or deities having indigenous titles and names. The inscriptions mentioning the amalgamations seem to be those of 'new' deities, which could point to the greater importance of the 'old' ones. Maxwell's explanation for joining requires further substantiation from more inscriptions than the Pre-Angkorian instances. His hypotheses should also be investigated with data from inscriptions of the 10th and 11th centuries, which record several amalgamations.

Although some expressions for joining seem to suggest practical reasons for the amalgamations, Maxwell's conception of joint deities in the Pre-Angkorian period indicates that the religious symbolism of the practice was important, at least originally. By the Angkorian period, the texts indicate there were pragmatic reasons. Firstly, rulers often authorised the joins; second, some of the better understood expressions such as *saṃ gaṇa*, (joining of personnel) and *sam mūla* (joining of goods or property) appear to be referring to the sharing of resources; and third, some of the joins are between two foundations established by a single person or by two associates. These suggest that, even if the Pre-Angkorian joins had been more symbolic gestures, the institution changed over time to something having more pragmatic objectives. Nevertheless, the religious symbolism could have continued and this is the point made by Maxwell, who sees a continuity of this in the acknowledgment of the 'old gods' in the short inscriptions of the Angkor's Bayon temple.

In other societies, indigenous and introduced cults have been integrated in the course of legitimising the authority of ruling groups, and sacred symbols are ordered hierarchically (e.g. Shifferd 1996: 28). Pre-Angkorian ruling groups have been described as part of a single hierarchy uniting them with deities and sharing their titles (Section 3.4.1). A network or elaborate hierarchy of linked deities employed as a vehicle for transmitting state ideologies — or indeed resources — has not been found in other societies in Asia.[152] If additional evidence of the relationship between joining and joined deities is established from the Angkorian

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[151] Maxwell argues that older protective spirits may inhabit a newer host Buddhist image. The short inscriptions found at the shrines in the Bayon and other Jayavarman VII temples differ from the public statements of the formal inscriptions. The texts, which are the names for images, identify the human personality on three levels: as a social being; as an image of a person's spirit (*rupa*); and as a statue of that person's image as a deity (Maxwell, 2007: 105-108).

[152] Maxwell describes a somewhat akin practice in Himachal Prasesh in the western Himalaya of attributing masks (*mohras*) with dual identities, which 'flexibly' integrates the indigenous religion with Hinduism in this area. The masks mediate as sacred symbols across both religions, while maintaining the separate identity of the cults. The deity to whose identity the *mohas* contribute is 'infinitely renewable and the interchangeability of old and new masks facilitates variations in the components of the divine identity…' (Maxwell 2007a).

inscriptions, the extent of the practice, and its religious, economic and political significance in the Khmer world would certainly warrant being investigated further.

### 8.4.3 Shared rituals and tribute to linked foundations

Another indication that rulers were keenly interested in foundations for promoting state ideology is the interest shown by Khmer kings in their management. There is much evidence that the rulers established and maintained a presence there. After having sanctioned a new foundation and perhaps provided some of its land (K. 178/ 994; K. 89/ 1002; K. 205/ 1089; K. 843/ 1025; K. 736/12th c.) and villages (K. 873/ 921; K. 235/1052; K. 263/984; K. 191/1110), they sometimes continued to make donations of servants or gifts (K. 55/ 628; K. 61/ 912; K 231/ 967; K. 571/ 11th c.; K. 353/ 1046), offerings to a god (K. 1073/ 925) or to promote the foundation cult (K. 380/ 1049; K. 568/ early 14th c.). This support for allied founders and their families could have also allowed the rulers some control over the foundations through the introduction of royal cults and the 'integration of indigenous folk traditions, symbols, and religious beliefs into a cult that was visibly concentrated at the centre' (Hall 1985: 159). In K. 1151/ 942, for example, a temple deity is joined to *VKA jagat ta rāja* (the god of the kingdom). It was a key feature of the Khmer state's political and economic integration in the *Temple Hierarchy model*.

Foundations could be expected to affirm their linkages through some material or symbolic gestures. While it is probable that linked foundations would have shared rituals, only a single example of this (K. 350/10th c.) is cited by Sedov (1963: 76), where the founder and his descendants are, by royal ordinance, given the right to officiate at Liṅgapura, at which 39 *khñuṃ* from Śāntipada are to supply 3 *liḥ* of rice per day (1.6 tonnes per year). Although the very act of providing offerings at a linked foundation could be regarded as participation in its rituals, there is no reference to joined foundations in this inscription. There are numerous examples of regular provisions for offerings from one foundation to a linked god. For example, K. 175/ 987 at Kok Rosei mentions 1 *thlvaṅ* of white rice to be offered annually at *KJ Liṅgapura*, as well as 1 *liḥ* of paddy to the Sacred Fire of *VKA ta rāja*. In K. 180/ 948, the king prescribes offerings, including 2 *prastha* of paddy with flowers and grass at Śrīśa, to be provided by servants of the founder and 2 *prastha* of rice at Keṭakī, foundation of the royal guru. These examples suggest that the linking of foundations may have been in fact more common than is indicated by the occurrence of expressions for joining in the texts.

The question of whether the shared resources were symbolic or pragmatic might be ascertained by examining the quantities that were transferred. Sedov (1967), using an average production per person of 270-280 kg of rice per year, has estimated that the tribute from small temples to larger, central ones was quite token or considerably less than the amount they produced. For K. 232/1009, Sedov (ibid., 184) notes that the contribution to the

'central' temple was 1 *khārikā* (90 kg) of white rice a year, as well as 89 servants (and 55 children) and only an 'almost symbolic' amount of these workers' production was passed across. Sedov did not consider whether these servants were to work exclusively or part time for the central temple, nor how much of the rice they produced contributed to the needs of the 'central temple' (ibid., 173-178). Sedov (1978: 122) later repeated the exercise, but possibly in recognition of these oversights, based his calculation on per capita consumption (150 kg per year). However, he came to a similar conclusion: that the tribute paid by small temples to larger, central ones amounted to an average of a mere 5.5 kg per member of the temple's average annual consumption. Nevertheless, if many foundations had transferred even small quantities of rice to a single linked foundation, the total amount received by the latter may have contributed appreciably to a large establishment.

Eight Angkorian period inscriptions mention quantities of supplies allocated to their co-joined temple. Four of these inscriptions also specify numbers of allocated rice-producing temple servants. Calculations for the production per average worker are made in Table 16, using Sedov's parameters, and the offerings to the co-joined temples are then converted into percentages of a producer's output. The results give values of between 0.4 percent and 15 percent, the latter rather greater than a symbolic amount. Calculations based on the producers' consumption obviously resulted in higher percentages, up to 28 percent. A further calculation of the number of people who could have been supported by the offering of rice gave between 0.6 and 18 people. The larger result suggests that Sedov's conclusion that the dues to the 'central' temple were token, cannot be taken as a general principle. However, there is little information on how much rice a foundation needed and what it was used for. As in South India, rice could have been offered to the gods, then reallocated to temples workers or sold (Stein 1984). These amounts suggest that the offerings were symbolic but also pragmatic.

| Foundation A | Foundation B | Supplies furnished to B from A | Personnel of A | offering as % of production at A | offering as % of consumption at A | People supported at B |
|---|---|---|---|---|---|---|
| VKA Śivaliṅga K. 232/ 1009 | KJ Kanloṅ Ruṅ | Annual: 1 *khārikā* (90 kg) white rice, 4 prastha oil, 2 *je* sesame, 2 *je* beans; 2 banners, 2 *yau* garments | 89 personnel | 0.4% | 1% | 0.6 |
| VKA Śivaliṅga K. 650/ 1001 | KJ Rṅāl. | Annual: 1 thlvaṅ (89.6 kg) white rice | 84 *khñum* and *aṃraḥ* | 0.4% | 1% | 0.6 |
| Tribhuvanaikanātha K. 99/ 922 | Śri Campeśvara | Annual: 6 *khārikā* (538 kg ) white rice, 8 *āḍhaka* melted butter, 6 pairs garments, 100 cows, 1 gold ewer | *khñum* for both fortnights: 247 | 1% | 1% | 3.6 |
| VKA Śivaliṅga K. 352/ 10th C. | VKA Śivapāda | Daily: 5 *liḥ* white rice (2738 kg annually) for sacrifice & cook | 105 *khñum* + chn. | 9% | 17% | 18.3 |
| Śāntipada K. 350/ 10th C. | KJ Liṅgapura | Daily: 3 *liḥ* rice (1643 kg per year) to Liṅgapura + ricefield to provide paddy. | *khñum vraḥ* for both fortnights: 39 + chn. | 15% | 28% | 11.0 |

Table 16 Rice offerings to joined foundation B as percentages of production and consumption of joining foundation A. Annual production is taken as 275 kg per person and annual consumption as 150 kg p.p.

## 8.5 Relationship between immunities and joins

The concurrent immunities and joins discussed in Sections 8.3 and 8.4 raise the possibility that joining gods and granting immunities were linked strategies used by the state for exerting influence. Several inscriptions record both the granting of immunities and the sanctioning of foundation amalgamations by rulers. According to Sedov (1978: 122), the joining took place subsequent to the foundations being granted exemptions from state impositions. However, the epigraphy does not suggest that one was a precursor to the other.

There are 49 inscriptions referring to immunities of some kind; 47 were from the Angkorian period and two from the Pre-Angkorian period. There were also 44 inscriptions with joins, of which 25 were Angkorian and 19 were Pre-Angkorian[153]. Of the Angkorian period inscriptions, 11 have both immunities and joins (Figure 40). These results point to a link between exemptions and joining. A Fisher Exact test (Appendix A16.4) shows that where a foundation has been granted immunities and has amalgamated with another foundation, there is less than

[153] Although dated 877 CE, the script of K. 415 is thought to be Pre-Angkorian (Cœdès 1953: 86).

a 1 percent probability that this is not by chance.[154] This strong correlation indicates that rulers granted both immunities and permission to amalgamate foundations in order to reward allies and to strengthen the bonds between the state and the foundations as a means of ideological control.

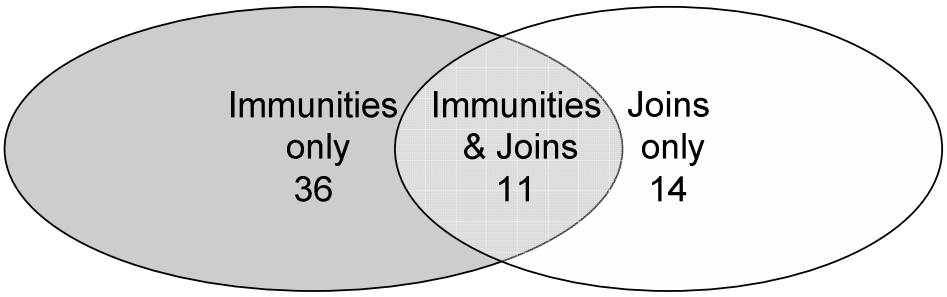


Figure 40 Co-occurrence of immunities and joins in Angkorian inscriptions

## 8.6 Royal merit

The dependence of founders on the continuing patronage of rulers can be inferred from the many references to the king and their practice of according him the merit for a new religious foundation. Angkorian rulers rarely interfered with the management of private foundations (Ricklefs 1967: 415). However, they were frequently asked to sanction land and other transactions. It was customary for inscriptions to at least name the ruling monarch and generally acknowledge his authority and generosity. In addition, the rulers' direct part in joining foundations is also apparent (Ricklefs 1967: 415; Hall 1985: 154). Of 25 non-royal Angkorian period inscriptions which record the joining of foundations, 17 (or 68 percent) also mentioned some role of the ruler in this.[155] If royal permission for joining foundations was required, it seems reasonable to suppose further that, as in the Pre-Angkorian period, the rulers sometimes might have refused permission for foundations to be joined (Hall 1985: 154).

Sometimes the founders offered their 'pious work' to the ruler as a royal foundation or transferred the merit for the foundation to him, to assure certain privileges such as the right for their families to manage the foundation, to continue to exploit the lands, and to gain immunities (Cœdès 1954: 242; Sahai 1977b:133). This is expressed quite explicitly in K. 450/10th c., where the founders, in return for their 'gift', request immunities from certain impositions and royal protection for the foundation. To these privileges might be added

[154] The Fisher Exact test has been used rather than the chi-squared test since the expected number of events with both immunities and joins is very small, and the chi-squared test may not be valid for this small number.

[155] Royal involvement in land transactions is seen in royal ordinances (*śāsana*) (thirteen), requests for the ruler's permission to join foundations/gods (four) or notification of the arrangement (one). In two instances, the request is followed by a *śāsana*.

permission to amalgamate foundations. Of 32 inscriptions (31 Angkorian) in which the ruler has been offered a share of the merit or 'given' the foundation as a royal foundation, there are 13 (12 Angkorian) inscriptions with either immunities or joins or both of these (Figure 41). A chi-squared test (Appendix A16.5) showed that there is less than a 1 percent probability that both offering merit to the king and receiving immunities for a foundation and/or permission to amalgamate was coincidental.

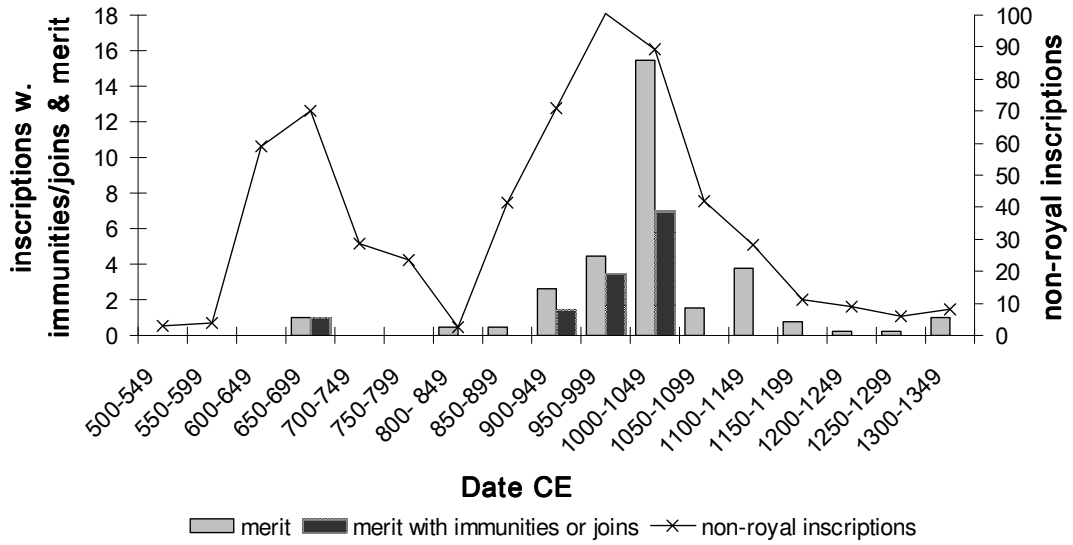


Figure 41 Distribution of royal merit with joins or immunities and non-royal inscriptions

The decline in inscriptions with joins from the mid 11th century (see Figure 35) suggests that from this time the amalgamations were no longer permitted or advantageous. Alternatively, it may have been deemed unnecessary to write about such matters, but it is relevant that the immunities appear to have ceased at about the same time as did the joins. Even so, the offering of merit continued (see Figure 41), indicating that at least from the second half of the 11th century, offering merit to the ruler was not exclusively the motive for securing immunities and permission to join foundations. Further work is required to appraise how these changes relate to other processes, such as the strengthening of central controls over the Khmer state.

## 8.7 Conclusion

The close association between temple and district officials suggests that the temples were a focus of local administration, and points to a relationship between ideological control and political control. While there is no evidence that the temple foundations themselves were responsible for collecting state revenues, the relationship between the elite families who administered the foundations and those working for the state bureaucracy would have

necessarily been close. We do not know how the administrative officials were paid. Two inscriptions however, show that state officials of the *kāryya* and the *rājakāryya* received regular sustenance from foundations, indicating that payments to and maintenance of an official may have been more than related. As a condition of their privileged positions, it is likely these officials passed a portion of their revenue to the centre directly or indirectly, or that their presence in regional areas was required to represent the power of the centre.

We know about the ubiquity of taxes and levies through the many references to immunities for the foundations. It is not known if communities or villages supplying the temples were automatically immune from taxation, *corvée* and other impositions. The declarations of Jayavarman VII on his hospital foundations *stelæ* that levies may not be imposed on them suggests that even royal agencies were liable to be imposed upon by administrative authorities.

In the 10th and 11th centuries, inscriptions were written predominantly by officials keen to show their genealogical credentials and claims to land ownership (Vickery, 1985). This was the period of the immunities and the amalgamations. From the late 11th century and up to Jayavarman VII, whose reign produced a large number of royal inscriptions and almost none by officials, inscriptions were still concerned with the listing of land, personnel and prices, but without the lengthy, complex histories of land ownership. The rulers were still involved in foundation and land matters, but immunities were no longer evident after 1082 CE. A significant number of officials with the same titles as before are seen in the inscriptions of the 12th century. They were obviously receiving revenue, but they seem not to be imposing on the foundations. Either the immunities no longer applied and the foundations were being taxed directly by the state, or the economic and political conditions may have altered to the extent that it was no longer necessary or even desirable to declare that certain activities were immune from imposts.

While interpretations of foundation amalgamations are problematic, and the intentions underlying the linkages are not declared, it would have been pragmatic for regional elites to consolidate resources in order to reduce costs and enhance their power base. With perhaps 40 per cent of the Angkorian period inscriptions with joins indicating the sharing of personnel between foundations, it is likely that amalgamations were in part economically motivated. Pooling of resources, particularly of personnel, probably applied to those foundations near each other. For example, the joined deities at Banteay Srei and Prasat Sek Ta Tuy were 22 km apart, a distance which could be covered on foot in one or two days. There was often a personal relationship between founders: shared offerings strengthened bonds between foundations and alliances between families — as in K. 258/ 1087 where the linkage is between the foundations of a pupil and his teacher. Additionally, given that permission was needed to join foundations, the amalgamations were also of some benefit to the founders. The high

correlation of joins with granted immunities suggests that the rulers were providing strong inducements for foundations to be established and that the state might benefit. Offering a foundation's merit to the ruler was likely more than a formality.

We must also be aware of the symbolic nature of the linkages. A hierarchy of gods linking village and royal temples might also have been the vehicle for transmitting royal cults and other ideology, as well as for exercising some royal control over disparate foundations and their communities. However, hierarchical relationships between joined gods are difficult to ascertain. To date — with the possible exception of a three-level hierarchy linked to the god Bhadreśvara in the 10th century — chains of joined foundations have not been identified. We also see that foundations having gods with Indianised titles tended to seek linkages with foundations whose gods had indigenous titles. This concurs with Maxwell's assessment of Pre-Angkorian amalgamations as 'old' gods conferring legitimacy on 'new' gods'. Further research is required to establish if this indicated pattern was ubiquitous.

The study found little substantive evidence that individual temples passed significant resources from smaller to central temples. Future analysis may demonstrate that many foundations were paying small quantities in tribute to a few larger ones, supporting the hypothesis of a hierarchy. On the other hand, the mention of resources collected by two royal temples directly from villages during the late 12th century does not refer to a hierarchy of temples. The commodities seem to have come directly from the villages. There is no other record of mobilisation on such a scale. The royal stores would have received state revenue, yet there were relatively insignificant quantities of provisions passed on to the royal foundations. There appears to be an anomaly between the percentages of rice coming to two royal temples: the Ta Prohm was receiving much less rice than was the Prah Khan. Prah Khan may have been the repository or clearing house for state requisitions. Certainly the organisation of support for the two temples seems to differ. The reporting of this distribution shows some complexity of organisation; but it does not point to a temple hierarchy through villages and small temples.

In other states, where wealthy and powerful individuals or institutions posed a threat, rulers took steps to curtail their activities (Section 4.2). In the Angkorian Empire, as has been proposed (Section 8.3), widespread tax immunities for the foundations in all probability placed a considerable burden on the state, as was the case in the Southeast Asian states of Java and Pagan. These immunities, which would have enriched and empowered some families, ceased some time after Sūryavarman I (1002-1050). The ending of this privilege may have been a means of curtailing the ambitions of potential rivals and maintaining state revenue. From a broader perspective, when we consider the maintenance of state revenue in terms of the rulers' strategies during the 11th century, then a decline in immunities can be appraised as a rebalancing of the effort away from ideological control and more towards political and

economic control. On the other hand, it is not certain that the foundation amalgamations ceased. If they continued, they would have been serving an important, perhaps symbolic function for the state.

There were fewer inscriptions in the period after the mid 11th century and up to the reign of Jayavarman VII (1181-1220). Despite the decline in immunities in the 11th century, the state still needed taxation revenue to function, and people may have sought to avoid providing it. Thus it is pragmatic to suppose that there were immunities in some form, though they may not have remained relevant to temple administration. In the Jayavarman VII Prah Khan inscription, the requisitioning of the large quantity of unsourced rice, which may be appraised as an unprecedented imposition by the centre, suggests that the supplies of resources to the centre were no longer sufficient. Questions of land and genealogy, important during much of the 10th and 11th centuries, were no longer what the inscriptions were concerned with. This may have been because some officials had become reduced in political and economic power after 1080 CE, or because immunities and permission to amalgamate foundations were no longer granted.

The economic and administrative interest shown by rulers in the foundations points to something more than material support for allies, indeed to the value of the foundations in maintaining ideological control. Royal cults could be introduced to local temples and linked to their deities, and political and economic matters of concern to the rulers masked by religious language and normalised. A structured relationship or even a hierarchy of gods is suggested by the titles and the offerings shared between joined deities. The temples do not appear as taxation resource collectors, fulfilling some of the function of the state, although the association between temple and state was certainly strong. The extent of the foundation linkages, shown here to have been both symbolic and practical, is yet to be determined.

The close relationships, indeed the interdependencies of the rulers, the officials, the regional elite and the religious foundations can be seen in:

- the temples as *foci* of local and state administration;
- the inducements to the elite for the establishment of foundations;
- the economic and ideological benefits of amalgamations of foundations;
- the likely removal of privileges from temple foundations in the late 11th century.

The inducements for establishing foundations imply a policy of ideological control through these institutions. The later removal of these inducements appears to signify an adjustment to the balance of political, economic and ideological modes of influence within the Khmer state. Such shifts have been seen in the asynchronous cycles of royal and non-royal inscription production noted in Chapter 6.

