SYNCRETIC ARCHITECTURAL HERITAGE IN JAVANESE ISLAM

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ABSTRACT

The main aim of this research is to assess the continuity and significance of Hindu-Buddhist design motifs in Islamic mosques in Java. This is done by investigating four pre-Islamic motifs in Javanese mosque ornamentation from the 15th century to the present day. The research starts with a belief that typical Javanese ornaments were consistently used both in pre-Islamic Hindu-Buddhist temples and Islamic mosques in Indonesia. This phenomenon was a result of syncretic Javanese Islam, composed of mystic animism, Hindu-Buddhism, and Islam, which differed from orthodox Islam in the Near East and Arab world.

Among many ornaments, the most frequent four motifs are prehistoric tumpals, Hindu-Buddhist kala-makaras, lotus buds, and scrolls, all of which have symbolic connotations and are used to decorate sanctuaries. Tumpals signify the Cosmos Mountain where gods abode; kala-makaras protect temples where the gods are believed to reside; lotus buds denote life and creation; and scrolls imply the start of life.

For a comparison between temple and mosque ornamentation, 10 Hindu-Buddhist temples and 30 mosques were purposively selected, and a representative sample of each motif was taken during the researcher's fieldwork. In addition, 20 Indonesian scholars were interviewed to identify the origins of motifs in Javanese mosques.

In order to answer the research questions, the background, basic type of indicator and its subdivisions, five further characteristics, and other elements and principles of design were investigated. Four indicators were chosen to test each of the four motifs. Tumpals were examined by line, kala-makaras by shape, lotus buds by form, and scrolls by rhythm. A few examples of each motif explained how they were analysed in two stages, by the presence of each characteristic, and by its modal value and total number. This assessment was based on an amalgamation of (1) the researcher's informed judgement, trained in art and design, (2) observations during the fieldwork, (3) elements and principles of design, according to literary sources, and (4) the respect to the Indonesian cultural heritage.

The findings revealed continuity in the four motifs across the pre-Islamic and Islamic periods. The continuities appeared in lines, shapes, forms, and rhythms. Lotus buds and tumpals showed significant continuities, while kala-makaras and scrolls changed in the transfer from temples to mosques. Kala-makaras needed to conform to the *hadith* (sayings of Prophet Muhammad) which forbids depicting living figures in Islamic ornamentation; thus living images were rather abandoned and replaced by geometric shapes. Javanese scrolls in temples and mosques displayed the same characteristics of repetitive and continuous rhythms as the Islamic arabesque. Consequently, there arose a beautiful syncretism in the four motifs in ideas and forms. Hindu-Buddhist symbolism was mingled with Islamic aesthetics, whilst keeping local Javanese characteristics. The symbolic connotations of the four motifs allowed them to continue, and their influence was dependent upon creativity of local genius in each epoch.

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My Soul, My Mind, My Heart

Until yesterday, I was making a wandering odyssey on an Indonesian boat, bound for Oxford Brookes: U.K. Today, I am returning to my original harbour, in order to lay an eternal anchor. My unutterable gratitude and indebtedness towards many individuals whirl into three waves: they go through my soul, my mind, and my heart. None of the three can be differed, as each presents priceless, immeasurable, and precious humbleness.

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PREFACE

Why this research?

In 1859, Charles Darwin suggested a theory of evolution in his famous book, *On the Origins of Species*. Johann Wolfgang von Goethe (1749-1832), a German poet, sacrificed his Werther to death in *The Sorrows of Young Werther*, in order to continue his life in eternity. Whether a thing has died out by nature, or a human has disappeared by an act of will, the messages left behind tell us of continuity. Evolution implies creation, and death proposes life. Exceptionally, these metamorphoses do not seem to apply to Javanese temple and mosque ornamentation.

RESEARCH QUESTIONS

Principle of Research

This research starts from the fact that in Java, every earlier tradition was inclined to be adapted into new incoming systems, resulting in various syncretic forms. One of these forms was shown in mosque ornamentation. Javanese mosques are believed to have taken over pre-Islamic traditions, proved in Sendang Duwur (1561). Accordingly, ornaments in mosques should be inspected whether or not their ideas and forms were inherited from Hindu-Buddhist tradition. A broad view of mystical ideas in animism, Hindu-Buddhism, and Islam should be obtained to find similarities and to examine how these concepts have been formulated both in temple and mosque ornamentation, by examining syncretic ornaments across pre-Islamic and Islamic periods. The development of these ornaments within the Islamic era needs to be observed too, in parallel with verifying their integration into orthodox Islamic arabesque, geometry, and calligraphy.

Purpose of the Study

Javanese mosque ornamentation will not be understood without detailed studies of representative motifs, chosen from different periods and geographical areas in Java. In recording details of ornaments by using various disciplines - anthropology, archaeology, history, architecture, art, and design – a unique and profoundly developed ornamental tradition might be achieved. This research could place Javanese Islam with its rich conglomerate of religious and cultural expression in a rightful place of the wider Islamic Arab world. (1) This study examines the degree of continuity and influence of pre-Islamic ornament on Javanese mosque ornamentation through the study of four motifs (tumpal, kala-makara, lotus bud, scroll) from the 15th century to the present day in Java, Indonesia. (2) It investigates the chronological development of four motifs within sub-sections of the Islamic period (transitory, Dutch colonisation, contemporary). In particular, the motifs on mihrabs, the most ornamented place in a mosque building, are compared with those in other locations to see commonality in their ornamentation. (3) It identifies the origins of Islamic scrolls in Javanese mosques, in terms of idea and form. Were they derived from Hindu-Buddhist scrolls? Or were they taken from orthodox Islamic arabesques? Or were they a combination of both?

Research Questions

Main question: What has been the degree of continuity of pre-Islamic ornaments in Javanese mosque ornamentation from the 15th century to the present day?

[1] The term, 'prehistoric' means neolithic/megalithic times when tumpals appeared.

Sub-question 1: How has the tumpal, the popular prehistoric motif in Indonesia, become part of Javanese mosque ornamentation, and how has it been developed and used within the Islamic period?

Prehistoric	Kalasan temple	Agung Yogya mosque
		

Sub-question 2: The *hadith*, the sayings of the Prophet, prohibits living figures being depicted in art. Why therefore has the kala-makara, a favourite animal motif in Hindu-Buddhist temples, been adapted into Javanese mosque ornamentation, and how has it been used in Javanese mosques over time?

Borobodur temple	Central Javanese temple	Agung Kasepuhan Mosque
		

Sub-question 3: How frequent was the use of Hindu-Buddhist lotus buds in Javanese mosque ornamentation, and how important has the lotus bud been in mosques within the Islamic period?

East Javanese temple	Agung Kasepuhan mosque
	

Sub-question 4: What if any was the influence of Hindu-Buddhist scrolls on Javanese mosque scroll designs?

Kalasan temple	Agung Yogya mosque
	

GAPS IN KNOWLEDGE

The study of Islamic art and architecture in Southeast Asia seems to be much marginalised. Until the late 20th century, scholarly discourse on Southeast Asian art generally neglected the significance of Islam's presence in the region. As an example of the marginalisation of Islamic art, Raffles' *The History of Java* (1817) provides a few pages on the dominant religion in the region. None of the illustrations on Islamic art and culture were found. European scholars working from the viewpoint of culture have often difficulty in comprehending the subtle dialogue between art and spirituality in this Islamic world. The chronological relationship of Islam to Hindu-Buddhist traditions has reinforced the dichotomy between the demands of religion (agama) and indigenous traditions (adat).

For example, the foremost scholars such as Hurgronje and Windstedt underlined that Islam in Southeast Asian societies was somehow less authentic than that of the Middle East. For Geertz, Islam is more a social category than a belief system. Discussion on Islamic art would be constrained by the idea that Islam was another wave of influence in this region. It can be misleading that Islam followed chronologically the indigenous animist societies and Hindu-Buddhist kingdoms, as part of an oscillating cultural dynamic, thus Islamic art never attained an identity in terms of its own unique aesthetic perimeters.

Moreover, among several researches so far, very few have discussed on ornaments. Krom (1923/1931), Bosch (1921/1946/1961), Vogler (1949), Stutterheim (1956), Kempers (1959), Geertz (1964), Holt (1967), Fontein and Soekmono (1971), de Graaf and Th. Pigeaud (1976), Dumarçay (1986), and Prijotomo (1988) dealt with different subjects on Indonesia. Sedyawati and Santiko published many articles. Almost all literary sources seemed to concentrate on archaeology, architecture, anthropology, history, culture, and art. If any topic of ornamentation was mentioned in their bibliography, it was a very short description. Practical analyses of pre-Islamic and Islamic motifs in the context of art and design were hardly acquirable.

Tjandrasasmita (1960/1975/2004) explains the earliest example of syncretic architecture and ornaments of prehistoric, Hindu-Buddhist and Islam, and Subarna (1982/2004) talks continuity of prehistoric ornaments into Javanese art. Anbary (1998) explores Hindu-Buddhist and Islamic archaeology too. Sudradjat (1991) illustrates Indonesian architecture, while Isnaeni (1996) shares Hindu-Buddhist with Islamic architectural elements, in terms of mystical concepts. Of two theses on archaeological ornaments, one is an epigraphic research (Habib 2001), and another referring to ornaments on the northern coast of Java (Marwoto 2003).

In Indonesia, the study of art history is still at an early stage. An effort to make a division in Javanese ancient art was made by Krom (1926). He showed the development from Central Java to East Java… Bernet-Kempers (1959), in his study about Indonesian ancient art, created a kind of order, beginning with divisions into prehistoric, Hindu and early Islamic eras. Vogler (1949) carried further, examining Hindu-Javanese constructional art through the form of kala-makara. He made a distinction…in Central Java, and East Javanese art (Sedyawati 1987). No thorough of Javanese mosque ornamentation occurred, neither of the whole of Java, nor across a given period, nor of specific motifs by using elements and principles of design as indicators. Identifying origins of scrolls in Javanese mosque either as Hindu-Buddhist or Islamic or both was not done. These examples indicate significant gaps in knowledge about continuity and influence of pre-Islamic ornaments on Javanese mosques.

CHAPTER I

Regionalism of Islamic Art and Architecture in Southeast Asia and Java, Indonesia

> Regionalism looks for sustaining spiritual forces and refuses to accept that a tradition is a fixed set of devices and images… It…deals with climate, local materials and geography in epochs before the arrival of Islam. The aim is to unravel the layers, to see how indigenous archetypes have been transformed by invading forms, and in turn to see how foreign imports have been adapted to the cultural soil… Beyond the particular, the regionalist tries to see the type, the general law, the originating principle (Curtis 1988).

Islamic culture and art have been influenced and remodelled by local traditions with countries which they came into contact, in order to comply with its religious and philosophical ideas. This interaction has enriched both the material culture of the Muslim world and those pre-existing ones. Despite keeping the Islamic principles in unity, gradual stylistic changes occurred thus the regional, social, and temporal variations in Islamic art and architecture should be studied in detail.