# 9 The political economy: a synthesis

> (CLXXVII) Within these foundations, may the men and the women including the Cāmpa and the Yavana with the Pukāṃ and the Rvañ,[156] numbering 306,372, may the villages numbering 13,500, may everything made of stone and wood which contributes to the divine service, may all this be preserved absolutely intact.
>
> (CLXXVIII) For these people attached to these foundations, may there be without exception each year 400,126 *khāri* of rice, considered as oblation to the gods; the lands, sources of revenue, attributed to these foundations, must not be used [for anything else]; and those who declare a greater revenue than is correct, frustrate the divine service.
>
> K. 908 (1186 CE)

## 9.1 Introduction: Angkor the empire

The above stanzas from the inscription of Jayavarman VII's Prah Khan temple at Angkor, requisitioning what has been interpreted as an annual supply of roughly 40 million kg of rice, demonstrate this ruler's capacity to mobilise substantial resources and to assert authority over a sizeable population, exemplifying the power of the Khmer Empire at the end of the 12th century CE. To have reached this point, the empire had to use existing processes and develop strategies to expand, extract wealth and administer its territories. In this chapter, the analyses of the political, economic and ideological processes will be considered in conjunction with the historical and comparative data, in order to highlight some key factors in sustaining the Khmer state.

The Khmer people had developed linguistic, economic and social structures long before they became 'Indianised'. Introduced ideas such as those brought from India, starting early in the 1st millennium, were integrated and adapted in ways that suited Khmer culture and distinguished it from others. Observers have noted features of pre-colonial and colonial period Cambodia which they envisage were developed from its cultural and geographic distinctiveness. Some portrayed Khmer society as conservative when compared to its neighbours, attributing this trait to antecedents stemming from the Angkorian period.

The elite of the Angkorian world are shown in this thesis to have been aware of and in contact with the outside world and Khmer society is seen to have had many traits in common with its neighbours. Despite the inward-looking impression created by its temple inscriptions, the Khmer Empire was not wholly self-reliant or isolated. The empire's purported weakness, its

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[156] According to Cœdès (1992: 165, n. 1) the Cāmpa were the Chams, and the Yavana the Annamites. The Pukāṃ or people of Pagan, were the Burmans. The Rvañ or Rbañ could not be identified.

disengagement from international trade, is demonstrably overstated. Despite its relative isolation, it had access to and managed trade routes. The evidence on economic activity from archaeology and the inscriptions clearly points to Angkor as belonging to a greater world system of trade, with the supporting processes that this implies – power structures, communications and commercial systems.

Many of Angkor's characteristics, such as its low level of monetisation, differed from those of analogous societies only in detail or by degree. Like other empires, it developed strategies to administer its various populations and to extract resources from its territories. This entailed compromises based on consideration of traditional socio-economic structures, geography and threats. Modern ideas of efficiency may not be appropriate as criteria for assessing a political economy such as that of Angkor. It may not be accurate to regard some features, such as the non-use of money, as being the most efficient for Angkor's commerce, or even efficient at all. At best we might look at the ways a particular system of control and interaction worked and assess for how long it was successful. In Angkor's case, there was sufficient flexibility and resilience in the state's structures for it to meet changes over six centuries. This flexibility is indicated by cycles of inscription production and of political events. We may also be able to identify when an initially successful policy started to become unworkable, that is, when it no longer adjusted to altering circumstances.

The strategies of the Khmer rulers may be seen in their relationships with other elites and with the rest of the population, and in the relationship between the city of Angkor and the empire. In gaining an understanding of the strategies, we can begin to appreciate the capacity of the rulers to assert their authority away from the capital. In the previous chapters, the categories of political, economic and ideological power were used to describe different strategies for state control. These categories will now be drawn together, because in reality modes of power are interconnected and lines between them are blurred. Political actions might be taken for economic reasons, ideologies can be introduced for political reasons, and communications networks act to facilitate the movement of resources, information, armies, administrators, rulers and clergy. The food support of state taxation officials, *kāryya* and *rājakāryya,* prescribed at two temples, is a cogent illustration of the interdependence of the state, the economy and religion (Section 8.2).

Some proposed causes of Angkor's decline as an empire are introduced briefly. A full investigation of the causes of any 'failure' is beyond the scope of this study, and there is no claim that a particular theory is preferred. The purpose of introducing these ideas is to bring into sharper focus some factors whose interactions may have contributed to Angkor's weakening integrity and which could warrant further research.

## 9.2 What held the Angkorian Empire together?

Jayavarman II's control of strategically important parts of Cambodia led to their consolidation into the long-running Khmer Empire. The location of the capital at Angkor provided: access to the Tonle Sap with its assured annual flooding for rice growing and fishing; strategic lookouts for monitoring movements; direct access to Cambodia's major river system; rice from the Battambang area; overland trade routes; and relative proximity to mineral resources. Regions which were incorporated were often rich in resources or provided access to them and to external trade (Sections 3.2; 6.7).

The empire's extensive area with its diverse resources required an organisational structure to administer these assets. Despite the declarations of rulers that the state's integrity depended on them, the rulers themselves were not essential to the broad organisation of the state. Notwithstanding numerous instances of internal rebellion, usurpations of the throne and attacks from outside, the structure remained in place, and the Khmer Empire continued to function and to accumulate wealth (Sections 2.4.1; 7.5.2), mostly with Angkor as its capital, from the 9th century at least until the 15th century.

An understanding of this organisational structure entails an appreciation of the processes and strategies that interacted to form the Angkorian Empire and maintain its integrity in the face of stresses that arose. While all empires have in common that they will ensure their own security and extract resources from acquired territories, and while processes and strategies used by one empire may be similar to another's, they are not universal. They will vary according to the particular internal and external influences acting on that state. Those which have been discerned in this study are processes and strategies for:

- enhancing communications and trade through a network centred on Angkor;
- maintaining an effective decentralised administration based on regional centres;
- maintaining the support of regional elites through patronage and privilege;
- maintaining systems for accumulating wealth through taxation and commerce;
- enhancing state integration through a network of temples.

It needs to be borne in mind that, because of the inevitable constraints on the availability of data and the inherent limits to the scope of the investigation, the portrayal of the processes and strategies to be discussed below must be an incomplete list of those which helped to sustain Angkor.

### 9.2.1 Communications and trade networks

Communication is essential to any state's functioning – for its expansion, consolidation and administration, for security and for procuring resources through taxation and trade. The spatial and temporal distributions of temple sites dating from at least the Pre-Angkorian period have

highlighted communication corridors which were of long standing (Section 6.7). The Khmer state's effective communication system probably developed from the numerous interconnected waterways, and was augmented by a road network improved in the Angkorian period. The maximum distance for direct communication has been taken as normally no further than one day's travel, 20-25 km on land. Direct central administration therefore probably functioned to a radius of 25 km from Angkor, which can be defined as the city's core region. From there out to 150 km, where the centre exerted less influence, could be regarded as the city's hinterland, containing strategic resources and sites (Sections 6.3; 6.4; 6.9), mostly within the major communication corridors. Where formalised roads were constructed radiating from the capital, they were important for the state. Given the seemingly abrupt endings of some, they appear to have served primarily to access Angkor's hinterland (Section 3.3.1).

Ease of communication facilitated economic and political interaction (Sections 6.6-6.8). As roads were constructed, they likely would have changed trade patterns and political relations, altering the importance of some centres. Equally, as areas became important, roads into them were improved. The establishment of the capital at Angkor required good communications with population centres, wealth-producing areas and trade networks. The Khorat region and Phimai would have acquired greater importance after the advent of the Mahīdharapura dynasty (ca. 1080 CE) which was linked to that area, and this most likely was reinforced by improved access (Section 3.3.1). The corollary is that regions outside the main communication corridors had fewer direct links with the centre, being of less political and economic interest.

The extensive, formalised main roads leading out of Angkor, such as the roads to Phimai and Vat Phu, could only have been the work of centrally directed labour. However, the references in the inscriptions do not link *corvée* to road construction. There is epigraphic evidence that secondary roads were financed locally, but none that they were subsidised by the centre.

Important temples or temple clusters tended to be concentrated at or near regional centres of long duration. These centres often developed around transportation network nodes, originally being of religious, resource or trade importance (Section 6.5). Some of the centres had been Pre-Angkorian 'capitals' (Section 3.3.2). New centres became prominent in the Angkorian period, when territorial divisions (*pramān* and *viṣaya*) were established. The majority were located such that their zones of influence — a radius of one day's travel — overlapped those of neighbouring centres, suggesting that there could be direct and immediate communication links between them. Together they helped to define the communication corridors beyond the formalised roads (Sections 6.6; 6.7).

The movement of centres of power away from the coast after the 6th century CE decline of Funan conceivably resulted in a greater focus on an agrarian economy and a reduced emphasis on trade. However, the Khmer did not abandon their trading links which dated from

at least the 1st millennium BCE. Commercial and strategic needs were served by the utilisation of pre-existing waterway and overland routes: towards the east and the coast of Vietnam, to the north over the Dangrek Mountains and up the Mekong River system towards the Southern Silk Road network, and to the west towards Thailand, Burma and the Isthmus of Kra (Sections 3.3.1; 6.7). They also continued to make use of the southern waterways, in particular the Mekong–Tonle Sap–Bassac system, which allowed direct access to Angkor from the China Sea. Nevertheless, we have yet to locate any ports on the Great Lake or any post-Funan ports in the Mekong delta.

The period of Song China's flourishing maritime trade, from 900 CE to 1300 CE, is linked to political, social and economic changes throughout Southeast Asia and would have enhanced Angkor's contact with other states, even if maritime trade in the main by-passed the Khmer. Prestige goods for the elite could be acquired through the long-established international overland and water trade networks. Territorial expansion in the reigns of Suryavarman I, Suryavarman II and Jayavarman VII indicate concern for improving access to international trade. Angkorian period inscriptions between the 9th and 13th centuries mention a few imports from China and seemingly from India. Historical evidence shows trade was continual (Sections 4.6.3; 7.4.1) and archaeological evidence, including volumes of Chinese ceramics at Angkor, indicates extensive trade links, though as yet there is limited material evidence of foreign goods in the provinces (Section 4.6.3). These links may have reduced any incentive at this stage for Angkor to move its capital towards the coast and away from the benefits of the western region of the Tonle Sap and the Southeast Asian mainland cross routes.

Despite repeated attempts from the 11th century to gain improved access to trade routes, the Khmer could not secure these over the long term. From the mid 13th century, Angkor's international trading conditions were somewhat worsened by a temporary decline in Chinese trade (Section 6.7.2). Disputes with Champa over mountain territory, with its forest products for export and access routes to eastern coastal regions, posed a further threat to Angkor's trade from the late 14th century. Subsequently, the Khmer core region was poorly located to take advantage of altering trade networks between the Ming Empire and Southeast Asian polities from the early 15th century (Reid 1988a: 62-131; Wade 2004: 31-33). Coe (2003: 196-197) argues that the Angkorian Empire ceased to exist in the 15th century with the advent of Reid's 'Age of Commerce'. With the rise of Thai polities, and the strengthened Đại Việt, Angkor's traditional trade routes were less secure, and the shift of a Khmer centre of power to the Phnom Penh region in the 15th century, linked conventionally to Thai invasions (Brown 1988: 35), might be attributed more accurately to the competitive economic advantages gained from being located nearer to the coast (Vickery 1977: 520; Reid 1988a: 62; Chandler 1996[1983]: 77-78; 2005: 15). The Ming *Shi-lu* mentions Cambodia much more frequently after 1370 than previously (Wade 2005; Vickery 2005a: 15).

The Khmer state was well equipped to communicate within its core territories by means of roads and waterways, to access resources, to oversee the provinces and to provide security for the state. The communications were opportunistically enhanced during the Angkorian period. Angkor was not isolated. Accumulating evidence — from archaeology; from historical records of Angkor's expansions, conflicts and trade missions; and from research on trade routes — shows that Angkor was linked to major commercial networks, continuously importing foreign goods, and seeking opportunities to enhance its markets. There are many indications that Angkorian period expansion and much of the enhancement of its road network were directed at links to foreign trade routes. The development of another power base away from Angkor in the Phnom Penh area suggests that the new regional trade networks were no longer as accessible via existing communication routes.

### 9.2.2 Regional administration

There can be little doubt that much of the administration was delegated to regional centres, since distances, up to 14 days journey from Angkor, were often too great for many local decisions to have been made in the capital (Section 6.5). The high frequency of royal inscriptions in temple clusters in the communication corridors points to these as regional centres (Section 6.8.1). It is safe to suppose that these regional centres not only attracted strong royal interest, but were the bases for local and centrally appointed officials, as well as centres of manufacture and locations of regional markets, attracting people and new religious foundations (Section 6.5). A high proportion of land transactions are reported in the clusters of temples in the principal communication corridors, indicating that the clusters were concentrated on land which was sought after and where many land allocations were made early in the Angkorian period (Section 6.8.4).

The inscriptions suggest that the king's power in matters of land, law, and administration, although not absolute, was real. Mabbett (Section 3.4.2) has posited that the complexity of titles and functions with cross-cutting loyalties in the Post-Angkorian and colonial period, which apparently was so great that it appeared to prevent any consolidation of power in the king, may have had its antecedents in the Angkorian period. This is not persuasive, as the evidence from the Angkorian period inscriptions suggests strong royal involvement in matters of land, law and religion, and for functioning protocols and chains of authority (Section 7.5.4).

There are indications that rulers were asserting their authority increasingly from the Pre-Angkorian period. In the 7th century, Jayavarman I appears to have held greater authority in land matters than previous rulers (Section 3.4.1). From the 9th century, rulers were more influential in foundation administration and workers appear more often to be grouped according to their place of origin and relocated over quite large distances, suggesting increased concentrations of directive power (Sections 3.4.3; 8.3). The oath of allegiance of the

*taṃrvāc* in the reign of Sūryavarman I, (Section 2.4.1) is a further example of an increased capacity of rulers to exercise control over people. Another indication of growing central influence is that the state's administration in the Angkorian period appears in the inscriptions to be more elaborate than in the earlier Pre-Angkorian states (Sections 2.4.1; 3.4.2; 7.5.4) — at least from the period of Rājendravarman. However, Angkor's complex bureaucracy is likely to have been established from at least the 9th or 10th century, since the number of functional official titles does not seem to vary much from this time to the 13th century, suggesting they were established mostly during Angkor's initial stages (Section 6.4).

Taxation appears, in the main, to have been decentralised. Many of the officials appointed to administer the regions were local and received their livelihood by local levying (Section 8.2). Some, such as *rājakāryya,* were widely distributed state agents, while some had district or village responsibilities. Others, such as the *khloñ sru* and *khloñ vala,* appear to be agents of the *rājakāryya* (Section 6.4). Legal courts and court officials also appear to have been widely dispersed (Section 6.8.3). Yet while a large proportion of titled officials were probably locally appointed elites, the very fact that they had these titles indicates they were not independent of the state, in that they had to comply with royal requirements, such as respecting immunities granted to the foundations. These local and state officials were widely distributed and can be observed over 300 km from Angkor, for example in modern Pracinburi, Prey Veng and Basak provinces (Sections 6.4; 6.8.2).

Relatively few inscriptions were produced by rulers or officials from the start of the Mahīdharapura dynasty in 1080 CE, and this less-well documented period conceivably was subject to further increases in central authority (Section 8.3). However, Jayavarman VII (1181-1220) authored many inscriptions. His reversion to the traditional symbols of Khmer kingship (Section 3.4.1), including his construction program, and his use of Sanskrit for the majority of his inscriptions (Footnote 47), as well as his capacity to requisition large quantities of resources (Section 8.2), point to a ruler of considerable power, or at least one desiring to project such an image. While it is possible that Jayavarman VII instituted increasingly despotic measures to administer the state more from the centre, it is also possible that he was continuing changes already initiated by his predecessors. By the late 12th century, the system of political and economic administration appears to have become more centralised. On the other hand, the distribution of the Jayavarman VII regional hospital chapels, which were found to be predominantly outside the clusters and thus away from the regional centres, indicates that they were established not so much for strategic reasons, but for another purpose, ostensibly welfare.

In summary, while the Angkorian period had a largely decentralised administration focused on regional centres, important for the state's effective functioning, there was also an overall trend to increased central controls. This apparent inconsistency could be interpreted as authority

operating at two levels: regional authority for local issues, and central authority for matters of state significance, such as taxation. It will be seen in Section 9.3, that the accumulation of central power was not continuous, but to the extent that there was such a tendency, it would follow that there was a corresponding decline in delegated authority. This would have resulted in an increased logistical challenge for the empire's administration and may have contributed to its weakening.

### 9.2.3 Support of regional elites

A state has to approach the provincial regions that it is exploiting with strategies that balance rewards to supporters and coercion of opponents. Unless this balance is achieved, state-sponsored activities away from the centre (annexation of new lands, temple and road construction, wars, natural resource collection and taxation) become problematic, since they are not easily monitored. Angkor's survival over six centuries points to an ability to maintain the cooperation of regional elites, whether through controls or perhaps coercion, as seen in Sūryavarman I's appointment of the *taṃrvāc*, or through patronage, exemplified by titles, land grants, taxation immunities and by other privileges (Sections 2.4.2; 8.3; 8.4). As discussed by various writers, we can observe the interdependency of powerful families and the rulers in the inscriptions of private foundations during the 10th and 11th centuries. Although it was an aspect of the genre of temple inscriptions to acknowledge the generosity of the ruler and offer him a share of the merit for a new foundation (Section 8.6), it is unlikely that this was purely customary or notional. The families who established religious foundations on land purchased or given by rulers profited from the labour of the inhabitants, often recorded in the texts as being 'given' as whole villages (*sruk*). We can infer from the declarations of the founders about the future of their estates that they, their families and followers often remained as beneficiaries of both the agricultural surplus (Section 3.2.1) and the fiscal immunities given to the foundations. Being part of a powerful polity thus enhanced the wealth and status of these local elites.

The potential disadvantages of membership of the empire were the diminished autonomy of local elites and rulers and the loss of the resources to exploitation by the state. The lives of ordinary people may not have been heavily impacted by their incorporation into the Khmer Empire and the creation of Angkor's administrative divisions, despite the redirection of some levied resources. Those who were assigned to the religious foundations would have been subjected to a fortnightly work schedule, but it is not known what proportion of the population was involved. Movement of village populations, not necessarily forcibly, to work for the foundations conceivably had a disruptive effect on peoples' customary lives (Section 3.4). The impacts on people living in areas where mineral resources or forest products were exploited may have been severe (Section 3.4.3). Forest products, by volume the major export from

Cambodia as recorded by the Chinese, were often acquired from areas traditionally occupied by various ethnic minority groups. These populations may not always have been willing parties in the exploitation of their valuable resources. The many 'slaves' from the hills at Angkor reported by Zhou Daguan late in the 13th century conceivably were groups affected by this state activity.

Angkor's long duration as an empire over six centuries implies that it was able to maintain adequate support through a balance of patronage and coercion of regional elites. Yet, as has been suggested (Sections 8.3; 8.7), this balance may not have been sustained. An implication of increased central power is that the centre may have relied increasingly on coercion, a strategy which, while successful in the short term, may have become less so over time, weakening the ability of the state to administer its extensive territories effectively.

### 9.2.4 Accumulation of wealth

The Khmer state's accumulation of wealth, evident in the inscription lists of exchange items and temple treasure, was underpinned by a strong agrarian rice economy and an organisational capacity to extract resources through levying from regions under its control. The state was able to mobilise resources on a large scale by taxation and through *corvée*. In general, it makes sense for taxation goods transferred to the capital Angklor over long distances to be largely of high value, such as metal items, manufactured goods or rare forest products, in order to reduce the relative costs of transport (Section 2.3.2; 7.6).

The city of Angkor was probably self-sufficient in rice, at least in its early phase, and perhaps up to the 13th century, with the water stored in the *baray* arguably acting as insurance for periods of delayed rainfall or untimely drought (Section 3.3.3). This provided a secure base for asserting its authority over other areas. However, recent studies of Angkor's hydraulic network suggest that by the 14th century its effectiveness was somewhat reduced (Groslier 1979: 187; Penny, Pottier et al. 2007[2005]; Fletcher, Pottier et al. 2008; 64-65; Lustig, Fletcher et al. 2008: 83-91), and others have linked Angkor's decline to postulated environmental damage that accompanied the development of the core area of Angkor (Groslier 1979: 191-194; 1998[1986]: 263). Yet Damian Evans (2007: 207-209; 211-217) has examined failure of the water network and environmental degradation and concluded that neither of these alone would have been sufficient causes of a collapse at Angkor.

Rice can be transported long distances over water, so large quantities of rice from Battambang and other productive areas to the north of it could have been moved to the capital with relative ease, if needed. Resources moved to the capital and regional centres as tax could have been used to supplement locally produced supplies for people working for the state — in temples, the army, for officials and *corvée* labourers. A commonly stated view of the cause of Angkor's weakening is that Jayavarman VII simply overextended his demands on the

state's resources with his expeditions, building and temple maintenance (Higham 1989: 355; Coe 2003; 196). Indeed, mobilisation to the capital is evident on a large scale in the many people and large quantities of rice assigned to the royal temples of Jayavarman VII in 1186 CE. Whether the supplies were from the provinces or local is not known. However the sheer volume being requisitioned (Section 8.2) by the capital in this case suggests some supplies came from the provinces. An implication of such large transfers is that large storage facilities would be needed. Yet there is no extant evidence of facilities for mass storage at Angkor or in regional centres (Section 4.3), suggesting either that the stores were made of wood, or, less likely, that tax payments were made to meet demands as they arose. Payments were doubtless administered by means of registers, mentioned in 11th century texts (Sections 4.5.2; 7.6).

The numerous officials and authorities, against whom immunities were granted to the foundations, suggest much local levying took place and that many sectors of the economy were subject to state and local impositions (Section 8.2). Tax farming, typical of many agrarian state economies, was the means whereby individuals with official sanction could gain or supplement their living by levying sections of society (Sections 2.4.1; 8.2). A significant portion of the state's revenue must have been provided by a section of the population about which we know little, consisting of neither slaves nor temple workers, but people who cultivated land and lived in villages not assigned to temples and who are not mentioned in the texts as being immune from state and local levies.

There are various pointers to increased economic development, concentrations of wealth, and political and economic integration in the Angkorian period. The inscriptions provide evidence of greater availability of precious metal and material objects, more frequent indications of trade, as well as more attention to status symbols and hierarchies than in the Pre-Angkorian period. The introduction of the many Sanskrit and Old Khmer words for precious metal objects, jewellery and quality textiles, when compared with the relatively fewer terms from the more traditional agricultural sector, highlight the changed economy. Certainly silver, which was not available locally, came from further afield by trade or plunder (Section 7.5.2). It is likely that there was gold from some of the sites known today in Banteay Meanchey Province, Champasak in Laos and elsewhere. Base metals, including iron from Phnom Dek in Preah Vihear, copper from the Vat Phu area of Laos and tin from Kompong Speu were readily available (Sections 3.2.3; 4.6.1).

Probably only industries of strategic importance, such as resources for export (Section 3.2.2), for consumption by the elite, for ritual and for national security, were overseen directly. Collection of honey and wax from the Plain of Joncs area of Vietnam is recorded as early as the 8th century and is specifically authorised by King Udayādityavarman in the 11th century (Section 4.6.2). This royal interest in wax, an export, and honey suggests the state either

monopolised the production of certain resources or taxed their extraction and distribution. The evidence of iron ore mining of the rich deposits of Phnom Dek, of iron smelting at the nearby temple of Prah Khan of Kompong Svay, and the construction of an almost direct road between that temple and Angkor suggest that the state had a strong interest in the iron industry (Section 3.3.1). It is reasonable to expect that the state was involved with other strategically important industries as well, though it is not evident from the inscriptions that it was responsible for the production itself (Section 7.4.2).