Today, Southeast Asia (the Malay)[2] including Java represents almost one-quarter of Islam's global community. Islamic civilization is inextricably linked to the message of the Prophet since its arrival to Java in the early 15th century. Islam not only altered local cultural landscapes, but also created a unique regional heritage. It can be asked why a characteristic regionalism had to take place greatly in this archipelago. Was it due to the awareness of continuing Javanese cultural heritage? This can be claimed that the geographical long distance between the Arab world and Southeast Asia prevented the direct influence of Islamic center into this region at the beginning.

At any rate, the expression of faith in art and architecture articulated the creed of Islam and produced complexity of regional variations. Two factors can be argued to create the regionalism. Firstly, living in a spirit of tolerance, flexibility, and openness, the Malay people were able to accept changes through careful selection, reflection, and modification without discarding their wealthy cultural traditions. They witnessed Hindu-Buddhist, Chinese, Islamic, and western cultures, which had a great impact on the lifestyle. Secondly, the arrival of Islam to the archipelago coincided with an era of zealous spiritualism in the Islamic world. Sufi mysticism had first appeared in Persia, and following the Mongol seizure of Baghdad in 1258, it rapidly spread through international trade routes. As the Sufi precept of 'universal toleration' could negotiate with pre-Islamic culture, a new Malay identity was quickly expressed in Malay art to affirm 'oneness of God'. Artists drew inspiration from diverse heritage and chose to transform existing symbolism in accordance with Islam.

Regional Indonesian mosques with multi-tiered roofs: Agung Demak Java (1479), Lubuk Bauk Sumatra, Sultan Abdurahman Kalimantan, Tua Pulau Ternate the Moluccas, Pondok Indah Java (1997)

Moreover, close relationship between rulers and Islam was spatially symbolized by placing Javanese palaces adjacent to the grand mosques and the town's centres. The common heritage in many mosques reflects the close political relationship between Muslim rulers in different regions. Shared features are tripartite division (base, main body, superstructure), centralised plan, multi-tiered roof, soko guru (four master columns), mustaka (crown), outer colonnade, serambi (veranda), walled courtyard with two gateways, drum, and graveyard.

Until the late 19th century, mosques were constructed in a vernacular style with Hindu-Buddhist multi-tiered roof, using mostly wood to accommodate local conditions. The persistence of indigenous buildings had to take into account the local profusion of natural resources and variable climates, resulting in exuberant and diverse architectural styles. Elements associated with Islamic architecture elsewhere, such as dome and geometric ornament, do not feature in these traditions. Multi-tiered roofs are the most suitable for tropical weather against heavy rain and humidity. And soko guru supports the uppermost roof, separating it from the double-layered outer roof, to admit light and to allow ventilation of the prayer hall.

As pre-Islamic traditions underline the form and setting of sacred places, mystical Sufis borrowed them, based on their belief of mosques to be sacred, creating a combination of indigenous and Islamic ideas and forms in mosque architecture. Three-tiered roof symbolises the mystical paths to God. Soko guru signifies the spiritual context of the vertical unity between God and his believers, continued from the Hindu belief in the identity of self and the universal soul.

According to a Malay perspective, art is likely to function as delight and purity. A main difference between Islamic art and Malay art is the level of religious values inherent in the artifacts. Despite influence of pre-Islamic beliefs and art forms on the pattern of life in Southeast Asia, a bond between Islam and local culture has been steadfast, because existing influences encouraged Malay people to accept Islamic ideologies, in order to develop a distinctive regional art. The concept of 'Godliness' of their ancestors and the primary aesthetics of cosmological belief in Malay were penetrated into Islamic cosmology in a form of syncretic culture.

It is known that the avoidance of figurative representation separates Islamic art from Hindu-Buddhist aesthetic style. Nevertheless, in this region, Islamic art needed reconciliation of the ambivalent relationship between the two religions, caused by the ruler's indigenous belief of the magic in art. Accordingly, the depiction of non-Islamic images, such as Hindu deity Ganesha or zoomorphic and anthropomorphic symbols combined by Koranic calligraphy was to be understood in the context of the earlier animism. This method was intended to represent non-Islamic images fitting into an aesthetic attitude tolerable to Islamic orthodoxy. In the syncretic process, armed Ganesha resembled Ali's sword, discarding simultaneously his Hindu iconography. This change suggests a transformative possibility.

Another device was the metamorphosis of foliage into a figurative form, seen in a stone panel of Mantingan (1559), where leaves and tendrils became a shape of a monkey. Makaras, disguised as foliate scrolls at Central Javanese temples, continued for the decoration of ceremonial boat prow in Islam, signifying protection and richness. However, the preference of emblematic depiction brought a potentiality in ornamentation. Narrative realism was replaced by vegetal patterns of 'meandering clouds' whose endless spiralling floral and foliate scrolls form visual dynamism. The shift from figural representation to the frame decoration achieved its finest expression in the illuminated manuscripts, batik, and sculptured wood.

[2] The term 'Malay was first appeared in the Buddhist Sriwijaya, but has altered to historical situations. Although Malay world is sometimes synonymous with Islam, the regional circumstance makes it difficult to sustain. Here, 'Malay' corresponds to 'Southeast Asia' to which Indonesia belongs.

In Islamic ornament, calligraphy is awarded a status higher than arabesque or geometry[3]. As the medium for transmitting the words of the Koran, Arabic script played a spiritually unifying role and was placed in a unique position among Muslims regardless of their ethnic or social backgrounds. In Southeast Asia, calligraphy was more often used in decorating the illuminated manuscripts, rather than the exploration of sophisticated calligraphic styles. The blessed Islamic phrases are to be read for their association with the grace of the Koran, and inscriptions are perceived potent image of blessing and protection. The image of talismanic textiles suggests the influences of Sufi metaphysics.

Among many types of pre-Islamic motifs including winged gate which appeared in early Javanese mosques, kala-makaras and floral seemed to continue the most, particularly lotus flower. Islamic poets describe flower as a book, where one can study the knowledge about God. And its combination with birds can be considered as the characteristic of Islamic Javanese decorative art, despite a ban by the *hadith*. Interestingly, the winged gate was neither found in Hindu-Buddhist nor Islamic culture, but as a bird of the vehicle of Vishnu in Hindu myth, the motif could be the Javanese invention in the beginning of Islamisation.

The Chinese settlements and their role in the creation of an Islamic aesthetic in the archipelago are apparent in works of art. In Sumatra where many Chinese settled and adopted Islam, the art of lacquer-making was highly developed. In the timber-rich coastal Java, they influenced existing traditions of woodcarving and distinct batik styles.

Van Leur in his book *Indonesian Trade and Society* (1960) argues that Indonesian history must be understood in its own terms, not in those borrowed from other cultures. This view seems to be shared by others, such as Prijotomo (2004[interview]) who stresses: 'We are Javanese, then, our religion is Islam'. Islamic art became an extension, rather than a radical change from earlier aesthetic traditions. These comments raise a question on unique Javanese attitude to Islamic culture. The answer can be found in Kusno's article (2003)[4], arguing that Java was the center of the universe before the arrival of Islam, but on facing Islam, Java was aware of its own limit. In order to keep a religious balance, the Javanese Muslims had to localize smoothly orthodox Islamic culture to continuing traditional symbolism, thus they could feel that the center would not have to shift so radically.

Consequently, constructing syncretic mosque of Agung Demak (1479) is likely to represent the power of the new faith in Java from a viewpoint of Islam. Islam has been localized and incorporated into an element within the larger cultural framework of Java from the Javanese perspective. Java was not merely part of Islam, but Islam was part of Java or Javanese life.

This philosophy has continued until five centuries later. Mintobudoyo, Javanese architect, designed Soko Tunggal (1973) at Taman Sari in Central Java. The mosque has a single column, supporting four corner beams of the upper roof. The architect's intention was to construct a focus, a vertical center, which represents 'unity' of the Javanese and Islamic world. The vertical column pays tribute to the global Islam, while the horizontal spread of four master pillars confirms the existence of local power. Surprisingly, the mosque orients itself to the east, away from qibla, and any deviation from this direction for a mosque would violate the Javanese rule. Indicated by a group of architectural historians in Indonesia, the architect clarified that it is Java which is at the center of the whole negotiation, and his idea was accepted. This story shows how the transformation of Javanese Islam and its architectural form is inseparable from the social and economic contexts.

A return to the rich traditions of local culture in relation to pan-Islamic world starts visible after 1945. International solidarity of Islam and a unifying act of pilgrimage in the Arab world are in tension with the Javanese capacity to absorb and syncretize external elements. These factors can confuse attempts to distinguish and assess continuities and consistencies. In 2004, Agung Semarang in Central Java was inaugurated. Fanani, the architect, explains that it represents a modern Javanese mosque how the design principle can combine locality and Islam, nationalism and internationalism, and strictness and smoothness. Pre-Islamic soko guru in the prayer hall extends through a roof, becoming minarets. And local floral motifs are designed according to the style of Islamic arabesque. As a whole, Islamic cultural heritages reflect unity in diversity in Southeast Asia, where Java belongs to. In appreciating its development, one should be mindful of the context of multicultural societies which created an extraordinarily rich practice through the integration of tradition, ethnicity, geographical space, and belief. It was due to the inspiration of the Malay people which has played the most significant force in creating a regional Islamic culture and Malay identity in this archipelago.

> Regionalism in architecture is a concept of architectural design based on such determinants as the culture, the climate and the resources… The history of civilization shows…region and culture-specific architecture…in different parts of the world (Muktadir 1998).

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References in alphabetical order: Baer 1998; Bennett 2005/2006(interview); Curtis 1988; Fanani 2004(interview); Fontein 1990; Grabar 1987; Isnaeni 1960; Kusno 2003; Marwoto 2003; Muktadir 1988; Noe'man and Fanani 2005(interview); O'Neill 1993/1994; Prijotomo 2004(interview); Rogers 2005; Tjahjono 1998; Yatin 2005

CHAPTER II

Appreciating Islamic Ornament

Islamic ornament seems to be conceptual and intellectual rather than emotional, expressing contemporary ideas of beauty and aesthetic concepts to communicate Muslim thoughts and to reflect the spirit of their times. In the context of a belief that 'God alone is the Creator', a new way of expression in ornament was created, using floral, geometric, and epigraphic motifs, bringing ambiguity to their function as purely decorative, but also as possessing significant meaning. Islamic ornament was inherited from Byzantine and Sasanian culture, and underwent changes over time, stretching from Spain to India and Indonesia. Thus, they cannot be understood without detailed studies of the regional, social, and temporal variations of the techniques and use of individual motifs.

[3] Megalithic geometry and Hindu-Buddhist scrolls in Java could be assimilated with Islamic geometry and arabesque, being popular in the Islamic contemporary period.