There are few mentions of craft in the inscriptions. Likewise, the inscriptions have little to say about the artisans who were responsible for the monuments and art works. One might logically speculate that, as in Cambodia and much of Asia today, there were workshops specialising in stone carving, textile production, metal work and ceramics (Polkinghorne 2007: 53-54). The status of Angkor's artisans and craftspeople would likely have been similar to that of their counterparts in, say, Pagan or South India, where the mode of payment and social mobility varied according to the craft (Section 3.4.3).

Given the variations in monetisation across the rest of South and Southeast Asia in the same period (Sections 4.4.1), Angkor's lack of money appears not to be a major point of difference. Indeed, Angkor compares with other Southeast Asian polities more than with the non-monetised Inka Empire. Where money was introduced earlier than in 16th century Cambodia, it was not used continuously. Moreover it may not have been used for marketised transactions, but for paying taxes, or as gifts to religious establishments. Further, while monetisation has been associated with trade and urbanisation and there is no evidence that Angkor used money, it does not follow that its trade was insignificant. There is a powerful incentive for states to allow trade since they can benefit from taxing commercial activities, as witnessed by contemporary states. For example, trade was encouraged in Chola India, although rulers attempted to exert some controls when they perceived the merchant class to be gaining in power (Section 4.2). Furthermore, since trade does not require money (Section 4.3), the argument that monetisation was low in order to limit trade and restrict the dispersal of prestige goods is not compelling. A state administered or command economy, which has been postulated for some pre-modern Southeast Asian polities to explain the absence of money, also requires a strong centralised bureaucracy, which Angkor appears unlikely to have had. Commerce with money can function in a command economy, and not all moneyless societies are command economies (Section 7.4.2). Lack of reserves of precious metals is not a strong argument, since currencies do not require metal, and because Angkor clearly had some reserves of metal and was able to acquire gold and silver for its temple economy (Sections 4.6.1; 7.5.2).

There appears no practical reason for not adopting money. The Khmer must have known about monetary systems through contact with the coinages of the Chinese, the Indians and

Southeast Asian polities, and the cowrie shells in use on the Southern Silk Road and adjacent areas (Section 4.4.1). One could postulate that, when compared with non-monetary processes which already worked, the introduction of money offered few net advantages to the economy of the elite, who demonstrably continued to access local goods and services and accumulate wealth.

In the Pre-Angkorian period, silver and textiles are the most commonly recorded items in exchanges for land. In the generally enhanced wealth of the Angkorian period (Section 7.5.2), we see proportionately more gold objects in temples than in exchanges and the converse for silver, in line with the practice that the gods took precedence over people. The fact that the material of metal objects in temple inventories was recorded much more often than in transactions arguably points to the higher prestige value of gifts to the gods. By the same token, the weights of metal objects, recorded significantly more often in exchanges than in inventories, suggests that commercial valuations were important in the Angkorian period (Section 7.5.3).

Among the many and varied items used in the exchanges, none stands out. Although barter was the mode of exchange, the use of many barter items for the one transaction is unlikely to have been practical for purchasing everyday commodities, and hence to have been representative of the wider economy. Rather, this is a feature of the particular genre of the texts, indicating elite societal priorities, where status appears to have defined much of elite social and political life. Valuation according to hierarchy is seen in fees paid to officials, the price paid for land to a clan group and in a list of prescribed fines in a late 9$^{th}$ century monastery inscription (Section 4.5.2). However, it would have been unworkable for all payments to have been based on the relative status of the transactors and/or the merit derived from giving to a god as illustrated by two inscriptions (Section 7.5.4). From the list of fines, it appears clear that a simple means of payment, a weight of metal, was pragmatic for the elite (Section 7.7). Moreover, there is little doubt, given the sophisticated monetary concepts recorded in the inscriptions in both Pre-Angkorian and Angkorian times, that one or more units of account were used for transactions in the wider economy (Section 7.5.1).

The inscriptions inform us that prestige goods were given as gifts and rewards by rulers, exchanged for land and servants, and stored in temples as treasure of gods. Yet we cannot imagine that all precious goods came into the possession of the officials as gifts from the rulers or through transactions. As wealth increased, the flow-on effects amongst, for example, artisans and people attracted to centres of economic activity must have contributed to the expansion of markets to serve the growing numbers of people wanting to purchase prestige goods for themselves and the foundations. The texts are not informative on whether rulers controlled the import and distribution of some strategic goods as was often the case in China and South India. Also, as has been noted in Section 7.4.2, there is no indication that the

markets and prices were centrally controlled. Images on the Bayon walls show local markets functioning like those of today for the exchange of household products, including foods, plant products, textiles and ceramics. If the Khmer Empire was indeed a decentralised state, it would follow that regional markets were organised by intraregional groups, including merchants, perhaps in conjunction with local elites.

The infrequent mention of merchants in the texts should be interpreted more as an indication of the focus of the inscriptions than of the degree of importance ascribed to commerce by the Khmer. While Khmer merchants were reported elsewhere to be operating in ports of Annam, Tongking and in Java, some even acting as tax farmers, there is no epigraphic evidence for a post 9th century rise of a merchant class, with merchants or other groups having corporate political and economic authority, such as in South India or Java (Section 4.6.3). Indeed the involvement of merchants in the movement of resources and in the control of regional markets is unknown. The rare mentions of Angkorian period merchants are in non-trading contexts, for example as donors to temples or involved in quasi-official activities in 10th and 11th century inscriptions, indicating that their status was not necessarily low (Section 7.4.1). As for the activities of foreign merchants in Khmer territory, while there is no epigraphic evidence, we know from images on the Bayon and the late 13th century report of Zhou Daguan that Chinese merchants were active at Angkor (Sections 4.6.3; 7.3.3).

Polanyi argued that 'archaic' economies functioned through reciprocity and redistribution. However, under the practice, in place by the 9th century, whereby personnel worked for the temples only half of each lunar month, people could have produced their own food on the other days. With a ratio of 3 female to 2 male temple workers in both the Pre-Angkorian and Angkorian periods (Section 3.4.3), it is unlikely that many were living permanently at the temples. Furthermore, despite a shift to greater control of the population in the Angkorian period, and there being more people now working for the state or state affiliated temples, there is no evidence that the bulk of the temple workers received their provisions from the temples through some form of redistribution, as in the later Inka economy. The only examples of prescribed provisions or allocation of rice fields are for relatively high status servants — *khñuṃ vraḥ,* or skilled workers such as cooks or religious personnel — and in no case could it be argued that the provision was other than token. At best we might consider that the mode of provision for temple servants varied over time and with location, ranging from redistribution through the temples to greater self-sufficiency.

The accumulation of wealth by the Khmer state was made possible by its strong agrarian rice economy and its ability to tax the regions under its jurisdiction. Direct control of production and distribution probably applied at most to industries of strategic importance, but the state was able to mobilise resources on a large scale by taxing and through *corvée*. Because the capital was self-sufficient in rice, arguably at least up to the 13th century, this provided a secure base

for the empire to assert its authority over other areas. If Angkor came to rely more on supplies from outside the city, as might be inferred from inscriptions of Jayavarman VII, this may have shifted the balance of mutual support between the centre and its peripheral regions, with long-term implications for the empire's cohesion.

### 9.2.5 Temples and state integration

The temples fulfilled an important role in integrating the state, by legitimising the existing social structure and providing a focus for state administration, commercial activities and social interaction. One can sense in the inscriptions an interdependence of the rulers, the temples and their founders. There are officials of the state active in and around the temples, and the food allocations for *kāryya* and *rājakāryya* officials at two temples indicate that these individuals were associated with local administrative activity. Rulers sanctioned the purchase of land or gifted it for the establishment of religious foundations, to which they also granted immunities against levying. The wealth of a number of powerful families accrued through surpluses from these lands. Rulers are frequently acknowledged for their generosity; they are praised and accorded the merit for new foundations; their permission is sought; there are royal cults in family temples and indigenous cults in royal temples. Clearly the establishment of the foundations also benefited the state.

The inscriptions, expressed in language couched in religious symbolism, and often setting out pragmatic matters, illustrate how the social and political structure was legitimised. While a text might be about the purchase of temple lands, establishing provisions for a deity or for temple officials, much emphasis is placed on the authority of the rulers and the wealth, status, generosity and devotion of the founders. Conceivably, ordinary people were rarely exposed to this language and, moreover, it seems unlikely that they were involved in temple rituals, other than in supporting roles such as dancers or cleaners (Section 3.4.3). People in many parts of the empire would have been aware of the Khmer social, political and economic milieu in which they lived, and whose symbols, the temples and foreign rituals, justified a higher authority (Sections 1.3.1; 1.3.2; 3.4.1). As is clear from the impression made on the visiting Chinese envoy Zhou Daguan in the late 13$^{th}$ century (Section 1.2.1), Angkor's physical presence would have imparted the implicit message to outsiders that this city stood for a powerful state and one not easily meddled with, at least not near its core area.

Khmer religious practices had developed from the integration of Indian religious concepts with the indigenous cults (Section 1.3). As a result, indigenous cults could be incorporated into the official pantheon with relative ease, and royal deities could be shared with regional populations, facilitating the transfer of state ideology through the medium of religious symbolism. A model proposed by Sedov and Hall posits a hierarchy of temples and their deities linked through the practice of joining foundations, noted in several Pre-Angkorian and

Angkorian inscriptions (Sections 2.4.2; 8.4). The amalgamations, at least in origin, appear to have been more symbolic than practical. Nevertheless, the expressions used to describe this practice and occasionally the quantities of resources transferred in the Angkorian period suggest more than symbolism. In the Angkorian period, the many deities which are joined to a Śivaliṅga are often named or located at Liṅgapura and have indigenous titles, commonly containing the term *jagat*. This suggests some significance in the distinction and hence the relationship between joining and joined deities. This may have derived from a Pre-Angkorian practice in which a new god was placed in the domain of an older god. Complementary hierarchies of titles for people and gods or, as has been proposed for the Pre-Angkorian period, a single hierarchical structure linking indigenous deities and rulers and elites (Section 3.4.1), may point to a hierarchy of temple deities. But, other than in one instance, we cannot discern a hierarchy of gods reaching beyond two levels. There is no evidence for a hierarchy of temples facilitating the movement of taxation commodities towards the centre. Indeed, it is not apparent that the varying quantities of food which passed between joined foundations were transferred to the capital at all (Sections 8.2; 8.4.2; 8.4.3).

The close association between the rulers and the temples, together with the indications of a consistent pattern of associations between linked deities may add credence to the *Temple Hierarchy model*. How extensively the joined foundations were used as a vehicle for legitimising political and economic activities of the state and whether the joined foundations formed a hierarchy remain to be clarified. However, the Angkorian temples were a part of the social fabric, linking the state, the economy and the people and were vital to the integrity of the empire.

A factor cited for the weakening of Angkor's empire is the introduction of Theravada Buddhism during the 13th and 14th centuries as the principal religion of the state, with Pali instead of Sanskrit as its language.[157] In this religion, gifts to a monastery were now for personal merit making, rather than in the name of the ruler, and monks of the *saṅgha* now depended on these offerings, effectively reducing the distance between ordinary people and the clergy (Hagesteijn 1987: 165; Higham 1989: 354; Coe 2003: 195; 201-204). Vickery has linked the adoption of the religion to its acceptability to a trading society which preferred the greater individual freedom that it offered (Vickery 1977: 521).[158] Theravada Buddhism may have been more of an effect than a cause of the weakening of the empire, although a lessening influence

[157] The post-classical period is marked by the predominance of Theravada Buddhism with the *saṅgha* in all aspects of life, the absence of large-scale public works, notably the stone temples; the ruler is no longer *cakravartin*; and royal cults are now irrelevant (Coe 2003: 195).

[158] He also suggests that the change to Theravada Buddhism could have reduced the emphasis on bureaucratic control of land and population.

of the temple network may have served to hasten the reduction in efficacy with which state ideology could be promulgated.

## 9.3 Cycles and continuity

When royal power depends on the loyalty of regional chiefs, and must be continually earned, negotiated or coerced, it can be expected that circumstances will at times favour the chiefs and at times the rulers. It is also foreseeable that from time to time a state such as Angkor will be threatened from outside or seek to expand — and this will have internal political and economic ramifications. Over time, these changes in power relationships will appear to vary cyclically.

Vickery's holds the view (Section 3.3.2) that the 8th century, having fewer inscriptions[159] but with substantial innovative construction, was a period of greater political consolidation than the 7th century 'transition period', with many inscriptions. This raises the question of whether there might be a similar correspondence between frequency of inscriptions and political integration in the 9th–14th century Angkorian period — bearing in mind that the society and the political economy had changed considerably during the 8th to 9th century transition.

Figure 42 plots numbers of royal and non-royal inscriptions against time. Two distinct cycles are immediately evident – cycles of royal inscriptions and cycles of non-royal inscriptions. As can be seen, the relative frequencies of royal and non-royal texts are markedly different during different periods. In order to explore the reasons for this, significant historical events have been overlaid. From this, one might discern further cycles of broadly similar processes in the Angkorian period, namely periods of territorial amalgamation or expansion, followed by periods of consolidation, then periods of political instability or loss of territory, after which the cycle starts again.

[159] Over the two centuries, of 49 dated and 176 undated texts with estimated date ranges in the Database, there are 132 inscriptions for the 7th century, 46 for 7th–8th century and 47 for the 8th century.

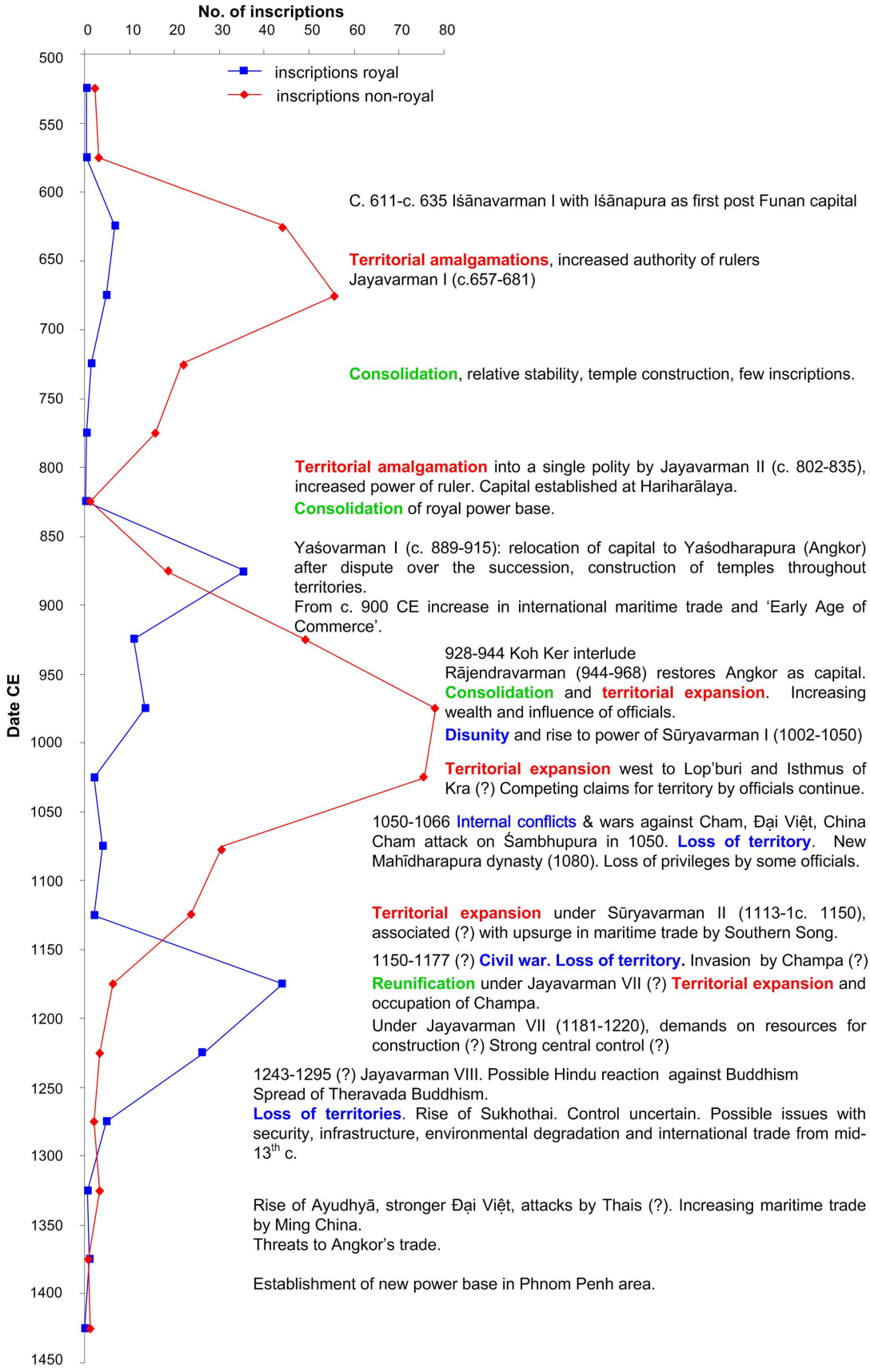


Figure 42 Royal and non-royal inscriptions and broad political stages, 500-1450 CE

In the 7th century, we can see the frequencies of the royal and non-royal inscriptions increase synchronously, though there are many more non-royal inscriptions than royal inscriptions. This represents the period when many minor chiefs appear to have been amalgamating their lands and rulers are beginning to show greater authority over such activities. The more stable period with many fewer inscriptions in the 8th century was apparently dominated by a small group of related chiefs (Section 3.3.2). In the last quarter of that century, the future Jayavarman II embarked on his campaign of amalgamations. Although rulers in the Angkorian period held significantly more power relative to other elites than previously, they did not always produce the greatest number of inscriptions. Angkorian period royal and non-royal inscriptions are largely asynchronous — they were produced predominantly by one group or the other. There are two periods in the Angkorian period where there are many royal inscriptions and few non-royal inscriptions, and there is an extended period of very few royal inscriptions and many non-royal inscriptions (Sections 6.3; 6.4).

The first part of the 9th century can be seen as a new period of consolidation of royal power, centred for the most part on Angkor. At some stage after the turn of the 9th century, the amalgamated territories were consolidated into an empire. Jayavarman II's successors, including Indravarman I (877-889) and Yaśovarman I (889-910), appear to have been concerned with consolidation of the dynasty's power base. Yaśovarman, who moved the capital to the Angkor area following a dispute over the succession, is not known for any conquests, but was responsible for numerous monuments: hill sanctuaries near Angkor, the temple at Preah Vihear and many recorded, though as yet unidentified monasteries throughout his territories. A decade or so after his reign ended, Jayavarman IV (928–941) and Harṣavarman II (941–944) apparently ruled from a new capital which arose at Koh Ker, with the role of the king apparently continuing in essence as before — given the acknowledgment of Jayavarman IV in an inscription produced in far away Takeo Province.

It is notable that in the early part of the 9th century, both royal and non-royal inscription numbers increased. While the rulers appear to have commanded significant authority, the officials were gaining in wealth and power at the same time. As the number of royal inscriptions drops off in the 10th century, the number of inscriptions by officials continues to increase. In the 10th–11th centuries, the relative prominence of the officials in many administrative roles and their ability to secure privileges, albeit under the patronage of rulers, point to their economic and political influence. The inscriptions of the officials show rivalries and justifications for their claims to land and position. This illustrates Vickery's hypothesis that inscriptions were often written in periods of rapid change or instability — the instability seen here being at least in part associated with the claims and counter claims of the officials. The inscriptions of Sūryavarman I, whose reign saw the greatest number of texts by officials, are of

a king explicitly establishing his authority, as might be inferred from the inscribed details of the formation of his *taṃrvāc* corps at the start of his new dynasty. Sūryavarman, who produced few inscriptions himself, could be regarded as a strong ruler on the basis of his campaigns and territorial expansion, known from his monuments and the inscriptions of others. Given the length of his rule, much of it would have been stable (Section 6.3). Much of the Rājendravarman to Harśavarman II period, from which we have the greatest number of non-royal inscriptions, saw the capital Angkor restored after the Koh Ker interlude and the state's authority extended to the west, well into present day Thailand. The expansion, begun from the period of Rājendravarman (944–968), was mostly achieved by Sūryavarman I in the first half of the 11th century (Section 4.6.3). Nevertheless, stable periods may not always have resulted in few inscriptions, since the arguably stable period of the ruler Yaśovarman I produced many inscriptions.

As pointed out above, during the period of dominance of non-royal inscriptions in the 10th and 11th centuries, the flow of resources to the elite was at the expense of some previously allocated to the centre. Conceivably, by some time after the reign of Sūryavarman I, the combined taxation relief of all the private foundations was impacting adversely on the state's budget and posing a threat to the income that the Khmer rulers could collect. The loss of territory following Cham attacks and the coup staged by the founders of the Mahīdharapura dynasty arguably then became possible in a period of central weakness. The influence of some officials seems to have been curtailed after 1080 CE through the loss of their political and economic privileges. An alternative hypothesis is that immunities were curbed some time around 1050 CE and this contributed to the dissatisfaction of elites, leading to a revolt. There are, in any case, very few inscriptions by officials from 1080 CE. Either any new privileges granted to royal supporters were no longer written in temple inscriptions, or, with the loss of immunities, there was less incentive to establish foundations (Sections 8.3; 8.7).

There were also few royal inscriptions from this time up until the reign of Jayavarman VII (1181–1220). This period (1080-1181 CE) covers the reign of Sūryavarman II in the first half of the 12th century, which saw campaigns and territorial expansion into present day Vietnam (Section 4.6.3). Very little is known about the period after Sūryavarman II, and it appears to have been a time of internal conflicts and Cham invasions until 1181, when the 'strong' Jayavarman VII was on the throne. Only recently have researchers started to examine the vicissitudes of Jayavarman VII's accession to power and his reign. Indeed, it now appears unlikely that Jayavarman established his hold on territories and simultaneously achieved so much else. His military and political campaigns may have begun or been largely before his

reign,[160] while his many dispersed royal monuments were established later. It is noteworthy that of the many inscriptions produced by Jayavarman, the dated texts are from the early part of his reign.