[4] Kusno, Abidin (2003), "the Reality of One-Which-is-Two: Mosque Battles and Other Stories, Notes on Architecture, Religion and Politics in the Javanese World", Journal of Architectural Education, ACSA, inc. pp. 57-67; Saliya, Hariadi and Tjahjono (1990), "Contemporary Expressions of Islam in Buildings: Indonesian Experience"

Islamic ornament consists of three genres: arabesque, geometry, and calligraphy. Arabesque is a stylised form of the vegetal scrolls, signifying a concept of Paradise. Kühnel in *Die Arabesque* (1949) argues that the arabesque is the most expressive artistic manifestation. Many debates on the term 'arabesque' took place over a long period, ranging from the sole vegetal scrolls to the whole range of Islamic ornamentation. However, this research limits the arabesque to Islamic vegetal scrolls which appeared in Javanese mosques from the 15th century to the present day. Moreover, Islamic ornament is best shown in geometric patterns whose basic devices of repetition, rotation, and reflection can evoke mystical thoughts. As the only novelty, calligraphy became the chief means of expressing symbolic connotation and aesthetic beauty. Muslims understand it as a visible form of the revealed Word of God, the Holy Koran. It is no wonder why a fine script had to be developed both as a Muslim's religious duty and the most appropriate ornamentation for mosques.

ORNAMENT AS BEAUTIFICATION AND SYMBOLISM

> A proper understanding of their meaning can only be reached by detailed studies not only of the formal and technical aspects of these decorations, but also by considering the regional, social and religious variations of people who created and beheld them (Baer 1998).

It has been generally accepted that the main function of Islamic ornament is beautification to endow visual pleasure, although many efforts have been attempted to explain that it also has a symbolic function. In this discussion, Brend (1991) argues that Islamic ornament rarely demands to be read as a symbol; rather it stands as an affirming background with a latent symbolism. Hillenbrand (2001a) goes further saying that Islamic ornament serves mainly to beautify the structure, but can also evoke a mystical idea. As no constant association between particular buildings and symbolic connotations exists, ornament as visual pleasure is often the first aspect of the buildings to be considered.

The dual nature of ornament was earlier observed. For Grabar (1987), ornament could possess both a symbol and an illustrative meaning. For instance, the inscriptions in the Dome of the Rock can be considered aesthetic, while landscapes in the Grand Mosque of Damascus can present a symbol of Paradise, based on an Islamic concept. Clévenot (2000) shares his view, suggesting the omnipresence of plants as conveying an idea of 'the Garden of Felicity', nourished by the Koranic description. Nonetheless, it was Burckhardt (1976) who stressed notions of the divine through ornament. They are not expressed through devotional images but through the totality of form that unites and characterizes all the visual arts of Islam. Ardalen and Bakhtiar (1973) underline that anyone who is overwhelmed by the amplitude of nature tries to convey the same multiplicity in both symbolic and abstract ways, in order to pay tribute to the Creator.

This type of debate about combining beauty with symbolic meaning took place among Islamic scholars even within the first few centuries of Islam. Tha'libi and Muqaddasi said that the multiplicity of forms and colours in Islamic ornament leads the beholder to identify new features which arouse his curiosity and invite contemplation. In contradiction, al-Ghazzali (d.1111) claimed that ornaments are entirely related to religious beliefs and the notion of God.

Whether aesthetic or symbolic in intention, it has been contended that Islamic ornament aims at concealing the structure of a building rather than revealing it. Or it can make them more attractive, bring out the essential nature of architecture, accentuate a plastic shape, and change it into something lively. Behrens-Abouseif (1998) seems to share with this: 'Ornament did not conceal the frame; rather it emphasized connections between vertical and horizontal elements, articulated links and joins, and framed access and openings'. From different views, ornament highlights architectural elements and structural compositions, interacting with them either by disguising, or by revealing them, or by being its subordination to architecture. The main function of Islamic ornament can be summarised as adornment of the surface, expressing contemporary ideas of beauty and aesthetic concepts through forms, materials, and techniques. Some ornaments are designed for the communication of symbolic connotation. The complex definitions of Islamic ornament are proclaimed that 'Islamic art is not a mere concept, an abstraction, but is recognizably an entity, even if that entity defies easy definition' (Hillenbrand 2001a).

THREE GENRES: ARABESQUE, GEOMETRY, CALLIGRAPHY

> Islamic art is essentially a way of ennobling matter by means of geometric and floral patterns, united by calligraphic forms which embody the word of God as revealed in the sacred book, the Holy Koran (foreword by Nasr in Critchlow 1989).

In a broadly speaking, Islamic ornament has three genres of arabesque, geometry, and calligraphy. The reluctance to depict living figures in the Islamic religious context probably directed attention towards the creation of arabesque. However, Hillenbrand (2001a) argues that it would be a mistake to regard them as fixed, because Islamic artists reinterpret nature through their own creation. Arabesque characterises as 'a form that is a plant and yet not a plant. Imagination, not observation, was the key; nature, it is true, but nature methodised'. The geometric mode appears in relatively basic forms, such as in angular repetitive grids, stellar patterns, or curvilinear networks on the windows of mosques and palaces. To appreciate the interlacement of the stonework, it needs to be read by allowing the eye to follow the flow of intertwining forces. Moreover, epigraphic decoration intends to evoke mystery. In many of the finest Islamic monumental inscriptions, their meanings are not clear, due to the rhythmic exuberance of the lettering and the pattern. All three genres are inter-related. Epigraphic letters are cramped into angular geometric forms. Vegetal arabesque unfolds concentrically or spirally. Geometric networks have the edge, taken off their angularity by the use of buds of leaves. The distinctiveness of Islamic ornament seems to lie in the fact that three elements infiltrate each other, creating ambiguity about their function.

Arabesque

Arabesque was identified during the 19th century as the primary characteristic of Islamic ornament by Orientalists who focused on the material culture of the Arabs in Syria, Egypt, North Africa, and Spain. The name was derived from the Italian word *rabesco* and applied during the Renaissance (1555) to refer to the Islamic style of ornamental pattern.

In *Stilfragen* (*Problems of Style*, 1893), Riegl limited the term 'arabesque' to a stylised form of the vegetal, and regarded it as the original creation of the Arab spirit. The fundamental feature of arabesque was geometrisation of the stems of the particular vegetal elements. These can grow from one another infinitely in any direction, rather than branching off from a single continuous stem.

In the first edition of '*The Encyclopaedia of Islam*' (1938), Herzfeld noted that 'the term arabesque in its wider sense, as denoting the ornament of Muslim art in general, also comprises a number of figurative elements'. However, ornament can hardly be described and analysed as all the same, owing to the considerable differences in display according to time and place. It was, however, Kühnel who claimed arabesque as the most expressive artistic manifestation in Islamic ornamentation, emphasizing its purely ornamental character. In *Die Arabeske* (1949), he does not accept Herzfeld's definition of arabesque, but has adopted Riegl's theory of it as a vegetal type of ornament, which could be intertwined with geometric, calligraphic, and stylised figural elements. Kühnel further identified two aesthetic principles of arabesque: (i) rhythmical and harmonious movement, and (ii) filling the entire surface:

> …whatever their origin and form may be, so it is also here that no symbolic meaning can be constructed. Decisive is a decorative intent which is devoid of a meaningful purpose.

The function of arabesque was further analysed by Burckhardt (1976) that arabesque includes both stylised plant forms and geometrical interlacing work. The former expresses a perfect transcription of the law of rhythm into visual terms, the sense of rhythm, while the latter represents 'the spirit of geometry'. The idea of arabesque as solely decorative met opposition from Sufi scholars. Ardalan and Bakhtiar (1973) argued that arabesque recreates the cosmic processes of the Creator through nature. They held that a rhythmic component in arabesque reflects movement, manifests time, and symbolises the infinity, glorifying the concept of 'Garden of Paradise'. With a combination of geometry and calligraphy, it exhibits harmony of unity and multiplicity.

Despite debates about its categorisation, arabesque in its vegetal form has been given the most attention. It is a distant relation of acanthus and vine scroll ornamentation from the eastern Mediterranean area before the advance of Islam. Curving vine scrolls first appeared in the Dome of Rock and Mshatta in the eighth century, and established in stucco and mosaic decoration of the Great Mosque of Cordoba two centuries later in a form of half-palmette. By the 11th century, arabesque was fully developed, as shown in the Great Mosque of Al-Hakim in Cairo, and later introduced to the Quwwat Al-Islam Mosque in Delhi in India in a combination of acanthus and Hindu lotus.

Mihrab frieze, Great Mosque of Cordoba (9C)

So far, a few characteristics of arabesque were discussed. As its clearer concepts and components are needed to identify the origins of scroll motifs in Javanese mosques, 20 literary sources of arabesque were traced in depth. The result shows that, first and foremost, the description of arabesque includes geometrical, but expressions of abstract and repetitive can be alternatives. Infinite, continuous, rhythmic, stylised and undulating are also favoured. Regardless of its function, whether beautification or symbolism, the creation of arabesque is to be the great achievement of Islamic ornament. Here are expressions by the 20 scholars.

Jones (1856/1982): continuous, geometrical, infinite, simple
Bourgoin (1873a): abstract, geometric
Riegl (1893/1992): abstract, anti-naturalistic, bifurcated, circular, continuous, curvilinear, eccentric curves, geometric, in any direction, infinite, linear, oval, pointed, polygonal, spirals, stylized, symmetrical, two-dimensional, undulating
Kühnel (1949/1960/1977): abstract, bifurcated, ever-continuing, geometric, infinite repetition, interlacing, linear, movement, regular, rhythmic, spiral, unnatural
Herzfeld (1953/1987): abstract, anti-naturalistic, countless repetition, dematerialization, geometric, infinite
Dimand (1958): abstract, circular, geometrical
Grube (1966): geometrical, repeated, stylised abstracted
Burckhardt (1967/1976): continuous, linear, logical, mathematical, melodious, repeated, rhythmical, stylized, undulating
Ardalan and Bakhtiar (1973): rhythmic, movement, regular, continuity, endless circular, repeated, infinite, geometric, spiral
Grabar (1973/1987): abstract, circles, concentric, geometric, repetition,
Undulating
D. Jones (1978): continuous, curved, denaturalisation, geometric, limitless, mathematical, movement, regular, repetition, rhythmical
Davies (1982): circular, continuous rhythm, infinite, mathematical,
repeated, stylized
Allen (1988): geometric, non-vegetal
Naddaff (1991): denaturalised, repeated, repetitive, spatial movement, symmetrical rhythm, unnatural,
Irwin (1997): abstract, bifurcated, denaturalised, repeated
Baer (1998): abstract, curved, flat, rhythmic, soft, spiral, stylized
Yeomans (1999): dynamic, geometric, rarely terminated, stylised, two dimensional
Clévenot (2000): abstract, invade any unoccupied spaces, linear, stylistic
Hillenbrand (2001a): abstract, geometric, logical, mathematical, organised, strict, surreal
Trilling (2001): delicate, little remains of the vine, repetitive, simplified

Geometry

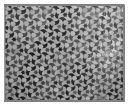
> The Islamic art of geometric form, then, can be considered the crystallisation stage, both of the intelligence inherent in manifest form and as a moment of suspended animation of the effusion of content through form (Critchlow 1976).