A common outcome of the periods of territorial expansion and consolidation seems to have been a considerable strain on resources and relationships. Following reigns of expansion, the successors were often faced with: having to cede territory; invasions and civil wars;[161] or replacement by a new dynasty. After Sūryavarman I, Sūryavarman II and Jayavarman VII, the Angkorian rulers most noted for extending the empire, the territorial gains were reversed (TimeMap Project 2003). Following Sūryavarman I, there were invasions by Champa with some loss of territory, and internal revolts, culminating in the Mahīdharapura kings assuming power. After Sūryavarman II's reign, there was again civil war and conflict with Champa. It is to be expected that alternating phases of territorial expansion and contraction of the Khmer state had corresponding resource and/or trade gains and losses. Following Jayavarman VII's reign, there was further disunity and territorial loss, but no subsequent territorial gain. The events leading up to the transfer of the capital to Phnom Penh in the 15th century are disputed.

The Khmer state appears to have been able to assert its power continuously only over an area approximately covering that which was realised during the reigns from Jayavarman II to Yaśovarman I (TimeMap Project 2003). Imperial strategies implemented beyond this area and away from the principal communication corridors were less sustainable. A plausible explanation for the Khmer's repeated failures may lie in their approach to the conquests. On Sūryavarman II's attacks on the coast of Vietnam, Michael Vickery (2005: 5) has argued that Sūryavarman employed

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[160] Recent research is suggesting that the incorporation of Champa into Angkor's domains may have been less dramatic than Khmer inscriptions of Jayavarman's reign suggest. First, Jayavarman came to the throne several years after defeating Cham opponents and faced several difficulties establishing his authority among the Khmer along the way. It might have taken him several years to stabilise the Khmer state and consolidate his position (Jacques: 2007: 40; Schweyer 2007, 67-70). The conquest of Angkor by Jayavarman VII was accomplished with Cham allies between 1170 and 1182. Schweyer (2007: 67) concludes that Jayavarman's role may have been to oust Jaya-Indravarman from Angkor and end a civil war in Cambodia, rather than to liberate his country from Cham occupation. Moreover, Jacques (2007: 35) suggests that both Champa and Cambodia would have been fragmented into a number of 'kingdoms' which were only sometimes united. Jayavarman's 'hold' on Champa may have been tenuous. While he took possession of Vijaya in 1190 in response to an uprising, this was followed by repeated setbacks, reported by the Cham as 32 years of wars, which ended with the death of Jayavarman VII in 1220 (Schweyer 2007: 67-68). Despite these events, political, religious, economic and matrimonial relations between Cambodia and Champa were long-standing (Schweyer 2007: 69). Vickery (2005a: 6) argues for 'an internationalism spanning a joint Khmer-Cham coalition', with Jayavarman VII, influenced by his extended sojourn in Champa, preferring Mahayana Buddhism as the state religion and using the language they held in common, Sanskrit, for all his important texts.

[161] There were civil wars at other times however, such as the struggle over the succession between Jayavīravarman and the future Sūryavarman I at the beginning of the 11th century.

> the methods of an inland agrarian state, conquest and physical control of all territory between his capital and the desired coastal routes, rather than the maritime commercial methods of the states which eventually succeeded – acquisition of hinterland products by purchase, trade or tax, shipment along well-established, mainly riverine, routes, leaving most of the hinterland at peace.

While the unification of territories carried out under Jayavarman II and consolidated by his successors was followed by the relocation of the capital by Yaśovarman I from Roluos to Angkor, this move was not a reversal. Rather it was a continuation of the consolidation, with much reported construction, and with the older capital becoming the east-south-east periphery of the new Yaśodharapura. It is uncertain whether Yaśovarman actually moved into new regions, since his claims about his territories and building activities beyond the Angkor area are largely unsubstantiated.

In summary, the phases of many non-royal inscriptions coincide with periods of instability for the status or property rights of officials. Reigns with many royal inscriptions, at least in the Angkorian period, appear to point to a ruler consolidating his hold on power. The trend to greater centralisation in the Angkorian period (Section 9.2.2) might be viewed in light of three concurrent cyclic patterns: recurring periods of expansion, consolidation, contraction and civil instability; phases of greater and fewer royal inscriptions; and of increasing and decreasing numbers of non-royal inscriptions. Kulke's idealised model (Section 2.4.1) in which the unity of the imperial kingdom was rarely challenged therefore needs to be elaborated to accommodate these changing political influences, and the varying economic factors, such as resource exploitation and modes of taxation, discussed in this thesis. While the proportions of royal and non-royal inscriptions are influenced by historical events, the relationships between inscription production and political and economic circumstances are often difficult to discern. For example, one cannot link territorial expansion to the frequencies of inscriptions.

The cycles discussed above indicate changing circumstances, for which the Angkorian Empire required strategies that were sufficiently flexible for it to have survived. The varying power relations between the rulers and other elites and between Angkor and other states continually altered the conditions under which the Khmer state had to operate. This study has highlighted the following instances of adaptations of existing strategies to changed circumstances:

- The communication network was augmented to facilitate administration, security, commerce, and resource extraction in the developing empire (Section 3.3.1).
- Successive Khmer rulers altered the social and administrative structure by creating positions for supporters to ensure regional loyalty (Sections 2.3.3; 7.5.4), or to reduce the influence of groups posing threats to royal power (Sections 3.4.2; 8.3).

- Angkor's expansion into Cham, Vietnamese and Thai territory was arguably for resource extraction and trade (Section 4.6.3).

- The temple network seemingly was adapted to associate indigenous cults with those introduced by the rulers, in order to play a role in the state's integration (Sections 2.4.2; 8.4).

After Jayavarman VII, there were no new cycles of inscriptions (and very few monuments) in the changing milieu leading to the shift of the central power base to the Phnom Penh area. Ultimately, some of Angkor's processes and strategies were no longer robust enough to withstand the many changes taking place in the region.

## 9.4 Conclusion

The Khmer Empire endured for around six centuries, during which time its strategies, ultimately for the accumulation of wealth, were successful in adapting to changes. Aspects of these strategies and the consequences of their adoption have been investigated in this thesis. The broad patterns observed in the distributions of indicators in the epigraphy and from archaeology are evidence of a political economy having features in common with some medieval culturally related Southeast Asian and South Asian states. The Khmer state had contact with other states and was connected to the world system of trade of its time. Its ruling elites were almost certainly well aware of the social organisation and the political and economic strategies of others. Its own political and economic strategies were designed around the fact that it was principally an inland agrarian state, yet still able to benefit from trade with the outside world.

Some features of Angkor's political economy, such as commerce without money, although not efficient in today's terms, were adequate if not appropriate for it to accumulate wealth. Its strength was as a producer of rice and of forest products for export, along with its ability to manage its territories as an integrated entity. Despite the moves to greater control by rulers, much of the administration appears to have been decentralised to hubs within the communication corridors. The state's ideology promulgated through the temple system was important to maintaining its integrity. Yet Angkor could not maintain control uniformly, and its territories fluctuated during the imperial period. The broad picture is one of concurrent cycles of influence of the royal and non-royal sectors, as well as fluctuations between periods of expansion, consolidation and contraction. The Khmer state's strategies influenced and were affected by the varying power structures within the state, particularly between the rulers and the elite, and by interactions between Angkor and its neighbours and trading partners.

At some stage from the 14$^{th}$ century, key processes and strategies for maintaining its integrity as an empire had apparently become less effective than before and by the 15$^{th}$ century the

Khmer were somewhat reduced in power and more subject to the influence of their neighbours (Vickery 1977: 521-522; Chandler 1996[1983]: 79-81; Coe 2003: 205-213).[162] The factors which reduced Angkor's power were probably interrelated (e.g. Hagesteijn 1987: 154; Coe 2003: 196-197). One might postulate that a decline in self-sufficiency in rice production at the centre through environmental degradation or loss of irrigation capacity, and having to make up the shortfall from the provinces, may well have decreased the acceptance of Angkor's authority (Section 3.3.3; 3.4.1). A perceived failure on the part of the rulers to ensure prosperity may have lessened their status as *devarāja* (Section 3.4.1). Reduced support for the centre by regional elites would have served to weaken a reasonably functioning decentralised administration and render taxation and resource acquisition more problematic — reinforcing the tendency for further central controls. The vast resources requisitioned for the late 12th to 13th century royal temples at Angkor may be symptomatic of an increasing imposition on the provinces, and conceivably of diversion of some support from the centre. In addition, inexorable changes in international commerce, the rise of neighbouring states and a diminishing ability to reinforce state ideology may have lessened the effectiveness of Angkor as an empire.

[162] Some evidence indicates that neither the capital nor the state collapsed and decline was gradual (Jacques 2007 41-43; Wolters 1966: 86). Jacques argues that there was no decline in the 13th century; that Indravarman II (1220-1243) may have continued the architectural and road construction work of Jayavarman VII; that Jayavarman VIII (1243-1295) was responsible for further renovations and modifications; and that the city of Angkor was continuously occupied to the end of the 16th century. According to Chandler ([1996] 1983: 83-84), Angkor, which had been abandoned, may have been briefly reoccupied in the 16th century.

# 10 Power and pragmatism: conclusions

> On the roads from Yaśodharapura to the capital of Campā (he constructed) 57 inns of fire.
> From the capital of the town of Vimāy (there are) 17 inns of fire. From the capital to Jayavatī, from this town to Jayasiṃhavatī,
> from there to Jayavīravati, from this town to Jayarājagiri, from Jayarājagiri to Śri Suvīrapura .....[illegible]
> from this town to Yaśodharapura (along this road) there are 14 inns with fire. There is one at Śri Sūryaparvata,
> one at Śri Vijayādityapura, one at Kalyāṇasiddhika. In total 121 (inns).
>
> The total of the divinities in gold, silver, bronze, stone, including Yama and Kāla, spread among all the provinces, amounts to 20,400.
>
> K. 908 (1186 CE: CXXII-CXXVII)

## 10.1 Introduction

Research on the Angkorian political economy has lagged behind that on some other states, notably in South Asia. This is, in part, due to the relatively limited number of contemporary inscriptions, issues concerning their interpretation, and a prevailing view that the texts can provide little of interest. Depictions of Angkor have frequently been based on idealised models which did not account for geographic and dynamic variations at the same time. Research was characterised by very precise readings of selected texts from which specific instances could be cited, or on occasions, by unquantified or unsubstantiated generalities.

By contrast, the broad approach applied in this thesis was to first analyse the data quantitatively, looking at distributions of all available instances of a given class, or all cases relevant to a topic, and only later to examine specific instances in the inscriptions, such as anomalies or key defining instances, where necessary. An aggregational approach for a study such as this has the advantage of being able to detect trends and anomalies more easily than close reading alone, which may have the disadvantage of leading to problematic generalisations from specific instances. Errors of interpretation — for example in the translation of numerals, of totals of listed items, or errors in the categorisation of an object or action — are less significant when analysed together with many other readings.

The investigation was designed to identify spatial and temporal changes in various material and social features of the epigraphic data at different levels of detail: site, inscription and object. The results of this research have demonstrated that even the relatively limited Khmer inscriptional data can be quantified, analysed and used to depict changes in the Khmer

political economy of Angkor. This aggregational method has been complemented by comparing Angkor with other analogous polities — some Indianised pre-modern South and Southeast Asian states and one in South America that was non-monetised — to help define questions for Angkor and to identify ways in which Angkor might have differed. The findings have supported some well-known opinions but have also identified features which diverge from commonly accepted views. What the texts do not say has also been important, because this can lead to questions about why certain information is absent, whether there were other records, and what the audience for the inscriptions was. Models of empires and large states were discussed in Chapter 2, in order to highlight issues to be investigated in this study. Some aspects of the models were able to be tested against epigraphic and other data. However, because of the many *lacunae* in the epigraphic and other data, only some factors and relationships in these models have been assessed.

## 10.2 Thesis findings: processes and strategies for sustaining the empire

Many studies of other states and empires have demonstrated the links between resource acquisition by elites and a state's political, economic and ideological activities. The premise of this study has been that the accumulation of wealth underpins activities within and between empires and states. The principal aim of the study was to discern processes and strategies which enabled elites and the state itself to acquire wealth, and to shape and sustain Angkor's political economy for six centuries. The broad question addressed has been:

*What processes and strategies contributed to sustaining Angkor's empire?*

Together with other comparative data, the results have underscored the interrelated nature of the processes and strategies for sustaining the Khmer Empire. Those identified from the study and discussed in Section 9.2 are categorised below.

- enhancing communications and trade through a network centred on Angkor;
- maintaining an effective decentralised administration based on regional centres;
- maintaining the support of regional elites through patronage and privilege;
- maintaining systems for accumulating wealth through taxation and commerce;
- enhancing state integration through a network of temples.

It is stressed, as earlier, that there is no claim that these categories incorporate all the factors which helped to form and sustain the Angkorian Empire, or that they are common to all empires, or that they are unique to Angkor. They are categories which have been discerned from the available information and they also broadly resemble those of other empires and large states. An interesting implication that is beyond the scope of this thesis — since very few inscriptions were produced by the Khmer in the 13th to the 16th century — is that assessing the relationships of these factors and the cumulative effect of failures may in due course lead to a

better understanding of the weakening of Angkor, suggesting a focus for further investigation of Angkor's decline.

### 10.2.1 Enhancing communications and trade through a network centred on Angkor

In his recent study of Angkorian period communications, Mitch Hendrickson (2007) identified communication corridors as delineated by the placement of the rulers' temples (using dates in inscriptional texts), in accordance with changing imperial requirements during the Angkorian period. These corridors, which include roads used in conjunction with the waterways, were important for administration, security, resource transport, trade and promulgating ideology. The road network was enhanced, and some of it formalised during the Angkorian period.

This study has extended our understanding of these communication corridors by identifying their locations and functions as part of a network in a historical context. Clusters of sites of long duration or of prominence have been discerned; regional centres of political, economic and religious importance have been inferred as being located within these clusters and acting as the nodes of the network. Much of the land allocated to the elite by the rulers, which was in dispute and thus prized (e.g. in the rich rice growing areas around Battambang and near to permanent water such as the Mekong River) has been shown to lie within the clusters. Likely connectors were discerned from overlapping spheres of influence of site clusters to delineate what appear to be important routes leading to and from Angkor, in existence in the Pre-Angkorian period and probably earlier. The dominant corridor arguably ran from Angkor to the south of Cambodia, beyond the south-east roads through Prah Nan, crossing the Tonle Sap River and the Mekong River, and continuing to the south through the Pre-Angkorian heartland on both sides of the Mekong. Other routes ran along the Mekong River from Sambor, linking to regional centres in the south. The Angkorian north-east road has been traced to Vat Phu and the north-west road to Phimai. These appear to be termini, although it is possible that the west road, currently appearing to end at Sdok Kak Thom, continued further, ultimately connecting Angkor to the Lopburi region in central Thailand.

While there is little doubt that after the Funan period, the Khmer economy was less focused on trade, the Khmer interest in trade has been underestimated, in part because previous archaeological 'evidence' of Chinese ceramics suggested these were no earlier than the 12$^{th}$-13$^{th}$ century. However, more recent archaeological and historical records have pointed to links from Angkor's communications corridors to long-established foreign trade routes, providing evidence of ongoing trade from the time of the Tang dynasty. These links were south to the South China Sea through the Mekong delta, west to the Isthmus of Kra and Thailand via the Lopburi region and the Chao Praya River, north to the Southern Silk Route from Lopburi and from Vat Phu, and east to the coast of Vietnam and Champa over the Annamite mountain

chain. Collation, in this study, of all declared exotic goods in the inscriptions has indicated imports of prestige goods from China, probably India and an unidentified 'Javā' between the 9th and 13th centuries.

The *World Systems model*, concerned with capital accumulation through trade and markets, is characterised by: the exploitation of subordinate polities at peripheries by a central dominant core; alternating phases of economic expansion and contraction; and hegemony-rivalry. Angkor's long-distance trade was important for the prestige of the ruling elites. Its rivalry with its neighbours, frequently Champa, has been stressed in this thesis as being related to trade products and trade routes, and alternating phases of territorial expansion — eastward into Champa and Đại Việt and westward into present day Thailand — and contraction were closely tied to enhancement and loss of access to international trade routes. Angkor's continual attempts to enhance its trade suggest that its position within a world system was not secure. The study has found indications of some efforts towards hegemonic control of Angkor's peripheral areas generally beyond 150 km from the capital. To the extent that this study has been able to assess the applicability of this model, its premises appear reasonable.

### 10.2.2 Maintaining effective decentralised administration based on regional centres

An overall increase in central authority, starting in the Pre-Angkorian period and continuing in the Angkorian period, has been observed by some researchers — in the increasing central controls over land and communities, and in the greater ability of rulers to restructure sections of society. Yet, others have pointed out that the administration was decentralised, both for logistical reasons and because we see large numbers of officials working away from the centre in many capacities, including tax collection. The distributions of specific markers of central influence, the *rājakāryya* (royal service) and the *sabhā* (courts), support the idea of sectors of the political economy being decentralised. This concurs with the 3rd stage of Kulke's *Processual model*, a feature of which is the decentralised collection of levies. In addition, analysis of the distribution of royal inscriptions has shown that the concerns of the rulers were not only at the capital, but also at regional centres in the principal communication corridors, which suggests that much administration was delegated to these centres. The apparent paradox, that there was increasing central authority in the face of a decentralised political economy, is interpreted here as authority operating at two levels: regional authority for day-to-day issues such as for local legal matters, but central authority for matters of state significance, such as royal service.

The *Territorial-Hegemonic model* has provided useful concepts for discerning dynamic and geographic variations in modes of control over Angkor's subject populations. States control economically important regions close to the capital territorially, that is, more directly than

hegemonically controlled areas further away and of less importance, which tend to be given greater autonomy. Administrative focus, as indicated by numbers of non-royal inscriptions and official titles, has been assessed as dropping off in three stages: fairly rapidly outside Angkor's core area of about 25 km radius (one day's journey), remaining reasonably steady up to 150 km. The 150 km distance appears to mark the extent of the strategic hinterland of the city, which contained much of the formalised road network and corresponded with the furthest placement of Angkorian bridges. From 150 km, Angkor's manifest influence again diminished, and it was minimal beyond 350 km. Although the extent of the empire varied at different stages, it is logical to suppose that controls in this outer zone were generally less stringent. The three zones are indicative of different modes of control along the territorial-hegemonic spectrum. Control and therefore zoning must have also varied according to a number of other factors, such as resources and ease of communication.

The investigation indicates that officials had several roles and that many of them imposed taxes or other levies in their official capacities. Other identified responsibilities were roles in the administration of religious foundations, even occasionally involvement in ritual activities; transmitting communications between the king and elite subjects; acting as members of court tribunals; and witnessing transactions. The jurisdictions of many of the named officials were difficult to identify and could not always be clearly differentiated. At least some of the religious foundations were granted immunities against this levying by officials and their authorities.

Further to an earlier suggestion that state officials (*rājakāryya*) were based mostly in areas where there were sizeable temples, the study found that these officials were distributed much as were all inscriptions, about half of them being in clusters of temples in communication corridors. This is not surprising, as the records suggest that many facets of the economy were subject to taxation and other levying by a variety of officials. Reports of courts and court officials were found to be similarly distributed. Important legal courts may have been convened in regional centres even though the records indicate that the locations of matters brought before the courts concerned more widespread localities. An interesting exception is the distribution of Jayavarman VII hospital chapels, which are predominantly away from the regional centres, pointing to their different function.

The *Processual model* of Kulke (1986; 1995) predicts changes from chiefdom to strongly centralised, imperial power. In the 3rd stage with increased central controls, regional control is no longer so reliant on regional chiefs. Further, while the idea of increasing central controls makes sense, there is little evidence to conclude that the final stage of this model, the replacement of local officials by centrally appointed ones, was fully or mostly attained by Angkor. Yet, the more the balance shifts towards central decision making, the more problematic local administration becomes. If there was such a program of replacement with central appointees, this conceivably contributed to some loss of support for the rulers.

Changes in political authority are frequently recorded in other states, for example as documented by Heitzman (1995) for the Chola imperial state. Heitzman used his data to illustrate that there had been a cyclic shift from the polity predicted by the *Segmentary State model* (semi-autonomous polities acknowledging the ritual sovereignty of a king) to one more controlled by the centre, followed by the re-establishment of greater regional autonomy. Angkor similarly, was clearly not a *Segmentary State,* since its rulers held more than ritual power. It too demonstrates cycles of royal and non-royal influence as seen by Heitzman. The investigation has identified cycles of royal and non-royal power and cycles of territorial gain, consolidation and loss interspersed with periods of internal disunity, indicating fluctuations in the overall increase of central control. The asynchronous periods of dominance of royal and non-royal inscriptions are interpreted as marking shifting power relationships between elites. These cycles indicate the effects of rival elites, overlooked by the *Processual model*, which oversimplifies the political structure in its depiction of a singular source of power at the centre.

Following the lead of Vickery (1998), periods during which many inscriptions were written have been taken as times of some uncertainty for the authors: either concerning property and title rights for officials; or for kings, the desire to express royal authority, when consolidating territorial gains or confronted by threats from potential rivals. How important was the king to the empire? As Kulke noted, they were not essential, since the system carried on despite rulers and dynasties being replaced. There was some restructuring of power relationships at times, such as on the accession of Sūryavarman I and of Jayavarman VI, both founders of new dynasties, indicating that the imperial system was flexible to some degree and could adapt to new circumstances without the empire being irreparably weakened. In fact, the replacement by a new ruler or dynasty may have contributed to sustaining Angkor, either because the new leader implemented timely policies or because it resulted in a necessary rebalancing of the power structure within the state.

### 10.2.3 Maintaining support of regional elites through patronage and privilege

The *Mandala model* provides perspective on political and ideological aspects of some Southeast Asian loosely integrated states. According to the model, the influence of the overlord attracts degrees of loyalty and obligations from other lords. A number of dynastic centres may have overlapping circles of influence, leading to changing loyalties. Angkor was considered to have been a *mandala* by researchers such as Mabbett (1978) and Wolters (1982), since the Khmer inscriptions testify to the strong interdependency of rulers and regional elites, in particular the numerous instances of royal patronage. However, Kulke posited, reasonably, that while the *Mandala model* might be applicable to the Pre-Angkorian period, it could not apply to the Angkorian imperial period. The empire ‘transcended’ the earlier

political structure, in the sense that rivals to the overlord would now seek to control the existing polity, rather than establish or become part of another.

Further, the weakening of Angkor is not as simple an event as the *Mandala model* posits, namely the collapse of the polity resulting from loss of support at the peripheries. Some factors contributing to Angkor's weakening have been postulated in Chapter 9. Each of these — changes to the hydraulics network at the capital with subsequent decline in rice production; uncertainties of access to international trade; a growing competition of neighbouring states in trade; and the reduced effectiveness of the temple network in state integration — was potentially capable of reducing support for the central authority. However, it is likely that more than one factor contributed and that these factors were interdependent.

The rulers' support of the regional elite through the immunities granted and permissions to amalgamate foundations could not be without consequences, and at least some of these privileges did not continue. The strategy of granting immunities, while initially successful, appears to have ultimately failed, as revenue was increasingly diverted from the centre. As the officials gained in wealth and power, relationships between competing elites and with the centre were at times unstable, potentially threatening the power of the rulers — who appear to have taken steps to reassert authority. Tightening central controls and/or some restructuring of the administration are two means of addressing the problem. In this instance, both actions may have accompanied the change of dynasty in 1080. The subsequent cessation of immunities to foundations, elucidated in this study, and loss of status of some titled officials could be considered as moves to reduce the threats to state revenue and power in the medium term.