Grabar in his *The Mediation of Ornament* (1992) argues of three functions in geometry: framing, filling, and linking motifs. The word 'geometric' is applied to three different kinds of form in Islamic ornament. The first form is a geometric pattern that presents in mosaic tiles and stuccoes of the Alhambra in the 14th century. Despite changes in the composition and reconstruction and different

social and contextual meanings, geometry denotes a 'regular' element which creates a 'regular' pattern. The second is less rigid and more difficult to define than the first. In the Mshatta palace of the Umayyad, the majority of vegetal motifs are enclosed as a circular unit, making a regular outline, and is classed as geometric. The third is 'loose' geometry, and includes all repetitive and rhythmic motifs which appeared in border patterns on mosaic floors and in overall designs.

Referring to the first form, stricter linear and geometric shapes have been displayed in a variety of combinations in all periods. In fact, geometric patterns were common to classical Greek and Roman designs, but Islam elaborated them in complexity and sophistication, transforming decorative geometry into a major art form. This demonstrates the fascination of Islamic artists with the visual principles of repetition, symmetry, and continuous generations of pattern, clearly related to the study of mathematical calculations. All patterns were built up from a circle as a basic linear unit and a determining factor of the system of proposition. The circle can be developed into a square, a triangle or a polygon, and elaborated further by multiplication, sub-divisions by rotation, and by symmetrical arrangements, giving prominence to decorated borders or other surfaces.

Moreover, Islamic culture has proved itself best in the use of geometric patterns for artistic effect. Anyone contemplating its abstract patterns could associate them with mystical thought, because geometric patterns reveal an aspect of the multiplicity of the Creator. For example, roofs tend to be circular as a symbol of the cosmos, and a square floor implies the earth itself. Both in harmony signify infinity.


Geometric designs, Alhambra Palace, Granada, Spain, 14C

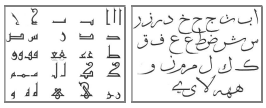
The symbolic circle is elaborated by Crtichlow (1989). The lower half of the circle represents 'the world of sense', while the upper half expresses 'the world of being'. A circle corresponds to the Islamic view of creation. The circle as a metaphor for Divine Unity is again stressed by Nasr (1987) that the Muslim love of geometry and number is directly connected to the doctrine of Unity (al-tawhid). The sacred character of mathematics is evident in ornamentation which presents the One and the many. On the other hand, Grabar (1992) views geometry as an intermediary for displaying aesthetic beauty:

> Geometry…forces one to look and to decide what to think, what to feel, and see how to act… The penalty of freedom in the arts is loss of meaning… It is meant only to be beautiful.

Calligraphy

> Recite in the name of thy lord who created
> Created man from a clot;
> Recite in the name of thy lord,
> Who taught by the pen,
> Taught man what he knew not
> (the Holy Koran, surah 96:1-5)

The only true novelty in Islamic ornament is calligraphy. It became a major vehicle for aesthetic energies and symbolic meanings, because the word of God is recorded in the Holy Koran. Muslims understand that the use of a fine script (*kalle,* beautiful; *graphe,* writing) is not only their religious duty, but it also is the most appropriate ornamentation for a mosque building. Forms and styles of calligraphy should be learned to underline epigraphy as a dominant factor in Islamic ornamentation. Its advantage lies in the variety of styles, depending on the nature and context of texts in different periods. Holy inscriptions are normally placed where any Muslim viewer can see them and learn them by heart, while an amalgam of lettering, texture, colour, and inscription embellishes the building. Calligraphy can also identify a building or its builder or patron.


Kufic and Thuluth, a type of Naskhi style

Two main styles of calligraphy were developed: (i) the script known as *Kufic* from the name of the city Kufa in Iraq in the seventh century, and (ii) *Naskhi*, a word derived from signifying 'to copy' and its meaning is almost equivalent to 'cursive'. *Kufic* is a rectilinear and angular form which fits for a certain aesthetic intention and scope. It was customarily used in the Holy Koran, because of the vertical strokes as its character and its more geometric configuration than *Naskhi*. Up to the 12th century, *Kufic* was the only script utilized in decoration of mosaics and carved stones, due to its monumental character, its easy transposition into different materials, and its straight lines and empathic uprightness. The first use of epigraphic decoration was in the Dome of the Rock in Jerusalem in 685-691 A.D. The purest angular *Kufic* scripts seemed to be used more in minarets and mosques, while ornamental *Kufic* were favoured on any type of surface. *Naskhi*, a cursive form of writing, was invented by Ibn Muqla, and acquired its status as a major script at the hands of successive master calligraphers, such as Ibn al Bawwab and Yaqut al Musta'simi.

The script was inherited from pre-Islamic and early Islamic scripts, and appeared in a more systematized form at the end of the ninth century. Less monumental than *Kufic*, it was mostly applied to inscriptions, rather than in decoration. To architecture, its curves and oblique slants brought a supple and living element. Islamic calligraphy can be considered 'the geometry of line'. The proportion of the letters and the curved strokes are executed according to mathematical calculations. The term 'spiritual geometry' describes both the structure of calligraphy and the whole essence and spirit of Islamic art. Mystical values are also manifest in calligraphy as well as in arabesque and geometry. A Sufi belief in awareness of God's presence and purpose in His creation is exemplified in iconic form in the art of calligraphy. Calligraphy is likely to be the most powerful means of expressing God's message.