Some new official positions (e.g. the appointment of the *taṃrvāc* corps early in the 11th century) were created from the period of Rājendravarman. However, the large increase in the number of official titles in the inscriptions at this time was probably not so much for the reason that they were created then, but because there were now more inscriptions to record them. Since it is highly unlikely that the number of titles would increase and decrease in proportion to the number of inscriptions, it can be inferred that a large proportion of the positions and titles seen in the Angkorian period were established prior to the mid 10th century, and may have been created as part of the formation of the Khmer Empire.

The complexity of titles, ritualised language and ceremonial functions, which created overlapping roles and cross-cutting loyalties, seem unlikely to have prevented the administration from functioning, or restricted the power of the rulers, as intimated by Mabbett (1977). The protocols and chains of authority seen from the inscriptions were understood and acted on. The administration appears to have functioned effectively, albeit not necessarily efficiently, and there is much epigraphic evidence that the king's power was real, unlike the

ineffectual authority of rulers observed in the 19th century in Cambodia – indeed that it increased, perhaps from some time prior to the reign of Jayavarman VII.

Religious foundations and gifts to them were often in the name of the ruler who acquired the merit. The strong correspondence found between royal permission for immunities, royal permission for amalgamations and assigning merit for a foundation to the king supports the idea that acknowledging the real or symbolic roles of the rulers was an effective strategy for obtaining such privileges. While the inscriptions were formulaic, it remains the case that the authors were explicitly acknowledging their dependence on the king for their position, status, and wealth and for sanctioning their actions in matters of land, law and religion. The importance of status and hierarchies in Khmer society, as stressed by others, is demonstrated by the range of fines for misdemeanours prescribed at the Lolei monastery in the late 9th century. In this study, some payments have been identified which were in accordance with status: for the sale of land; for fines; and for services performed by officials. Further, depicting status and merit in the inscriptions is judged to have been of greater concern to the elites than commercial matters. This has also been discerned from the differences between the records of items in temple inventories, which stressed the type of precious metal, and the items exchanged in transactions, which stressed the weight.

### 10.2.4 Maintaining systems for accumulating wealth through taxation and commerce

Angkor's wealth was underpinned mainly by rice production. This in turn funded the growth in power and influence of the Khmer state, largely with tax collected at all levels from land, agriculture, commerce and as *corvée*. The state benefited from the increased international trade from the 9th century and this parallels the experience of other states in the region. While Angkor was not an important trading state, the long-held view, that Angkor with its primarily inland agrarian economy was not overly concerned with commerce, needs to be reassessed. An increase in wealth of Angkor's elites and religious foundations has been demonstrated from the 9th century in a comparison of material items in temples and in exchanges. In the Angkorian period, there was a much greater diversity and more precious metal than in the Pre-Angkorian period. Paddy and textiles, the most common Pre-Angkorian exchange items, were replaced principally by metal objects, quality textiles and working animals.

In a previous study (Lustig 2001), the capital was inferred to have been capable of self-sufficiency in its staple crop, rice. It was probably therefore little obligated to provincial land owners, less susceptible to its supply routes being cut off, better equipped to resist attacks, and thus had a formidable power base for controlling its empire. Groslier's (1979) idea of Angkor's water storages acting as insurance for producing enough rice in periods of low or delayed rainfall is sound. The seemingly unprecedented requirement for rice in the capital by

Jayavarman VII suggests this strategy had become less effective by the late 12th century and this might also be supported by recent archaeological findings suggesting deleterious changes to Angkor's hydraulics network had taken place by the 14th century. A reduction in effectiveness of the hydraulic network arguably also impacted adversely on the status of the ruler.

A feature of the *AMP model* which underpinned the work on Angkor by Sedov (1963; 1967), was the state's domination of production. While two inscriptions allude to rulers' interest in the harvest of honey and wax from the Plain of Joncs, no evidence was found in this study that Angkor had an economy strongly controlled by the centre. Production and allocation by the state were probably restricted to strategic and high value goods, such as metals, for example iron at Preah Khan of Kompong Svay and forest products for the elite and for export. However, there is little epigraphic information on the state's level of involvement with strategic or high priority resources,

Little support has been found from the analysis of the inscriptions for those premises of Polanyi's (1957) *substantive economics*, whereby 'archaic' economies lacked price-setting markets and money and functioned through reciprocity and redistribution. The wealth seen in the hands of individuals, used for purchasing land and endowing temples, was arguably acquired through some form of marketised economy, with markets likely located in long-established regional centres and necessarily supplied by merchants, even though these are rarely mentioned in the texts. Markets would have existed in some form much earlier than the late 12th century, when they are first mentioned and depicted. As has been proposed by others, small-scale transactions by barter for basic commodities would have been pragmatic. The variability of prices shown in the inscriptions does not indicate any price fixing, as would be required for a monopolistic market in, for example, a political economy conforming to Smith's (1976) *dendritic central-place system*.

Despite the absence of a term for unit of account in the Angkorian period, it has been concluded that, for the following reasons, it is unlikely that the Khmer were without one or abandoned its use after the Pre-Angkorian period:–

- A unit of account is essential in a complex society.
- In both Pre-Angkorian and Angkorian period texts, a variety of terms express the use of a number of similar sophisticated monetary concepts, including the concept of relative value.
- Whereas the seemingly random lists of exchange goods in the inscriptions indicated to several researchers a disregard for values, it has been held in this study that material values were important in exchanges and in religious

> donations, and that there was therefore some hierarchy of values. Many more gold than silver objects were given to temples, but more silver than gold objects were used in exchanges. The gifts to deities were conceivably of the highest status, accruing the highest merit.

The view of a low level of domestic commercial activity has led some to the conclusion that the economy was centrally regulated, which meant that commercial transactions were on a small scale and prestige goods were circulated either by the elite or were held in the temple complexes. This is not supported here, since barter can use high value goods for large or long distance transactions, as evidenced by some purchases of land in the Angkorian inscriptions. Moreover, concern for weights in exchanges and the evidence in disputes over what had been paid for land strongly suggest prices were not controlled. The decentralised network for administration and the inherently poor sustainability of administered economies without price-setting markets (Ericson 2008), argue against the economy being controlled. Moreover, it has been argued that regional markets, probably located at centres within temple clusters, were in existence well before they are first depicted, to provide prestige goods for increased numbers of wealthy elite and for the foundations in the Angkorian period. While Angkor did not have money, its level of marketisation need not have been low in comparison with other Southeast Asian polities also having relatively low levels of monetisation. Another argument for lack of money, that prestige commodities were restricted to the temple complexes, cannot be supported either, since rulers and their courts participated to a large degree in the circulation of wealth, as evidenced in the temple inscriptions.

The study found no indications of redistribution of food to low status food producers at the temples. In one case of redistribution, the recipients were designated *khñum vraḥ* (servants of the god), conceivably not of very low status, and the allocation was not sufficient to sustain them. The 3:2 gender ratio for temple workers and their fortnightly work schedule indicate that most of these people produced their own food. Food from villages was allocated at temples, but we do not see how it was distributed otherwise. In the inscriptions, mainly full-time temple officials, such as were involved with ritual, were recorded to be receiving supplies of food, much of it at least officially for ritual purposes, though likely consumed later within the temple.

The study supports the proposition there was widespread levying of the population at many levels. As in some similar societies in South and Southeast Asia, many officials levied the population by tax farming. The food provision to state officials at two temples is tacit evidence of the interdependence of the state, its economy and the religious institutions. No strong basis has been discovered for Sedov and Hall's (1985) idea of the movement of small quantities of taxation resources through a hierarchy of temples (see below). However, it is clear that the temples were the focus of the infrastructure for local administration and revenue collection, as

Hall posits. To this extent, at least, the temple network was enmeshed in the political economy.

### 10.2.5 Enhancing state integration ideologically through a network of temples

An extreme view of the capabilities of ideological control for integrating the state is embodied in the *Theatre State model,* which focuses on the use of ritual to justify the authority of the ruler. Khmer inscriptions offer many instances of religious rituals for which provision is made in foundation charters. As noted by others, use of formulaic symbolic language in many contexts, including economic matters, for example for the amalgamations of temple deities, is typical of the inscription genre. Yet while it is clear that religious symbolism alone did not integrate the state, there are indications that the temples and religious imagery contributed significantly to Angkor's integration. The water control structures around temples, conforming to Indian cosmology, are examples of a design serving both pragmatic and ideological functions.

The idea of a hierarchy of temples stems from Sedov, who noted numerous instances of joined foundation deities in the Angkorian period epigraphy and the sharing of resources between joined foundations, reportedly from lower to higher ranking temples. Hall (1985) extended Sedov's idea into one of state integration, which appears to have some substance. In Hall's *Temple Hierarchy model*, the Khmer state was integrated through a network of temples linking local village temples to larger central temples, themselves joined to state temples. Temple deities were linked by the symbolic sharing of part of their revenue and by shared rituals. Symbolism was used to perpetuate the notion of the ruler, whose status in the 9$^{th}$ century had become that of *devarāja*, embodying the power of the state. In some agreement with Hall, it is proposed in this study that centres of economic and administrative activity developed in conjunction with clusters of temples, effectively reinforcing the link between administrative and ideological control. Hall considered the temples themselves to be these centres. In the absence of actual evidence for this, the temple cluster is assessed as incorporating markets, regional administration and important temples of long duration or prominence, including the 'central temples' of Sedov.

A hierarchical structure for both the deities and the temple network is provisionally supported for the Angkorian period on the following grounds:

- For the Pre-Angkorian period, Vickery has pointed out the existence of a single hierarchy of titles for gods and ruling elites, as well as the practice of joining deities.
- Maxwell (2007) has proposed that these Pre-Angkorian examples represent an amalgamation of old indigenous deities and new Indian gods in the same location.
- In this study, an analysis of the titles of joined deities in the Angkorian period has shown that foundations having gods with Indianised titles sought linkages with foundations whose gods had indigenous titles.

- One instance was found of a structured organisation of temple deities which may be hierarchical. Deities in other societies are known to be ordered hierarchically.
- The practice of joining appears widespread, with numerous examples found in the Angkorian period.
- The interest shown by rulers in the cults of provincial foundations suggests these were important for the state.
- The propensity of founders to 'offer' their foundations to the ruler, to seek to associate their new foundations with royal cults, and the requests to the king for permission to join foundations suggest strong associations between the centre and regional temples.
- Resources shared between joined foundations appear to be both pragmatic and symbolic. The quantity of rice shared between some joined foundations could be an appreciable proportion of the amount consumed at the foundation producing the rice, that is, not always a token amount, as Sedov thought. The fact that royal permission was often sought for amalgamating foundations in the Angkorian period also suggests that the joins were economically motivated, in part at least. Expressions used to describe the practice of joining suggest the pooling of foundation administrations or resources, including personnel.

This evidence adds some credence to the *Temple Hierarchy model*. Whether and how the joined foundations were part of a hierarchical structure for the integration of the empire is not yet clear. No account has been found of a comprehensive structure of linked deities being employed in state integration elsewhere. Joined foundations may have been a vehicle for legitimising many political and economic activities of the state in the name of religion, as was proposed by Hall. From the analysis, it is not clear whether the practice of joining foundations declined and disappeared after the mid 11$^{th}$ century, since their lessening frequency could be an evidential artefact due to the decline in the number of inscriptions.

## 10.3 Conclusion

The findings of this thesis demonstrate that Angkor was not fundamentally different from contemporary states in the region — with one possible exception, the employment of a hierarchical structure of joined deities and their temples in state integration. Matters said to differentiate Angkor have been assessed as stemming from colonial viewpoints of Cambodian society or from over-reliance on literal and culturally biased interpretations of the temple inscriptions, written by and for a small and elite portion of the society. The inscriptions did not talk about day-to-day matters, but they do inform us about the priorities of elites: royal patronage; the ruler's power, and control over land and labour. While hierarchies and dependence on patronage were a strong focus of the inscriptions of the Angkorian period, these traits appear to have been similar to those in much of Southeast Asia. The inscription

genre stressed these aspects to the exclusion of other concerns that are perhaps of greater economic interest to us, and clearly did not represent the whole of the economy.

The idea that Angkor was particularly rigid or unchanging is not supported. The state dealt with stresses and altered circumstances in ways similar to contemporary states in the region. If the system became too unstable, a new ruler or dynasty took over, the administrative structure was changed, or the rulers curtailed the activities of sections of society whose wealth and power posed a threat to the centre. Restructuring of status titles in the administration and removal of privileges such as immunities from a section of the elite class were arguably reactions by Khmer rulers faced by threats from rival groups. The complexity of the administration and titles did not prevent political changes from taking place in the Angkorian state.

An absence of money and the lack of evidence of a unit of account, together with the long lists of barter items in the inscriptions, were interpreted by some as demonstrating the Khmer's lack of development of monetary concepts, taking the many barter items of the temple inscription transactions as representing the whole economy. Although it can be said that other states more engaged in international trade were more likely to use money, none in the region, including active trading states such as Java, were fully monetised during the Angkorian period. It cannot be ascertained if the absence of money in the Angkorian period was a deliberate choice of rulers, the result of reluctance to change, or whether circumstances were such that the changes would have brought little benefit to elites or the state. Angkor could be viewed as being towards the low end of a continuum of monetisation. Arguably there were markets in regional centres for high value goods, where prices were negotiated, using a unit or units of account. Despite a primarily inland agrarian economy after the Funan period, trade appears to have been continual.

Few of the processes or strategies highlighted in this study, and which helped to sustain Angkor for so long, appear to have been unique in themselves. Inevitably there were others that were not uncovered in this investigation. Nevertheless, the manipulation of these processes and the application of the strategies were almost certainly unique. Starting from the existing resources of the area and the long-standing communications and trade network, the Khmer were successful in forming the Angkorian Empire, almost certainly in the face of resistance from other vested interests. Angkor's integrity was subject to frequent internal and external threats. For the this empire to maintain itself for so long, it needed to continually accumulate wealth from its own resources and to supplement what it lacked through international trade or conquest and plunder. The empire needed to improve its communications network, particularly with its hinterland. An effective system of delegation to regional centres had to be developed to overcome the logistical problems of controlling such a large area. It was necessary to establish incentives to ensure loyalty in its provinces and at the

same time to establish a means of promulgating state ideology. The empire apparently did this first by co-opting local religious cults and incorporating their deities into a structure accessible to state influence; secondly by providing incentives to supporters to establish private foundations — immunities from levies and benefits from amalgamating foundations — which augmented the temple network; finally, the political economy could be modified to cope with stresses imposed upon it. The adjustments resulted in cyclical variations in relative influence of the rulers and an elite class, and in territorial gains and losses. These are seen in the context of an overall trend to increased central authority, as well as changing patterns in international trade and interactions with other polities.

When some of the processes and strategies became less effective, the Khmer Empire was less able to respond to challenges to its integrity. To appreciate how Angkor functioned can lead us on to a way of thinking about how it declined.

# References


Abu-Lughod, J. (1989). Before European Hegemony. The World System AD 1250-1350. New York, Oxford University Press.

Acharya, S. K. (2004). "Land Measures in early Medieval Orissa." The Orissa Historical Research Journal **XLVII** (No. 1): 90-98.

Acker, R. (1998). "New geographical tests of the hydraulic thesis at Angkor." South East Asia Research **6**(1): 5-47.

Acker, R. (2006). Hydrology and the Siting of Yasodharapura. Phnom Bakheng Workshop on Public Interpretation. J. Rousakis. Siem Reap, Cambodia, Center for Khmer Studies**:** 72-86.

Albrecht, M. (1905). "Reconnaissance de l'ancienne chaussee khmer." Bulletin de la Societe des etudes indochinoises de Saigon **3**(17).

Alcock, S. E. and K. D. Morrison (2001). Imperial Ideologies. Empires: perspectives from archaeology and history. S. Alcock, T. N. D'Altroy, K. D. Morrison and C. M. Sinopoli. Cambridge, Cambridge University Press**:** 279-282.

Amat, F. (2007). Temples de Roluos: à la recherche du palais royal. Cambodge Soir. Phnom Penh (April 5)**:** p. 12.

AmosWEB. (2006). 2007, from http://www.amosweb.com/cgi-bin/awb_nav.pl?s=gls.

Argensola, B. L. (1609). Conquista de las Islas Malucas. Madrid, A. Martin.

Aung Chain, T. (2005). "Financial Transactions in the Bagan Period." Myanmar Historical Research Journal **Vol. 16**: 1-18.

Aung Thwin, M. (1976). Kingship, the Saṅgha, and Society in Pagan. Explorations in Early Southeast Asian History: the origins of Southeast Asian statecraft. K. R. Hall and J. K. Whitmore. Ann Arbor, Center for South and Southeast Asian Studies, The University of Michigan**:** 205-256.

Aung Thwin, M. (1983). Divinity, Spirit, and Human: Conceptions of Classical Burmese Kingship. Centers, symbols and hierarchies: essays on the classical states of Southeast Asia. L. Gesick. New Haven, Conn., Yale University Southeast Asia Studies. **Monograph Series No. 26**.

Aung Thwin, M. (1985). Pagan: The Origins of Modern Burma. Honolulu, University of Hawaii Press.

Aymonier, E. (1900-1904). Le Cambodge: 1. Le royaume actuel 2. Les provinces siamoises 3. Le groupe d' Angkor et l' histoire. Paris, E. Leroux.

Barrett, A. M. F. (1968). Two old Javanese copperplate inscriptions of Balitung, University of Sydney. **Unpublished M.A. thesis:** 184.

Barth, A. and M. A. Bergaigne (1885-1893). Notices et extraits des manuscrits de la Bibliotheque nationale et autres bibliotheques, publies par l'Institut national de France faisant suite aux

notices et extraits lus au comite etabli dans l'Academie des inscriptions et belles-lettres: 1. Inscriptions sanscrites du Cambodge 2. Inscriptions sanscrites de Campa et du Cambodge. Paris, Imprimerie Nationale.

Bedford, P. R. (2005). The Economy in the Near East in the First Millennium BC. The Ancient Economy. Evidence and Models. J. G. Manning and I. Morris. Stanford, Stanford University Press: 58-83.

BEFEO (1901-). Bulletin de l'École française d'Extrême-Orient. Paris, École française d'Extrême-Orient.

Bellina, B. and I. Glover (2004). Early Contact with India and the Mediterranean. Southeast Asia. From prehistory to history. I. Glover and P. Bellwood. London; New York, Routledge Curzon: 68-88.

Benet, F. (1957). Explosive Markets: The Berber Highlands. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press: 188-217.

Bennet, J. (1984). "Text and context: Levels of approach to the integration of archaeological and textual data in the Late Bronze Age Aegean." Archaeological Review from Cambridge **3**: 63-75.

Bhattacharya, K. (1991). Recherches sur le vocabulaire des inscriptions sanskrites du Cambodge. Paris, Ecole française d'Extrême-Orient.

Bhattacharya, K. (1997). The Religions of Ancient Cambodia. Sculpture of Angkor and Ancient Cambodia, Millennium of Glory. H. I. Jessup and T. Zephir. New York, Thames & Hudson: 34-52.

Blanton, R. E. (1998). Beyond Centralization. Archaic States. G. M. Feinman and J. Marcus. Santa Fe, School of American Research Press: 135-172.

Blanton, R. E., G. M. Feinman, S. A. Kowalewski and P. N. Peregrine (1996). "A Dual-Processual Theory for the Evolution of Mesoamerican Civilization." Current Anthropology **Vol. 37** (No. 1): 1-14.

Bleiberg, E. (1995). The Economy of Ancient Egypt. Civilizations of the Ancient Near East. J. M. Sasson. New York, Simon & Schuster and Prentice Hall International. **Vol. III**.

Boomgaard, P. (2005). Labour, Land, and Capital in Pre-Modern and Early-Modern Southeast Asia. Global Economic History Network Conference: The Rise, Organization, and Institutional Framework of Factor Markets, Utrecht University.

Bourdieu, P. (1977). Outline of a theory of practice. Cambridge; New York, Cambridge University Press.

Bourdonneau, E. (2003). "Culturalisme et historiographie du Cambodge ancien: à propos de la hiérarchisation des sources de l'histoire khmère." Moussons **No. 7**: 39-70.

Briggs, L. P. (1999[1951]). The ancient Khmer Empire. Bangkok, White Lotus.

Bronson, B. (1978). Angkor, Anuradhapura, Prambanan, Tikal: Maya Subsistence in an Asian Perspective. Pre-Hispanic Maya Agriculture. P. Harrison and B. Turner. Albuquerque, University of New Mexico Press: 255-300.

Bronson, B. (1986). "Book Review. Nagara and Commanderry: Origins of Southeast Asian Urban Traditions (Wheatley, P.)." Economic Geography **62** (No. 1): 85-89.

Bronson, B. (1992). Patterns in the early Southeast Asian metals trade. Early metallurgy, trade and urban centres in Thailand and southeast Asia: 13 archaeological essays. I. Glover, J. Villiers and S. Pornchai. Bangkok, White Lotus**:** 63-114.

Brown, R. M. (1988). The ceramics of South-East Asia : their dating and identification. Singapore ; New York, Oxford University Press.

Bruguier, B. (2000). "Les ponts en pierre du Cambodge ancien. Aménagement ou contrôle du territoire?" Bulletin de l'Ecole française d'Extrême-Orient **87**: 529-551.

Brumfiel, E. M. (2001). Aztec hearts and minds; religion and the state in the Aztec empire. Empires: perspectives from archaeology and history. S. Alcock, T. N. D'Altroy, K. D. Morrison and C. M. Sinopoli. Cambridge, Cambridge University Press.

Brumfiel, E. M. and T. K. Earle (1987). Specialization, exchange, and complex societies: an introduction. Specialization, exchange, and complex societies. E. M. Brumfiel and T. K. Earle. Cambridge; London; New York, Cambridge University Press**:** 1-9.

Chakravarti, A. (1980). The Sdok Kak Thom Inscription, Part I: A study in Indo-Khmer civilization. Calcutta, Sankrit College.

Chakravarti, A. K. (1972-73). "Caste System in Ancient Cambodia." Journal of Ancient Indian History **Vol. VI** (1-2): 143-158 (discussion of Mabbett (JAIH VI: 5-38).

Chandler, D. P. (1996[1970]). An Eighteenth Century Inscription from Angkor Wat. Facing the Cambodian past: selected essays 1971-1994. Chiang Mai, Silkworm Books**:** 15-24.

Chandler, D. P. (1996[1978]). Songs at the Edge of the Forest. Facing the Cambodian past: selected essays 1971-1994. Chiang Mai, Silkworm Books**:** 76-99.

Chandler, D. P. (1996[1982]). Normative Poems (*Chbap*) and Pre-colonial Cambodian Society. Facing the Cambodian past: selected essays 1971-1994. Chiang Mai, Silkworm Books**:** 45-60.

Chandler, D. P. (1996[1983]). A history of Cambodia. Chiang Mai, Silkworm Books.

Chang, S. T.-H. (1991). Commodities Imported to the Chang-chou Region of Fukien during the Late Ming Period. A preliminary Analysis of the Tax Lists found in *Tung-hsi-yang k'ao*. Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400-1750. R. Ptak and D. Rothermund. Stuttgart**:** 159-194.

Chau, J.-K. (1966[ca. 15th c.]). His Work on the Chinese and Arab Trade in the twelfth and thirteenth Centuries, entitled Chu-fan-chi. F. Hirth and W. Rockhill. (ed. and trans.) Amsterdam, Oriental Press.

CIESIN. (2005). "Gridded Population of the World Version 3 (GPWv3)." Retrieved 2008, from http://sedac.ciesin.columbia.edu/gpw.

CISARK. (2007). "Carte Interactive des sites archéologiques Khmers." Retrieved December 2007, from http://www.site-archeologique-khmer.org.

Claessen, H. J. M. and P. van de Velde (1985). Sociopolitical Evolution as a Complex Interaction. Development and Decline: the Evolution of Sociopolitical Organization. H. J. M. Claessen,

P. van de Velde and M. E. Smith. Massachusetts, Bergin and Garvey Publishers Inc.: 246-263.

Claessen, H. J. M. and P. van de Velde (1987). Introduction. Early State Dynamics. H. J. M. Claessen and P. van de Velde. Leiden; New York, E.J. Brill: 1-23.

Coe, M. D. (2003). Angkor and the Khmer Civilization. New York, Thames & Hudson.

Cœdès, G. (1911). "Étude Cambodgiennes; 3. Une nouvelle inscription du Phnom Bahheng." Bulletin de l'École Française d'Extreme-Orient **11**: 398-400.

Cœdès, G. (1937-1966). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine. E. d. Boccard. Paris, École française d'Extrême-Orient. **Vols. I-VIII**.

Cœdès, G. (1942). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. II). Paris, École française d'Extrême-Orient.

Cœdès, G. (1951). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. III). Paris, École française d'Extrême-Orient.

Cœdès, G. (1952). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. IV). Paris, École française d'Extrême-Orient.

Cœdès, G. (1953). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. V). Paris, École française d'Extrême-Orient.

Cœdès, G. (1954). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. VI). Paris, École française d'Extrême-Orient.

Cœdès, G. (1961). "Les expressions vraḥ kamrateṅ an et kamrateṅ jagat en vieux-khmer." The Adyar Library Bulletin **25** (Special Jubilee Number): 447-460.

Cœdès, G. (1963). "Le XIe siècle dans la peninsule indochinoise." France-Asie **NS XVIII** (No. 173): 247-253.

Cœdès, G. (1964). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. VII). Paris, École française d'Extrême-Orient.

Cœdès, G. (1966). Inscriptions du Cambodge. Collection de textes et documents sur l'Indochine (Vol. VIII). Paris, École française d'Extrême-Orient.

Cœdès, G. (1968[1964]). The Indianized states of Southeast Asia. Honolulu, University of Hawaii Press.

Cœdès, G. (1989). Articles sur le pays khmer (Tome I). Paris, École française d'Extrême-Orient.

Cœdès, G. (1992[1906]). La stèle de Ta-Prohm. Articles sur le pays khmer. Réimpression des Articles de George Cœdès parus dans le BEFEO. G. Cœdès. Paris, École française d'Extrême-Orient. **Tome II:** 11-52.

Cœdès, G. (1992[1941]). La stèle de Prah Khan d'Angkor. Articles sur le pays khmer. Réimpression des Articles de George Cœdès parus dans le BEFEO. G. Cœdès. Paris, École française d'Extrême-Orient. **Tome II:** 119-165.

Cœdès, G. and P. Dupont (1992[1943]). Les stèles de Sdok Kak Thom, Phnom Sandak et Prah Vihar. Articles sur le pays khmer. Réimpression des Articles de George Cœdès parus dans le BEFEO. G. Cœdès. Paris, École française d'Extrême-Orient. **Tome II:** 167-265.

Cremin, A. (2006). Chinese ceramics at Angkor. Indo Pacific Prehistory Association, Manila.

Cribb, J. (1980). The Far East. Coins: an illustrated survey, 650 BC to the present day. M. J. Price. London, Hamlyn in assn. with British Museum Publications Limited.

Cribb, J. (1981). A Hoard of Cambodian Coins. Coin Hoards VI. London, Royal Numismatics Society: 129-135.

D'Altroy, T. N. (1992). Provincial Power in the Inka Empire. Washington, Smithsonian Institution Press.

D'Altroy, T. N. (2002). The Incas. Oxford, Blackwell Publishing Ltd.

Dagens, B. (2003). Les Khmers. Paris, Les Belles Lettres.

Dalton, G. (1975). Polanyi's Analysis of Long-Distance Trade. Ancient Civilization and Trade. J. Sabloff and C. C. Lamberg-Karlovsky. Albuquerque, University of New Mexico Press: 63-127.

de Casparis, J. G. (1961). "New Evidence on Cultural Relations between Java and Ceylon in Ancient Times." Artibus Asiae **Vol. 24** (3/4): 241-248.

de Malglaive, J. and A.-J. Rivière (2000[1879-1895]). Travels in Central Vietnam and Laos. Bangkok, White Lotus Press.

de Mestier du Bourg, H. (1970). "La première moitié de Xle siècle au Cambodge: Suryavarman 1er, sa vie et quelques aspects des institutions à son époque." Journal Asiatique **Vol. 258** (3-4): 281-314.

Deloche, J. and T. Walker (1993). Transport and communications in India prior to steam locomotion. Delhi ; New York, Oxford University Press.

Delvert, J. (1961). Le paysan cambodgien. Paris, Mouton.

Diffloth, G. (1977). "Towards a History of Mon-Khmer: Proto-Semai Vowels." Southeast Asian Studies (The Centre for Southeast Asian Studies, Kyoto University) **14**(4): 463-495.

Diffloth, G. (2005). Looking at Pre-Angkorian from still earlier times. Contemporary Research on Pre-Angkor Cambodia. Siem Reap, Center for Khmer Studies (10th -12th January).

Dobson, L. (2005). "Time, Travel and Political Communities: Transportation and Travel Routes in Sixth-and-Seventh-century Northumbria." The Heroic Age, Issue 8 (June) http://www.mun.ca/mst/heroicage/issues/8/dobson.html.

Drennan, R. D. (1984). "Long Distance Transport Costs in Pre-Hispanic Mesoamerica." American Anthropologist **New Series, Vol. 86** (No. 1): 105-112.

Dumarçay, J. and M. Smithies (1995). Cultural sites of Burma, Thailand, and Cambodia. Kuala Lumpur; New York, Oxford University Press.

Dumarçay, J. and M. Smithies (1998). The site of Angkor. New York, Oxford University Press.

Dupont, P. (1952). "Études sur l'Indochine ancienne, 2. Les débuts de la royauté angkorienne." Bulletin de l'Ecole Francaise d'Extreme Orient **46**(1): 119-176.

Eade, J. C. (1995). The Calendrical Systems of Mainland South-East Asia. Leiden, Brill Academic Publishers.

Eade, J. C. (2006). Dating the Cambodian Inscriptions. Angkor - landscape, city and temple. University of Sydney, Department of Archaeology and the School of Geosciences, July 17-22.

Ebihara, M. (1984). "Societal organisation in sixteenth and seventeenth century Cambodia " Journal of Southeast Asian Studies **Vol. 15**(May): 280-295.

Edwards, P. (2005). Taj Angkor: Enshrining l'Inde in le Cambodge. France and "Indochina": Cultural Representations. K. Robson and J. Yee. Lanham, Md., Lexington Books**:** 13-27.

Edwards, P. (2007). Cambodge : the cultivation of a nation, 1860-1945. Honolulu, University of Hawai'i Press.

Egami, N. (1974). "Migration of the Cowrie-shell Culture in East Asia." Acta Asiatica, Bulletin of the Institute of Eastern Culture **Vol. 26**: 1-52.

Einzig, P. (1966). Primitive money: in its ethnological, historical and economic aspects. Oxford, Pergamon Press.

Eisenstadt, S. N. (1963). The Political Systems of Empires. London, The Free Press of Glencoe (Collier-Macmillan Ltd.).

Eisenstadt, S. N. (1988). Beyond Collapse. The Collapse of Ancient States and Civilizations. N. Yoffee and G. L. Cowgill. Tucson, The University of Arizona Press**:** 236-243.

Elvin, M. (1973). The Pattern of the Chinese Past. London, Eyre Methuen.

Engelhardt, R. A. (1995). "Two Thousand Years of Engineering Genius on the Angkor Plain (Cambodia)." Expedition **Vol. 37** ((3)): 18-29.

Ericson, R. (2008). Command Economy. New Palgrave Dictionary of Economics Online. S. Durlauf and L. Blume. New York, Palgrave Macmillan http://www.dictionaryofeconomics.com/search_results?q=&button_search=Search**:** .

Errington, S. (1983). The place of regalia in Luwu. Centers, symbols, and hierarchies: essays on the classical states of Southeast Asia. L. Gesick. New Haven, Conn., Yale University Southeast Asia Studies**:** 194-241.

ESCAP (1990). Atlas of mineral resources of the ESCAP region. Vol. 7, Lao People's Democratic Republic. New York, United Nations. Economic and Social Commission for Asia and the Pacific.

ESCAP (1993). Atlas of mineral resources of the ESCAP region. Vol. 10, Cambodia. New York, United Nations. Economic and Social Commission for Asia and the Pacific.

ESCAP (1996). Geology and mineral resources of the ESCAP region. Vol. 12, Myanmar New york, United Nations. Economic and Social Commission for Asia and the Pacific.

ESRI. (2004-2007). "Mapping Distance and Density, in Learning ArcGIS Spatial Analyst." from http://training.esri.com/Courss/LearnSA/M5/density_surfacs68665.cfm. Accessed October 2007.

Evans, D., C. Pottier, R. Fletcher, S. Hensley, I. Tapley, A. Milne and M. Barbetti (2007). "A new archaeological map of the world's largest preindustrial settlement complex at Angkor, Cambodia." Proceedings of the National Academy of Science of the U.S.A. **104** (35).

Evans, D. O. (2007). Putting Angkor on the Map: A New Survey of a Khmer 'Hydraulic City' in Historical and Theoretical Context. Department of Archaeology. Sydney, University of Sydney. **Unpublished PhD thesis**.

Feinman, G. M. (1998). Scale and Social Organisation. Perspectives on the Archaic State. Archaic States. G. M. Feinman and J. Marcus. Santa Fe, School of American Research Press: 96-133.

Filliozat, V. (2003). "Indian Epigraphy and its influence on Cambodia." Siksācakr **No. 5**: 12-15.

Finley, M. I. (1973). The Ancient Economy. Berkeley and Los Angeles, University of California Press.

Finot, L. (1925). "Dharmaçalas du Cambodge." Bulletin de l'École Française d'Extrême Orient **25**: 417-422.

Fletcher, R. (2004). Materiality, space, time and outcome. A Companion to Archaeology. J. L. Bintliff. Malden, MA, Blackwell Publishing.

Fletcher, R., D. Evans and e. al (2004). "Angkor: Extent, settlement pattern and ecology. Preliminary results of an AIRSAR survey in September 2000." Bulletin of the Indo-Pacific Prehistory Association **24**: 130-138.

Fletcher, R., D. Penny, D. Evans, C. Pottier, M. Barbetti, M. Kummu and T. Lustig (2008). "The water management network of Angkor, Cambodia." Antiquity **82** (317): 658-670.

Fletcher, R. and C. Pottier (2002). "The Gossamer city: A new inquiry." Museum International **54**: 23-27.

Fletcher, R., C. Pottier, D. Evans and M. Kummu (2008). "The Development of the Water Management System of Angkor: A Provisional Model." IPPA Bulletin **28**: 57-66.

Fletcher, R. J., M. Barbetti, D. Evans, H. Than, I. Sorithy, K. Chan, D. Penny, C. Pottier and T. Somaneath (2003). "Redefining Angkor: structure and environment in the largest, low density urban complex of the pre-industrial world." Udaya **4**: 107-121.

Fox, J. and J. Ledgerwood (1999). "Dry season flood-recession rice in the Mekong delta: Two thousand years of sustainable agriculture?" Asian Perspectives: The Journal of Archaeology for Asia and the Pacific **Vol. 38** 37-50.

Franiatte, M. (2000). "Nouvelles analyses de la céramique khmère du Palais Royal d'Angkor Thom." Udaya **I**: 91-124.

Frank, A. G. (1998). ReOrient. Global Economy in the Asian Age. Berkeley, University of California Press.

Frank, A. G. and B. K. Gills (1993). The 5,000-Year World System. An interdisciplinary introduction. The World System. Five hundred years or five thousand? A. G. Frank and B. K. Gills. London and New York, Routledge: 3-55; 297-307.

Frasch, T. (1940). Economic Life of the Early Burman. Rangoon University College Economics Society. Rangoon, Bangkok: Myanmar Book Centre and Book Promotion and Services Ltd.

Freeman, M. (1996). A Guide to Khmer Temples in Thailand and Laos. New York & Tokyo, Weatherhill.

Fritz, J. M. (1986). "Vijayangagara: Authority and Meaning of a South Indian Imperial Capital." American Anthropologist **New Series Vol. 88** (No. 1): 44-55.

Garami, F. and I. Kertai (1993). Water Management in the Angkor Area. Budapest, Angkor Foundation.

Garnier, F. ([1996-98]1873). Voyage d'exploration en Indo-Chine effectué pendant les années 1866, 1867 et 1868 par une commission Française présidée par M. Doudart de Lagrée. Paris, Hachett et Cie. Published as the Mekong Exploration Mission Report 1866-1868, translated in 3 vols. with introduction by W. Tipps.

Gaucher, J. (2004). "Angkor Thom, une utopie réalisée? Structuration de l'espace et modèle d'urbanisme ancien dans le Cambodge ancien." Arts Asiatiques **No. 59**: 58-86.

Geertz, C. (1980). Negara: the theatre state in nineteenth-century Bali. Princeton, N.J., Princeton University Press.

Geertz, C. (1983). Introduction. Centers, symbols, and hierarchies: essays on the classical states of Southeast Asia. L. Gesick. New Haven, Conn., Yale University Southeast Asia Studies: 1-8.

Gills, B. K. (1993). Hegemonic Transitions in the World System. The World System. Five hundred years or five thousand? A. G. Frank and B. K. Gills. London and New York, Routledge: 115-140.

Gills, B. K. and A. G. Frank (1993). World Systems Cycles, Crises, and Hegemonic Shifts, 1700 BC to 1700 AD. The World System. Five hundred years or five thousand? A. G. Frank and B. K. Gills. London and New York, Routledge: 143-199.

Gledhill, J. and M. J. Rowlands (1982). Materialism and socio-economic process in multi-linear evolution. Ranking, resource and exchange. C. Renfrew and S. Shennan. Cambridge, Cambridge University Press: 144-149.

Goloubew, V. (1933). "Le Phnom Bakhèn 1932 et la ville de Yaçovarman. Rapport sur une mission archéologique dans la région d'Angkor en août-novembre " BEFEO **33** (1): 319-344.

Grave, P. R. (1995). The Shift to Commodity: A study of ceramic production and upland-lowland interaction in Northwesrern Thailand 1000-1650 AD. Prehistoric and Historic Archaeology &The NWG Macintosh Centre for Quaternary Dating, University of Sydney. **Unpublished PhD thesis**.

Green, G. (2000). "Indic Impetus? Innovations in Textile Usage in Angkorian Period Cambodia." Journal of Economic and Social History of the Orient **43**(3): 277-313.

Green, G. (2003). Traditional textiles of Cambodia: cultural threads and material heritage. Bangkok, River Books.

Grierson, P. (1977). The origins of money. London, The Athlone Press.

Griffiths, A. (2005). "La Stèle d'Installation de Śrī Tribhuvaneśvara: Une Nouvelle Inscription Préangkorienne du Musée National de Phnom Penh (K. 1214)." Journal Asiatique **293** ((1)): 11-43.

Griswold, A. B. and P. N. Nagara (1971). "Inscription of Ramkhamhaeng." Journal of the Siam Society **Vol. 59 (2)** (Epigraphic and Historic Studies No. 9).

Groslier, B. P. (1958). Angkor et le Cambodge au XVIe Siècle d'après les sources Portugaises et Espagnoles. Annales du Musée Guimet. Paris, Presses Universitaires de France. **Tome 63**.

Groslier, B. P. (1973). Inscriptions du Bayon Le Bayon, Mémoires Archéologiques, III-2. J. Dumarcay and B. P. Groslier. Paris, EFEO: 83-332.

Groslier, B. P. (1979). "La Cité Hydraulique Angkorienne." Bulletin de l'Ecole Francaise d'Extreme Orient **66**: 161-202.

Groslier, B. P. (1981). Introduction to the ceramic wares of Angkor. Khmer ceramics, 9th-14th century. D. Stock. Singapore, Southeast Asian Ceramic Society: 9-39.

Groslier, B. P. (1998[1974]). Agriculture et religion dans l'empire angkorien. Mélanges sur l'archéologie du Cambodge Études-rurales. Réimpressions de l'école française d'extrême-orient. Originally published in Etudes rurales No. 53-54-55-56 p. 95-117. J. Dumarçay. Paris, L'école française d'extrême-orient: 105-129.

Groslier, B. P. (1998[1981]). La céramique chinoise en Asie du Sud-Est: quelque points de méthode. Archipel 21 (1981): 93-121. Reprinted in Mélanges sur l'archéologie du Cambodge (1949-1986) / Bernard Philippe Groslier; textes réunis et présentés par Jacques Dumarçay. Paris, École Française d'Extrême-Orient: 93-121.

Groslier, B. P. (1998[1986]). For a Geographic History of Cambodia. Mélanges sur l'archéologie du Cambodge (1949-1986), Textes réunis et présentés par Jacques Dumarçay. Reimpression de l'École française d'Extrême-Orient. Originally published in Seksa Khmer 8-9, 1985-1986: 31-76. **No. 10:** 255-291.

Gutman, P. (1978). "The ancient coinage of Southeast Asia." Journal of the Siam Society **66**(1): 8-21.

Hagesteijn, R. (1987). The Angkor State: Rise, Fall, and in between. Early State Dynamics. H. J. M. Claessen and P. v. d. Velde. Leiden ; New York, E.J. Brill: 154-169.

Hagesteijn, R. (1989). Circles of kings: political dynamics in early continental Southeast Asia. Dordrecht, Holland; Providence, U.S.A., Foris Publications.

Hall, K. R. (1975). "Khmer Commercial Development and Foreign Contacts under Sūryavarman I." Journal of the Economic and Social History of the Orient **Vol. XVIII** (Part III): 318-336.

Hall, K. R. (1980). Trade and Statecraft in the Age of Colas. New Delhi, Abhinav Publications.

Hall, K. R. (1985). Maritime trade and state development in early southeast Asia. Sydney, George Allen & Unwin.

Hall, K. R. (1999[1992]). Economic History of Early Southeast Asia. The Cambridge History of Southeast Asia. Volume One: From early times to c. 1500. N. Tarling. Cambridge, Cambridge University Press: 183-275.

Hall, K. R. and J. K. Whitmore (1976). Southeast Asian Trade and the Isthmian Struggle, 1000-1200 A.D. Explorations in early Southeast Asian history : the origins of Southeast Asian statecraft. K. R. Hall and J. K. Whitmore. Ann Arbor, Center for South and Southeast Asian Studies, University of Michigan: 303-340.

Hassig, R. (1985). Trade, Tribute and Transportation: The Sixteenth-Century Political Economy of the Valley of Mexico. Norman, University of Oklahoma Press.

Hassig, R. (1988). Aztec Warfare: Imperial Expansion and Political Control. Norman, University of Oklahoma Press.

Hauser-Schäublin, B. (2005). "Temple and King: Resource Managemant, Ritual and Redistribution in Early Bali." Journal of the Royal Anthropological Institute **11**: 747-71.

Heine-Geldern, R. (1956). Conceptions of state and kingship in Southeast Asia. N.Y., Southeast Asia Program, Dept. of Asian Studies, Cornell University.

Heitzman, J. (1987). "Temple Urbanism in Medieval South India." The Journal of Asian Studies **Vol. 46** (No. 4): 791-826.

Heitzman, J. (1995). State Formation in South India, 850-1280. The State in India 1000-1700. H. Kulke. Delhi, Oxford University Press**:** 162-195.

Helmers, K. (1997). Rice in the Cambodian Economy: Past and Present. Rice Production in Cambodia. H. J. Nesbitt. Manilla, International Rice Research Institute.

Hendrickson, M. (2007). Arteries of Empire. An operational study of transport and communication in Angkorian Southeast Asia (9th to 15th centuries CE). Dept. of Archaeology, University of Sydney. **Unpublished Ph.D. thesis:** 312 leaves.

Henry, J. F. (2004). The Social Origins of Money: The Case of Egypt. Credit and State Theories of Money. The Contributions of A. Mitchell Innes. L. R. Wray. Cheltenham UK; Northhampton MA., Edward Elgar**:** 79-98.

Higham, C. (1989). The archaeology of mainland Southeast Asia: from 10,000 B.C. to the fall of Angkor. Cambridge, Cambridge University Press.

Higham, C. (2001). The civilization of Angkor. London, Weidenfeld & Nicolson.

Higham, C. (2002). Early Cultures of Mainland Southeast Asia. Bangkok, River Books.

Houben, J. E. M. (1996). Introduction. Ideology and status of Sanskrit: contributions to the history of the Sanskrit language. J. E. M. Houben. Leiden ; New York, E.J. Brill.

Hudson, B. (2004). The origins of Bagan : the archaeological landscape of Upper Burma to AD 1300. Faculty of Arts, Dept. of Archaeology, University of Sydney, 2005. **Unpublished Ph. D. thesis:** 324 leaves.

Hudson, M. (2004). The Archaeology of Money: Debt versus Barter Theories. Credit and State Theories of Money. The contributions of A. Mitchell Innes. L. R. Wray. Cheltenham UK; Northhampton MA., Edward Elgar**:** 99-127.

Humphreys, S. C. (2003). History, Economics, and Anthropology: The Work of Karl Polanyi. The Competitiveness of Nations in a Global Knowledge-Based Economy. **Vol. 8, No. 2, 1969** 165-212; http://www.compilerpress.atfreeweb.com/Anno%20Humphreys%20The%20Work%20of%20Karl%20Polanyi%20HT%201969%20a.htm.

Im, S. (1998). Réseaux routiers et moyen de transport a l'époque angkorienne du IX au XIV siècles. Unpublished MA thesis. Paris, École des Hautes Études en Sciences Sociales.

Innes, A. M. ([1913]2004). What is money. Credit and State Theories of Money. The Contributions of A. Mitchell Innes. L. R. Wray. Cheltenham UK; Northhampton MA., Edward Elgar**:** 14-49.

IRRI (2007). Cambodia and IRRI. Facts About Cooperation. Manila, International Rice Research Institute. http://www.irri.org/media/facts/pdfs/cambodia.pdf.

Jacob, J. M. (1960). "The Structure of the Word in Old Khmer." Bulletin of the School of Oriental and African Studies, University of London **23**(2): 351-368.

Jacob, J. M. (1979). Pre-Angkor Cambodia: Evidence from the Inscriptions in Khmer concerning the Common People and their Environment. Early South East Asia: essays in archaeology, history and historical geography. R. B. Smith and W. Watson. New York, Oxford University Press**:** 406-426.

Jacobsen, T. (2003). "Autonomous queenship in pre-classical Cambodia." Journal of the Royal Asiatic Society **13**(3): 357-375.

Jacques, C. (1976). A propos de l'esclavage dans l'ancien Cambodge. Actes du 29e Congrès international des Orientalistes. Asie du Sud-Est continentale. P.-B. Lafont. Paris, L'Asiathèque. **1:** 71-76.

Jacques, C. (1985). The Kamrateṅ Jagat in Ancient Cambodia. Indus Valley to Mekong Delta Explorations in Epigraphy. N. Karashima. Madras, New Era Publications**:** 269-286.

Jacques, C. (1986). Sources on Economic Activities in Khmer and Cham Lands. Southeast Asia in the 9th to 14th centuries. D. G. Marr and A. C. Milner. Canberra, Australia, Institute of Southeast Asian Studies; Research School of Pacific Studies, Australian National University**:** 327-333.

Jacques, C. (2002). "Khmer Epigraphy." Museum International **54**(1-2): 37-43.

Jacques, C. (2007). The historical development of Khmer culture from the death of Sūryavarman II to the 16th century. Bayon. New Perspectives. J. Clark. Bangkok, River Books**:** 30-49.

Jacques, C. and R. Dumont ([1990]1999). Angkor. Cologne, Germany, Könemann.

Jacques, C. and P. Lafond (2007). The Khmer empire: cities and sanctuaries, fifth to thirteenth century. Bangkok, Thailand, River Books.

James, H. (2003). "Trade, Culture and Society in Thailand Before 1200 AD." Journal of the Siam Society **Vol. 91**: 1-73.

Javier, E. L. (1997). Rice Ecosystems and Varieties. Rice Production in Cambodia. H. J. Nesbitt. Manilla, International Rice Research Institute.

Jenner, P. N. (1980). A Chronological Inventory of the Inscriptions of Cambodia. Southeast Asia Paper No. 19, University of Hawaii, Southeast Asian Studies, Asian Studies Program.

Jenner, P. N. (1981). Lexicon of the Dated Inscriptions. A Chrestomathy of pre-Angkorian Khmer. Honolulu, Southeast Asia Paper No. 20, Part II. University of Hawaii, Center for Asian and Pacific Studies, Southeast Asian Studies. **Vol. II**.

Jenner, P. N. (2009). A Dictionary of Pre-Angkorian Khmer, Research School of Pacific and Asian Studies, Australian National University: Pacific Linguistics.

Jenner, P. N. (2009a). A Dictionary of Angkorian Khmer, Research School of Pacific and Asian Studies, Australian National University: Pacific Linguistics.

Jenner, P. N. and S. Pou (1980-81). A Lexicon of Khmer Morphology. Honolulu, University Press of Hawaii: Mon-Khmer Studies 9-10.

Jevons, W. S. (1883). Money and the mechanism of exchange. London, Kegan Paul, Trench & Co.

Johnson, P. M. (1994-2005). "A Glossary of Political Economic Terms." Retrieved 2008, from http://www.auburn.edu/~johnspm/gloss.

Junker, L. L. (2004). Political Economy in the Historical Period. Chiefdoms and States of Southeast Asia. Archaeological Perspectives on Political Economies. G. M. Feinman and L. M. Nicholas. Salt Lake City, The University of Utah Press.

Kapp, D. B. and T. Malten (1997). Report on the Cologne Sanskrit Dictionary Project. [Cologne Digital Sanskrit Lexicon (from Monier-Williams' 'Sanskrit-English Dictionary'] 10th International Sanskrit Conference, Bangalore, http://www.uni-koeln.de/phil-fak/indologie/tamil/mwreport.html.

Karashima, N. (1984). South Indian History and Society: Studies from Inscriptions A.D. 850-1800. Delhi, Oxford University Press.

Karashima, N. (1992). Towards a new formation: South Indian society under Vijayanagar rule. Delhi ; New York, Oxford University Press.

Karashima, N. (2001). South Indian History and Society: Studies from Inscriptions, A.D. 850-1800. History and Society in South India: The Cholas to Vijayanagar. Delhi, Oxford University Press.

Karashima, N. (2002). A Concordance of Nayakas. The Vijayanagar Inscriptions in South India. Oxford, Oxford University Press.

Karashima, N. and P. Shanmugam (1988, 1989). Vijayanagar Rule in Tamil Country as Revealed Through a Statistical Study of Revenue Terms in Inscriptions, Parts 1 and 2. Tokyo, Institute for the Study of Languages and Cultures of Asia and Africa.

King, R. (1999). Indian Philosophy. An Introduction to Hindu and Buddhist Thought. Edinburgh, Edinburgh University Press.

Kohl, P. (1987). The Use and Abuse of World Systems Theory: The Case of the Pristine West Asioan State. Advances in Archaeological Method and Theory. M. B. Schiffer. New York, Academic Press. **Vol. 11:** 1-35.

Krader, L. (1975). The Asiatic mode of production: sources, development and critique in the writings of Karl Marx. Assen, Van Gorcum.

Kulke, H. (1986). The Early and Imperial Kingdom in Southeast Asian History. Southeast Asia in the 9th to 14th Centuries. D. G. Hall and A. C. Milner. Singapore, Institute of Southeast Asian Studies**:** 1-22.

Kulke, H. (1990). Indian Colonies, Indianization or Cultural Convergence? Onderzoeck in Zuidoost-Azië: Agenda's voor de Jaren Negentig. H. S. Nordholt. Leiden, Brill**:** 8-32.

Kulke, H. (1995). The Early and the Imperial Kingdom: A Processual Model of Integrative State Formation in Early Medieval India. The State in India 1000-1700. H. Kulke. Delhi, Oxford University Press**:** 233-262.

Kulke, H. (1995). State Formation in South India, 850-1280. The State in India 1000-1700. H. Kulke. Delhi, Oxford University Press**:** 162-194.

Kulke, H. and D. Rothermund (1998). A History of India. New York, Routledge.

Lakoff, G. (1987). Women, fire, and dangerous things: what categories reveal about the mind. Chicago, University of Chicago Press.

Langsrud, Ø. (n.d.). "Fisher's Exact Test." Retrieved 2008, http://www.langsrud.com/fisher.htm.

Lansing, J. S. (1991). Priests and programmers: technologies of power in the engineered landscape of Bali. Princeton, N.J., Princeton University Press.

LARP. (2008). "Living Angkor Road Phase II." Retrieved 2008 http://larp.crma.ac.th/larp/report/larp2report/larp_2_report_march_2008.pdfhttp://larp.crma.ac.th/larp/report/larp2report/larp_2_report_march_2008.pdf.

Latham, A. J. H. (n.d.). Karl Polanyi: Some Observation. Global History Seminar (Institute of Historical Research) http://www.history.ac.uk/eseminars/sem3.html.

Leach, E. R. (1965). Political systems of Highland Burma. Boston, Beacon Press.

Leighton, A. C. (1972). Transport and communication in early medieval Europe AD 500-1100. Newton Abbot,, David & Charles.

Lieberman, V. B. (2003). Strange parallels: Southeast Asia in global context, c.800-1830. Cambridge; New York, Cambridge University Press.

Long Seam (n.d.). Dictionaire du Khmer Ancien (D'après les inscriptions du Cambodge du VIe.-VIIIe. siècles), Fondation Toyota du Japon.

Loofs-Wissowa, H. (1986). The True Arch and the Corbel Arch in Mainland Southeast Asian Monumental Architecture. Southeast Asia in the 9th to 14th Centuries. D. G. Hall and A. C. Milner. Singapore, Institute of Southeast Asian Studies**:** 239-253.

Lustig, E. (2001). Water and the Transformation of Power at Angkor, 10th to 13th Centuries A.D. Unpublished BA (Hons) Thesis, Department of Prehistoric and Historic Archaeology, University of Sydney.

Lustig, E., D. Evans and N. Richards (2007). "Words across space and time: an analysis of lexical items in Khmer inscriptions, 6th-14th centuries CE." Journal of Southeast Asian Archaeology.

Lustig, T., R. Fletcher, M. Kummu, C. Pottier and D. Penny (2008). Did Traditional Cultures Live In Harmony With Nature? Modern Myths of the Mekong- A Critical Review of Water and Development Concepts, Principles and Policies. O. Varis, M. Kummu and M. Keskinen. Helsinki, University of Technology, Water & Development Publications.

Luttwak, E. N. (1976). The Grand Strategy of the Roman Empire from the First Century A.D. to the Third. Baltimore; London, The Johns Hopkins University Press.

Ly, V. (2002). The Archaeology of Shell Matrix Sites in the Central Floodplain of the Tonle Sap River, Central Cambodia: The Shell Settlement Site of Samrong Sen and Its Cultural Complexity. Department of Foreign Studies, Graduate Program in Area Studies. Tokyo, University of Sophia. **Unpublished PhD thesis**.

M.C.B.A. and E.F.E.O. (2007). Carte Archéologique du Cambodge. Phnom Penh: Cambodia, Ministère de la culture et des beaux-arts & École française d'Extrême-Orient.

Mabbett, I. W. (1977). "Varṇas in Angkor and the Indian caste system." Journal of Asian Studies **XXXVI**(No. 3): 429-442.

Mabbett, I. W. (1977b). "The 'Indianization' of Southeast Asia: Reflections on the Historic Sources." Journal of Southeast Asian Studies **Vol. 8** (pt. 2): 143-161.

Mabbett, I. W. (1978). "Kingship in Angkor." Journal of the Siam Society **66 Part 2**: 1-51.

Mabbett, I. W. (1997). The "Indianization" of Mainland Southeast Asia: A Reappraisal. Living a Life in Accord with Dhamma: Papers in Honor of Professor Jean Boisselier on his Eightieth Birthday. N. Eilenberg, M. C. Subhadradis Diskul and R. L. Brown. Bangkok, Silpakorn University**:** 342-355.

Mabbett, I. W. and D. Chandler (1996). The Khmers, Blackwell.

Macquarie Dictionary (1996). The Macquarie Dictionary. Sydney, Macquarie Library Pty. Ltd.

Majumdar, R. C. (1953). Inscriptions of Kambuja. Calcutta, The Asiatic Society.

Majumdar, R. C. (1980). Kambuja-Deśa; or, An ancient Hindu colony in Cambodia. Philadelphia, Institute for the Study of Human Issues.

Malleret, L. (1959-62). L'Archaeologie du Delta du Mekong. Paris, École française d'Extrême-Orient.

Manguin, P.-Y. (1980). "The South-East Asian Trading Ship: an Historical Approach." Journal of South-East Asian Studies **11** (2).

Manguin, P.-Y. (2004). The archaeology of early maritime polities of Southeast Asia. Southeast Asia. From prehistory to history. I. Glover and P. Bellwood. London; New York, Routledge Curzon**:** 282-313.

Mann, M. (1986). The Sources of Social Power. Cambridge; New York, Cambridge University Press.

Marcus, J. (1998). The Peaks and Valleys of Ancient States: An Extension of the Dynamic Model. Archaic States. G. M. Feinman and J. Marcus. Santa Fe, School of American Research Press**:** 59-94.

Marx, K. (1973[1853]). Surveys from Exile. Political Writings. Harmondsworth, Penguin Books Ltd.

Maspero, G. (1918). "La Frontière de l"Annam et du Cambodge du VIIe au XIV Siècle." Bulletin de l'École française d'Extrême-Orient **XVIII**(3): 29-36.

Maspero, G. (2002[1928]). The Champa kingdom. The history of an extinct Vietnamese culture. Bangkok, White Lotus Press.

Maxwell, T. S. (2007). Religion at the time of Jayavarman VII. Bayon. New Perspectives. J. Clark. Bangkok, River Books**:** 74-135.

Maxwell, T. S. (2007a). Siva y las deidades Naga: la mascaras procesionales de Himachal Pradesh. La Escultura en los Templos Indios: El Arte de la Devocion. J. Guy. Madrid; Barcelona, La Caixa**:** 26-37.

Mayhew, S. (2004[1997]). A dictionary of geography, Oxford: Oxford University Press.

Melitz, J. (1970). "The Polanyi School of Anthropology on Money: An Economist's View." American Anthropologist **72**: 1020-1040.

Melitz, J. (1974). Primitive and modern money: an interdisciplinary approach. Reading, Massachusetts, Addison-Wesley Publishing Company.

Miksic, J. N. (1985). "Traditional Sumatran Trade." Bulletin Ecole Française d'Extreme-Orient **Vol. 74**: 423-67.

Miksic, J. N. (1993). "Review: Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400-1750." Journal of Southeast Asian Studies **March 1993**.

Miksic, J. N. (1995). "Evolving Archaeological Perspectives on Southeast Asia, 1970-1995." Journal of Southeast Asian Studies **26**(1): 46-62.

Miksic, J. N. (2000). "Heterogenetic Cities in Premodern Southeast Asia." World Archaeology **32** (No. 1: Archaeology in Southeast Asia): 106-120.

Miksic, J. N. (2001). "Early Burmese urbanisation: research and conservation." Asian Perspectives: The Journal of Archaeology for Asia and the Pacific **40**(1).

Miksic, J. N. (2004). The Classical Cultures of Indonesia. Southeast Asia. From prehistory to history. I. Glover and P. S. Bellwood. London; New York, Curzon**:** 234-56.

Miksic, J. N. (2006). "The City Misunderstood: Orthogenetic Cities in Southeast Asia." TAASA Review. The Journal of the Asian Arts Society of Australia **Vol. 15**(3): 8-9.

Mill, J. S. (1868). Principles of political economy, with some of their applications to social philosophy. London, Longmans, Green, Reader, and Dyer.

Mitchiner, M. (2004). Ancient trade and early coinage. London, Hawkins Publications.

Monier-Williams (2005). Cologne Digital Sanskrit Lexicon (from Monier-Williams 'Sanskrit-English Dictionary). Cologne, Institute of Indology and Tamil Studies, University of Cologne. http://webapps.uni-koeln.de/tamil/.

Moore, E. (1989). "Water Management in Early Cambodia: Evidence from Early Photography." Geographical Journal **Vol. 155** (2): 204-14.

Moore, E. (1992). Water enclosed sites: links between Ban Takhong, Northeast Thailand and Cambodia. The Gift of water. J. Rigg. London, School of African and Oriental Studies.

Morris, C. (1986). Storage, supply, and redistribution in the economy of the Inka state. Anthropological history of Andean polities. J. V. Murra, N. Wachtel and J. Revel. Cambridge; New York; Paris, Cambridge University Press ; Editions de la Maison des sciences de l'homme**:** 59-68.

Morris, C. (1998). Inka Strategies of Incorporation and Governance. Archaic States. G. M. Feinman and J. Marcus. Santa Fe and New Mexico, School of American Research Press**:** 293-309.

Morrison, K. D. (1997). "Commerce and Culture in South Asia: Perspectives from Archaeology and History." Annual Review of Anthropology **Vol. 26**: 87-108.

Morrison, K. D. (1997a). Agriculture at the edges: Archaeology and history in the Vijayanagara hinterland. South Asian Archaeology 1995: proceedings of the 13th conference of the European Association, Cambridge, 5-9 July, 1995. R. Allchin and B. Allchin. Enfield, N.H. , Science Publishers.

Morrison, K. D. (2001). Sources, Approaches, Definitions. Empires : perspectives from archaeology and history. S. Alcock, T. N. D'Altroy, K. D. Morrison and C. M. Sinopoli. Cambridge, Cambridge University Press**:** 1-9.

Morrison, K. D. (2001a). Coercion, resistance, and hierarchy; local processes and imperial strategies in the Vijayanagara empire. Empires : perspectives from archaeology and history. S. Alcock, T. N. D'Altroy, K. D. Morrison and C. M. Sinopoli. Cambridge, Cambridge University Press**:** 252-278.

Morrison, K. D. and M. T. Lycett (1997). "Inscriptions as Artifacts: Precolonial South India and the Analysis of Texts." Journal of Archaeological Method and Theory **Vol. 4** (Nos. 3/4): 215-237.

Morrison, K. D. and C. M. Sinopoli (1992). "Economic Diversity and Integration in a Pre-Colonial Indian Empire." World Archaeology **Vol. 23** (No. 3, Archaeology of Empires): 335-352.

Mukhia, H. (1981). "Was there Feudalism in Indian History?" Journal of Peasant Studies **Vol. 8** (No. 3): 273-310.

Murra, J. V. ([1956]1980). The Economic Organization of the Inka State. Greenwich, Conn., JAI Press.

Mus, P. (1975[1934]). Inde vu de l'Est: cultes indiens et indigènes au Champa. (India seen from the East: Indian and indigenous cults in Champa); translated from the French by I.W. Mabbett and D. P. Chandler. Monash Papers on Southeast Asia: No. 3. Clayton, Victoria, Centre of Southeast Asian Studies, Monash University.

Naerssen, F. H. (1976). Tribute to the God and Tribute to the King. Southeast Asian History and Historiography. C. D. Cowan and O. W. Wolters. Ithaca, Cornell University Press**:** 296-303.

Neale, W. C. (1957). Reciprocity and Redistribution in the Indian Village: Sequal to Some Notable Discussions. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press**:** 218-238.

O'Connor, S. J. (1988). "Review, David G. Marr and A. C. Milner, eds., Southeast Asia in the 9th to the 14th Centuries." Indonesia **Vol. 45**: 129-33.

O'Neil, D. (2008). Kinship. An introduction to Descent Systems and Family Organization: Glossary of Terms. http://anthro.palomar.edu/kinship/default.htm.

O'Reilly, D. J. W. (2007). Early Civilizations of Southeast Asia. Lanham, AltaMira Press.

OCM. (n.d.). "Inland Waterways." Retrieved July 2008, from http://www.ocm.gov.kh/c_inf3.htm.

ODDDA. (1999-, 2008). "OWTRAD Dromographic Digital Data Archives. Georeferenced historical transport/travel/communication routes and nodes." OWTRAD (Old World Trade Routes) Project, from http://www.ciolek.com/OWTRAD/DATA/tmcKHm1200.html.

Oppenheim, A. L. (1957). A Bird's Eye View of Mesopotamia. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press**:** 27-37.

Osborne, M. (2000). The Mekong. Turbulent past, uncertain future. Sydney, Allen and Unwin.

Ovesen, J., I.-B. Trankell and J. Ojendal (1996). When Every Household is an Island. Social Organization and Power Structures in Rural Cambodia. Uppsala Research Reports in Cultural Anthropology, No. 15, Department of Cultural Anthropology, Uppsala University.

Parmentier, H. (1916). "Cartes de l'Empire Khmèr d'après la situation des inscriptions datées." Bulletin de l'École française d'Extrême-Orient **XVI** (2): 69-73.

Pelliot, P. (1903). "Le Fou-nan." BEFEO **3**: 248-303.

Penny, D., C. Pottier, M. Kummu, R. Fletcher, U. Zoppi and S. Tous (2007[2005]). "Hydrological history of the West Baray, Angkor, revealed through palynological analysis of sediments from the West Mebon." Bulletin de l'École Française d'Extrême-Orient **92**: 497-521.

Polanyi, K. (1944). The Great Transformation. The Political and Economic Origins of our Time. Boston, Beacon Press.

Polanyi, K. (1957). Aristotle Discovers the Economy. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press**:** 64-96.

Polanyi, K. (1957a). The Economy as an Instituted Process. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press**:** 243-270.

Polanyi, K. (1957b). Marketless Trading in Hamurabi's Time. Trade and Markets in the Early Empires. K. Polanyi, C. M. Arensberg and W. Pearson. Glencoe, Illinois, The Free Press**:** 12-26.

Polanyi, K. (1975). Traders and Trade. Ancient Civilization and Trade. J. Sabloff and C. C. Lamberg-Karlovsky. Albuquerque, University of New Mexico Press**:** 133-154.

Polanyi, K., C. M. Arensberg and H. W. Pearson, Eds. (1957). Trade and Market in the Early Empires. Economics in History and Theory. New York, The Free Press.

Polanyi, K. and A. Rotstein (1966). Dahomey and the slave trade : an analysis of an archaic economy. Seattle, University of Washington Press.

Polkinghorne, M. (2007). Makers and Models: Decorative Lintels of Khmer Temples, 7th to 11th centuries. Art History and Theory; Archaeology, University of Sydney. **Unpublished Ph. D. thesis**.

Pollock, S. (1996). The Sanskrit cosmopolis, 300-1300: Transculturation, vernacularization, and the question of ideology. Ideology and status of Sanskrit: contributions to the history of the Sanskrit language. J. E. M. Houben. Leiden ; New York, E.J. Brill**:** 197-247.

Pottier, C. (1997). "Nouvelles données sur les couvertures en plomb à Angkor." Bulletin de l'École française d'Extrême-Orient **Vol. 84**: 181-220.

Pottier, C. (1999). Carte Archéologique de la Région d'Angkor. Zone Sud. Unpublished PhD Thesis, 3 vols. Paris, UFR Orient et Monde Arabe, Universite Paris III - Sorbonne Nouvelle.

Pottier, C. (2000). "Some evidence of an inter-relationship between hydraulic features and rice field patterns at Angkor during ancient times." The Journal of Sophia Asian Studies **18**: 1-21.

Pottier, C. (2003). Yaśovarman's Buddhist āśrama in Angkor. The Buddhist monastery: A cross-cultural survey. P. Pichard. Paris, École française d'Extrême-Orient**:** 199-208.

Pottier, C. (2004). "A propos du temple de Banteay Chmar." Aséanie **13**: 131-150.

Pou, S. (1992). Dictionnaire Vieux Khmer-Francais-Anglais. An old Khmer-French-English Dictionary. Paris, Centre de Documentation et de Recherche sur la Civilisation Khmere.

Pou, S. (2001). Nouvelles inscriptions du Cambodge, Collection de textes et documents sur l'Indochine XXII-XXIII. Paris, Ecole française d'Extrême-Orient.

Pou, S. (2003). Choix d' articles de khmerologie. Phnom Penh, Cambodia, Reyum Publishing.

Pryor, F. L. (1977). The origins of the economy: a comparative study of distribution in primitive and peasant economies. New York, Academic Press.

Ptak, R. and D. Rothermund, Eds. (1991). Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400-1750. Stuttgart, Franz Steiner Verlag.

Pym, C. (1968). The ancient civilization of Angkor. New York, New American Library.

Rao, V. N., D. D. Shulman and S. Subrahmanyam (1992). Symbols of substance, court and state in Nāyaka period Tamilnadu. Delhi, Oxford University Press.

Reid, A. (1988). Southeast Asia in the Age of Commerce, 1450-1680. Volume One: The lands below the Winds. New Haven, Yale University Press.

Reid, A. (1988a). Southeast Asia in the Age of Commerce, 1450-1680. Volume 2; Expansion and crisis. New Haven, Yale University Press.

Ricklefs, M. C. (1967). "Land and Law in the Epigraphy of Tenth-Century Cambodia." Journal of the Asiatic Society **26**(3): 411-420.

Rooney, D. (1984). Khmer ceramics. Singapore; New York, Oxford University Press.

Rooney, D. (2000). "Khmer Ceramics: their role in Angkorian society." Udaya **1**: 129-145.

Rothermund, D. (1991). Asian Emporia and European Bridgeheads. Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400-1750. R. Ptak and D. Rothermund. Stuttgart**:** 3-8.

Roveda, V. (2003). Khmer Mythology. Secrets of Angkor. Bangkok, River Books.

Roveda, V. (2007). Reliefs of the Bayon. Bayon. New Perspectives. J. Clark. Bangkok, River Books**:** 282-361.

Sahai, S. (1970). Les Institutions Politiques et L'Organisation Administritive du Cambodge Ancien (VI e-XIIIe Siecles). Publication Volume LXXV. École française d'Extrême-Orient. Paris, EFEO.

Sahai, S. (1971). "Medium of exchange in ancient Cambodia - a study in the contemporary life (600-800 AD)." The journal of the Numismatic society of India **33**(1): 90-104.

Sahai, S. (1976). "The Judicial System in Ancient Cambodia." The South East Asian Review **Vol. I** (No. 1): 79-100.

Sahai, S. (1977a). "Territorial administration in Ancient Cambodia." The South East Asian Review **Vol. 1** (No. 2): 35-50.

Sahai, S. (1977b). "Fiscal administration in ancient Cambodia." The South East Asian Review **Vol. 1**(No. 2): 123-137.

Sahai, S. (1978). "Central administration in ancient Cambodia." The South East Asian Review **Vol. III** (No. 1): 15-40.

Sahlins, M. (1972). Stone Age Economics. Chicago, Aldine-Atherton.

Saïd, E. W. (1978). Orientalism. London, Routledge & Keegan Paul.

Saïd, E. W. (1994). Culture and imperialism. New York ; London, Vintage Books.

Sakamoto, Y. (n.d.). Old Khmer: KWIC Index. Index of the Khmer Inscriptions in George Cœdès, Inscriptions du Cambodge, vols. 1-7.

Sanderson, A. (2003-4). "The Saiva Religion among the Khmers." B.E.F.E.O **90-91**: 349-462.

Schweyer, A.-V. (2007). The confrontation of the Khmers and the Chams in the Bayon period. Bayon. New Perspectives. J. Clark. Bangkok, River Books: 50-71.

SEAlang Classics. (2007). "Corpus of Khmer Inscriptions." SEAlang Projects Retrieved March 2005-December 2008, from http://sealang.net/classic/khmer/.

Sedov, L. A. (1963). On the problem of the economic system in Angkor Cambodia in the IX XII centuries (translated by Antonia Glasse for O. W. Wolters). Narody Asii I Afriki, Istoria, Ekonomika, Kul'tura, Akademija Nauk SSR. **6:** 73-81 (Note referenced page nos. are estimated from translation).

Sedov, L. A. (1967). Angkorskaiia Imperiia (The Angkor Empire). Moscow, Izdatel'sto "Nauka".

Sedov, L. A. (1969). La société Angkorienne et le problème du mode de production Asiatique. Sur le "mode de production asiatique". Paris, Editions Sociales. **138:** 327-347.

Sedov, L. A. (1978). Angkor: society and state. The Early State. H. Claessen, J.M. and Skalnik, Peter. The Hague, Paris, New York, Mouton Publishers: 111-130.

Sengupta, A. R., Ed. (2001). God and King. The Devarāja Cult in South Asian Art and Architecture. New Delhi, Regency Publications for The National Museum Institute (Seminar Proceedings).

Service, E. R. (1975). Origins of the state and civilization: the process of cultural evolution. New York, Norton.

Sharma, R. S. (1985). How Feudal was Indian Feudalism? Feudalism and Non European Societies. T. J. Byres and H. Mukhia. London & Totowa, NJ., Frank Cass & Co. Ltd.: 19-45.

Shifferd, P. A. (1996). Ideological Problems and the Problem of Ideology: Reflections on Integration and Strain in Pre-Colonial West Africa. Ideology and the Formation of Early States. Volume II. Studies in Human Society. H. J. M. Claessen and J. G. Oosten. Leiden, E. J. Brill: 24-47.

Simkins, R. A. (1999). "Patronage and the Political Economy of of Monarchic Israel." Semeia **87 (6)**.

Sinopoli, C. M. (1994). "The Archaeology of Empires." Annual Review of Anthropology **23** 159-181.

Sinopoli, C. M. (1995). "The Archaeology of Empires: A View from South Asia." Bulletin of the American Schools of Oriental Research **No. 299/300** (The Archaeology of Empire in Ancient Anatolia): 3-11.

Sinopoli, C. M. (2001). Empires. Archaeology at the millennium: a sourcebook. G. M. Feinman and T. D. Price. New York, Kluwer Academic/Plenum Publishers: 439-471.

Sinopoli, C. M. (2003). The Political Economy of Craft Production. Crafting Empire in South India, c. 1350–1650. Cambridge, Cambridge University Press.

Sinopoli, C. M. (2006). Imperial landscapes of South Asia. Archaeology of Asia. M. Stark. Oxford, Blackwell Publishing Ltd.: 324-349.

Sinopoli, C. M. and K. D. Morrison (1995). "Dimensions of Imperial Control: The Vijayanagara Capital." American Anthropologist **New Series Vol. 97** (No. 1): 83-96.

Skalnik, P. (1978). The Early State as Process. The Early State. H. J. M. Claessen and P. Skalnik. The Hague, Mouton Publishers: 597-618.

Smelser, N. J. (1959). "A Comparative View of Exchange Systems." Economic Development and Cultural Change **7**: 173-182.

Smith, C. A. (1976). Exchange Systems and the Spatial Distribution of Elites: The Organization of Stratification in Agrarian Societies. Regional Analysis. C. A. Smith. New York, San Francisco, London, Academic Press. **Vol. II:** 309-374.

Smith, M. (1999). ""Indianization" from the Indian Point of View: Trade and Cultural Contacts with Southeast Asia in the Early First Millennium C.E." Journal of the Economic and Social History History of the Orient **Vol. 42** (No. 1): 1-26.

Smith, M. (2005). "Networks, Territories, and the Cartography of Ancient States." Annals of the Association of American Geographers **Vol. 94**(4): 832-849.

Smith, M. E. (2004). "The Archaeology of Ancient State Economies." Annual Review of Anthropology **Vol. 33**: 73-102.

Smith, M. L. (2006). The Archaeology of South Asian Cities. Journal of Archaeological Research (online). Netherlands, Springer. **Vol. 14 (2):** 97-142.

Smith, R. B. (1979). Mainland South East Asia in the Seventh and Eighth Centuries. Early South East Asia : essays in archaeology, history, and historical geography. R. B. Smith and W. Watson. New York, Oxford University Press**:** xv, 561 p., [11] leaves of plates.

Southall, A. W. (1953). Alur society: a study in processes and types of domination. Cambridge; Nairobi, HefferOxford U.P.

Soutif, D. (2006). Regarding Two Markers' Inscriptions Recently Identified in Thailand. Angkor - Landscape, City and Temple. University of Sydney, Australia.

Spencer, G. W. (1976). "The Politics of Plunder. The Cholas in Eleventh-Century Ceylon." The Journal of Asian Studies **Vol. 35**(No. 3): 405-419.

Stanish, C. (1997). "Nonmarket Imperialism in the Prehispanic Americas: The Inka Occupation of the Titicaca Basin." Latin American Antiquity **Vol. 8** (No. 3): 195-216.

Stark, M. (1998). "The Transition to History in the Mekong Delta: A View from Cambodia." International Journal of Historical Archaeology **Vol. 2** (3).

Stark, M. (2006). "Pre-Angkorian Settlement Trends in Cambodia's Mekong Delta and the Lower Mekong Archaeological Project." Indo-Pacific Prehistory Association **Bulletin 26**: 98-109.

Stark, M. (2006a). From Funan to Angkor: Collapse and Regeneration in Ancient Cambodia. After Collapse: The Regeneration of Complex Societies. G. M. Schwartz and J. J. Nichols. Tucson, University of Arizona Press**:** 144-167.

Stein, B. (1980). Peasant State and Society in Medieval South India. Oxford, Oxford University Press.

Stein, B. (1984). The Economic Function of a Medieval South Indian Temple. All the Kings' Mana. Papers on Medieval South Indian History. Madras, New Era Publications**:** 68-89.

Stein, B. (1984a). The State, the Temple and Agricultural Development. A Study in Medieval South India. All the Kings' Mana. Papers on Medieval South India History, New Era Publications**:** 161-179.

Stein, B. (1984b). Integration of the Agrarian System of South India. All the Kings' Mana. Papers on Medieval South Indian History. Madras, New Era Publications: 181-227.

Stein, B. (1984c). Coromandel Trade in Medieval India. All the Kings' Mana. Papers on Medieval South Indian History. Madras, New Era Publications: 228-248.

Stein, B. (1995). The Segmentary State: Interim Reflections. The State in India 1000-1700. H. Kulke. Delhi, Oxford University Press: 134-161.

Stein, G. J. (2001). Understanding ancient state societies in the Old World. Archaeology at the millennium: a sourcebook. G. M. Feinman and T. D. Price. New York, Kluwer Academic/Plenum Publishers: 353-380.

Stern, P. (1951). "Diversité et rythme des fondations royales khmères." Bulletin de l'École française d'Extrême-Orient **44**(2): 649-685.

Stott, P. (1992). Angkor: Shifting the Hydraulic paradigm. The Gift of water. J. Rigg. London, School of African and Oriental Studies: 47-58.

Subrahmanyam, S. (1994). Introduction. Money and the market in India, 1100-1700. S. Subrahmanyam. Delhi ; New York, Oxford University Press: 1-56.

Tainter, J. A. (1988). The collapse of complex societies. Cambridge, Cambridge University Press.

Talbot, C. (1994). "Political intermediaries in Kakatiya Andhra, 1175-1325." Indian Economic and Social History Review **31**(3): 261-289.

Talbot, C. (1994). "Political intermediaries in Kakatiya Andhra, 1175-1325." Indian Economic and Social History Review **31** (3): 261-289.

Tambiah, S. J. (1977). "The Galactic Polity: the structure of traditional kingdoms in Southeast Asia." Annals of the New York Academy of Sciences **293**: 69-97.

Taylor, K. W. (1983). The Birth of Vietnam. Berkeley and Los Angeles, The University of California Press.

Terwiel, B. J. (1996). The Introduction of Indian Prosody among the Thais. Ideology and status of Sanskrit: contributions to the history of the Sanskrit language. J. E. M. Houben. Leiden ; New York, E.J. Brill: 307-323.

Terwiel, B. J. (2005). Of tidal flats and inland flooding. An essay in comparative historical human geography. Water in Mainland Southeast Asia. Siem Reap, Center for Khmer Studies.

Thion, S. (1993). Watching Cambodia : ten paths to enter the Cambodian tangle. Bangkok, White Lotus.

Tibbetts, G. R. (1979). A study of the Arabic texts containing material on South-East Asia. Leiden, Brill.

TimeMap Project (2003). Animated TimeMap of the Khmer Empire. Archaeological Computing Laboratory, University of Sydney, Centre for Southeast Asian Studies, University of Kyoto, Japan. National Institute of Infomatics, Japan. http://ecaimaps.berkeley.edu/animations/2003_03_khmer_animation.swf.

Tin, P. M. and G. H. Luce (1923). The Glass Palace Chronicle of the Kings of Burma. London, Oxford University Press.

Trigger, B. G. (1990). "Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour." World Archaeology **Vol. 22** (No. 2): 119-132.

Trigger, B. G. (2006). A history of archaeological thought. Cambridge, Cambridge University Press.

van Leur, J. C. (1955). Indonesian trade and society : essays in Asian social and economic history. The Hague, van Hoeve.

Van Liere, W. J. (1980). "Traditional Water Management in the Lower Mekong Basin." World Archaeology **11**(3): 265-280.

Vickery, M. (1977). Cambodia after Angkor: The Chronicular Evidence for the Fourteenth to Sixteenth Centuries, Yale University, Michigan: Ann Arbor. **Ph.D**.

Vickery, M. (1985). "The Reign of Sūryavarman I and Royal Factionalism at Angkor." Journal of Southeast Asian Studies **16**(2): 226-244.

Vickery, M. (1986). Some Remarks on Early State Formation in Cambodia. Southeast Asia in the 9th to 14th Centuries. D. G. Hall and A. C. Milner. Singapore, Institute of Southeast Asian Studies**:** 95-115.

Vickery, M. (1987). "Review 56 (review of K. Hall: Maritime Trade and State Development in Early Southeast Asia)." The Journal of Asian Studies **Vol. 46** (1): 211.

Vickery, M. (1996). "What to do about *The Khmers*." Journal of Southeast Asian Studies **27** (2): 389-404.

Vickery, M. (1998). Society, economics, and politics in pre-Angkor Cambodia: the 7th-8th centuries. Tokyo, Centre for East Asian Cultural Studies for UNESCO, The Tokyo Bunko.

Vickery, M. (1999). Cœdès' Histories of Cambodia. George Cœdès today Conference, Bangkok: Centre of Anthropology, Sirindhorn University.

Vickery, M. (1999a). "The Khmer Inscriptions of Roluos (Preah Ko and Lolei): Documents from a Transition Period in Cambodian History." Seksa Khmer, Nouvelle Série **1**.

Vickery, M. (2002). A History of Cambodia. Summary of lectures given at the Faculty of Archaeology, Royal University of Fine Arts, 2001-2002. Phnom Penh, Pre-Angkor Studies Society.

Vickery, M. (2003-4). "Funan Reviewed: Deconstructing the Ancients." Bulletin de l'École Française d'Extreme-Orient **XC - XCI**: 101-143.

Vickery, M. (2005). Cambodia and its neighbours in the 15th century. Working Paper Series No. 27. Singapore, Asia Research Institute, National University of Singapore**:** 71 pp.

Vickery, M. (2005a). Champa Revised. Working Paper 37. Singapore, Asia Research Institute http://www.ari.nus.edu.sg/publication_details.asp?pubtypeid=WP&pubid=304.

Vickery, M. (2006). A Survey of Cambodian Economy - Funan to 14th century. Angkor - Landscape, City and Temple. University of Sydney, Not published.

Vickery, M. ([1984]1999). Cambodia 1975-1982. Chiang Mai, Silkworm Books.

Vogel, H. U. and S. Hieronymus (1993). "Cowry Trade and Its Role in the Economy of Yunnan: From the Ninth to the Mid-Seventeenth Century. Part I." Journal of the Economic and Social History of the Orient **Vol. 36** (No. 3): 211-252.

Wade, G. (2004). Ming China and Southeast Asia in the 15th Century: A Reappraisal. Asia Research Institute, Working Paper Series, No. 28. Singapore, National University of Singapore 25pp.

Wade, G. (2005). "Southeast Asia in the Ming Shi-lu. Translation G. Wade." Retrieved June 06, 2008, from http://epress.nus.edu.sg/msl/entry/2818.

Wade, G. (2006). An Earlier Age of Commerce in Southeast Asia: 900-1300 C.E. Workshop on Dynamic Rimlands and Open Heartlands: Maritime Asia as a Site of Interactions. Osaka University, Japan, Asia Research Institute, National University of Singapore, The 21st Century COE Program "Interface Humanities": 53pp.

Wade, G. (2006). An Earlier Age of Commerce in Southeast Asia: 900-1300 C.E. Workshop on Dynamic Rimlands and Open Heartlands: Maritime Asia as a Site of Interactions. Osaka University, Japan, Asia Research Institute, National University of Singapore, The 21st Century COE Program "Interface Humanities": 1-53.

Wade, G. (2006a). The Horse in Southeast Asia prior to 1500 CE: Some Vignettes. International Horse Economy in Iran, India and China. R. Kauz. Vienna.

Wales, H. G. Q. (1974). The Making of Greater India. London, Quaritch.

Wallerstein, I. (1993). World System Versus World-Systems. A critique. The World System. Five hundred years or five thousand? A. G. Frank and B. K. Gills. London and New York, Routledge: 292-296.

Wallerstein, I. M. (1974). The modern world-system. New York, Academic Press.

Welch, D. J. (1998). "Archaeology of Northeast Thailand in Relation to the Pre-Khmer and Khmer Historical Records." International Journal of Historical Archaeology **Vol. 2**(No. 3): 205-233.

Wheatley, P. (1959). "Geographical Notes on some Commodities Involved in Sung Maritime Trade." Journal of the Malayan Branch of the Royal Asiatic Society **32, Pt 2** (No. 186).

Wheatley, P. (1961). The golden Khersonese: studies in the historical geography of the Malay Peninsula before A. D. 1500. Kuala Lumpur, University of Malaya Press.

Wheatley, P. (1975). Satyānṛta in Suvarṇadvīpa: from reciprocity to redistribution in ancient Southeast Asia. Ancient civilization and trade. J. A. Sabloff and C. C. Lamberg-Karlovsky. Albuquerque, University of New Mexico Press.

Wheatley, P. (1983). Nāgara and commandery: origins of the Southeast Asian urban traditions. Chicago, Ill, University of Chicago, Dept. of Geography.

White, P. F., T. Oberthur and P. Sovuthy (1997). Soils and Rice. Rice Production in Cambodia. H. J. Nesbitt. Manila, Cambodia-IRRI-Australia Project.

Whitelaw, I. (2007). A measure of all things. The story of man and measurement. Sydney, Allen and Unwin.

Wicks, R. S. (1992). Money, markets, and trade in early Southeast Asia: the development of indigenous monetary systems to AD 1400. Ithaca, N.Y., Southeast Asia Program, Cornell University.

Wills, J. E. (1991). China's Farthest Shores: Continuities and Changes in the Destination Ports of China's Maritime Trade, 1680-1690. Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400-1750. R. Ptak and D. Rothermund. Stuttgart: 54-77.

Winzeler, R. (1981). The Study of the Southeast Asian State. The Study of the State. H. Claessen and P. Skalnik. Mouton, The Hague: 455-467.

Wisseman Christie, J. (1983). Rāja and Rāma: The Classical State in Early Java. Centers, symbols, and hierarchies: essays on the classical states of Southeast Asia. L. Gesick. New Haven, Conn., Yale University Southeast Asia Studies: 9-44.

Wisseman Christie, J. (1986). Negara, Maṇḍala, and Despotic State: Images of early Java. Southeast Asia in the 9th to 14th Centuries. D. G. Hall and A. C. Milner. Singapore, Institute of Southeast Asian Studies: 65-94.

Wisseman Christie, J. (1990). Trade and State Formation in the Malay Peninsula and Sumatra, 300 B.C.-A.D. 700. The Southeast Asian Port and Polity. Rise and Demise. J. Kathirithamby-Wells and J. Villiers. Singapore, Singapore University Press: 39-60.

Wisseman Christie, J. (1993). "Texts and Textiles in 'Medieval' Java " Bulletin de l'École française d'Extrême-Orient **80** (1): 193-195.

Wisseman Christie, J. (1996). "Money and its Uses in the Javanese States of the Ninth to Fifteenth Centuries A.D." Journal of the Economic and Social History of the Orient **Volume 39** (Number 3): 243-286(44).

Wisseman Christie, J. (1998). "Javanese Markets and the Asian Sea Trade Boom of the Tenth to the Thirteenth Centuries A.D." Journal of the Economic and Social History of the Orient **40**(4): 344-381.

Wisseman, J. (1977). Markets and Trade in Pre-Majapahit Java. Economic Exchange and Social Interaction in Southeast Asia: Perspectives from Prehistory, History, and Ethnography. K. L. Hutterer. Ann Arbor, Center for South and Southeast Asian Studies, The University of Michigan: 197-212.

Wittayarat, D. and M. R. Antelme (2004). "Some Clues on Long-standing Relationships between Cambodia and Peninsular Thailand." Siksācakr. Journal of the Center for Khmer Studies **Vol. 6**: 44-51.

Wittfogel, K. (1981[1957]). Oriental Despotism. New York, Random House.

Wolters, O. W. (1958). "Tāmbraliṅga." Journal of the School of Oriental and African Studies, University of London **Vol. 21** (No. 1/3): 587-607.

Wolters, O. W. (1966). "The Khmer King at Basan." Asia Major **Vol. 12** (No. 1).

Wolters, O. W. (1967). Early Indonesian Commerce: A Study of the Origins of Srivijaya. Ithaca, Cornell University Press.

Wolters, O. W. (1973). "Jayavarman II's Military Power; The Territorial Foundations of the Angkor Empire." Journal of the Royal Asiatic Society: 190-201.

Wolters, O. W. (1974). "North-western Cambodia in the seventh century." Bulletin of the School of Oriental and African Studies- University of London **XXXVII**: 355-384.

Wolters, O. W. (1979). Khmer 'Hinduism' in the Seventh Century. Early South East Asia. Essays in Archaeology, History and Historical Geography. R. B. Smith and W. Watson. New York and Kuala Lumpur, Oxford University Press: 427-472.

Wolters, O. W. (1982). History, culture, and region in Southeast Asian perspectives. Singapore, Institute of Southeast Asian Studies.

Woolf, G. (2001). Inventing Empire in Ancient Rome. Empires : perspectives from archaeology and history. S. Alcock, T. N. D'Altroy, K. D. Morrison and C. M. Sinopoli. Cambridge, Cambridge University Press: 311-322.

Yang, B. (2004). "Horses, Silver, and Cowries: Yunnan in Global Perspective." Journal of World History **Vol. 15 (3)** http://www.historycooperative.org/journals/jwh/15.3/yang.html: 281-322.

Yoffee, N. and G. L. Cowgill, Eds. (1988). The Collapse of Ancient States and Civilizations. Tucson, The University of Arizona Press.

Yung-Ti, L. (2003). "On the Function of Cowries in Shang and Western Zhou China." Journal of East Asian Archaeology **Vol. 5** (1-4): 1-26.

Zhou, D. (1993[1297]). The Customs of Cambodia. Translated into English from the French by Paul Pelliot of the Chinese original by Gilman d'Arcy Paul. Bangkok, The Siam Society.