> The very structure of calligraphy, composed of horizontal and vertical strokes woven into a fabric of profound richness, is potent with cosmological symbolism. The verticals…provide an ontological relationship as well as a structure for the design, while the horizontals

…correspond to the creation that develops the balance and flow of the basic conception. It is through the harmonious weaving of the horizontal and the vertical that unity is achieved (Ardalan and Bakhtiar 1973).

Commonality of Three Genres

Many similar expressions on three genres were found in different texts, such as geometric(al), linear, and mathematical, demonstrating the interactive quality of Islamic ornament.

Arabesque: abstract, anti-natural, circular, continuous, curved, geometrical, infinite, linear, mathematical, mystical, regular, repetitive, rhythmic, symmetric

Geometry: abstract, circular, continuous, geometric, linear, mathematical, mystical, regular, repetitive, rhythmic, symmetric

Calligraphy: curved, geometric, rectilinear, mathematical, mystical

It can be concluded that the three genres of arabesque, geometry, and calligraphy are inter-related in mosque ornamentation, in order to maximise their beauty and symbolism.

References in alphabetical order: Ardalan and Bakhtiar 1973; Baer 1998; Behrens-Abouseif 1998, Brend 1991; Burckhardt 1976/1980; Clévenot 2000; Critchlow 1976/1989; D. Jones 1978; Davies 1982; Grabar 1987/1992; Hillenbrand 1994/2001/2001a; Irwin 1997; Khazaie 1999; Kühnel 1949; Lee 2000; Mitchell 1978; Naddaff 1991; Necipoğlu 1995a; Papadopoulo 1980; Riegl 1893; Yeomans 1999

CHAPTER III

Hindu-Buddhist Java (8-15C)

Bahasa Indonesia is the Indonesian official language adopted to unify diversity among its geography, people, and culture after independence in 1945. In parallel, a Javanese term, 'Bhinneka Tunggal Ika' (unity in diversity), was created by the Javanese people to emphasize their own identity and culture. Java has been a centre where mystical animism, Hindu-Buddhism, and Islam co-existed together, moving toward a syncretic religion. Java became a peaceful melting pot. It is a charm and a treasure.

Although this research focuses on continuity of pre-Islamic motifs in Javanese mosques, it is important to give an account of ornamentation prevalent in the pre-Islamic period. Starting with its geography and history, the process of Hinduisation is explained through contradictory and compromising theories. A fusion of mystic animism[5], Hinduism, and Buddhism shows how a syncretic Javanese religion came to be practised in temple ornaments, such as prehistoric[6] tumpals, Hindu-Buddhist kala-makaras, lotus buds, and scrolls with different flavour. Santiko (2004interview), Indonesian scholar specialising in Buddhist archaeology recommends to focus on motifs in Java, due to local creativity, instead of comparing with those of India or China. Hoewver, some information about India can help to trace the origin of the Hindu-Buddhist Javanese culture.

JAVA, INDONESIA

The huge Indonesian territory demonstrates a variety of cultural expression, yet throughout history… The country has taken elements from each civilisation through their contacts abroad, but never adopted other cultures completely. Instead, Indonesians blended imported elements into existing circumstances, in order to create their own characteristic culture, with notable geographic variations (Pepin Press 1998).

Indonesia, known as the Republic of Indonesia after gaining independence from colonial powers on 17th of August in 1945, is situated in Southeast Asia in the Malay Archipelago. The fourth most populated country in the world, Indonesia comprises more than 13,000 islands extending 4,800 km along the equator from the Malaysian mainland and stretching towards Australia. The population is estimated at 237 millions on an area of about 1,900,000 sq km. Indonesia's main island groups are the Greater Sunda Islands (Java, Sumatra, Kalimantan, Sulawesi), the Lesser Sunda Islands (Bali, Flores, Sumba, Lombok, West Timor), the Moluccas, and the Riau Archipelago. Papua, part of the island of New Guinea, was integrated into Indonesia in 1969.

Its ethnic structure falls broadly into two groups, the Malayan and the Papuan, with many subdivisions, owing to numerous immigrations many centuries ago, largely from Asia. Chinese constitute the majority of non-indigenous population, and minorities of Arabs and Indians exist. Among more than 300 languages, Bahasa Indonesia has been adopted as the official language. Today almost 90% of the population are Muslim, making Indonesia the largest Islamic nation in the world. Around 7% of the population are Christian, and about 2% Hindu and 1% Buddhist. The most important islands, culturally and economically, are Java, Bali, and Sumatra. Java is 1, 200 km long and 500 km wide, situated about 7^0 south of the equator on the southern border of the Indonesian Archipelago with uninterrupted sequences of extinct and active volcanoes. The tropical climate, rich rainfall, and fertile soils provide for abundant agriculture.

Indonesia has a long history, starting from the third millennium B.C. of neolithic times, characterised by the advent of village settlements, domesticated animals, polished stone tools, pottery and food cultivation. Seafaring was demonstrated as a major occupation by stylised boat motifs, depicted on pottery, houses, sacred textiles of primitive tribes, and in bronze reliefs. At the end of the neolithic period, megaliths were constructed, leaving many places of worship or tombs. No definite date can be given, but are known to be less than 2,000 years old. The Chinese-influenced Dong Son Bronze-Iron culture of northern Vietnam started in the first millennium B.C. in Southeast Asia. All early Indonesian bronzes known to date are clearly of the Dong Son type, probably dated from between 500 B.C. and 500 A.D. Dong Son culture created fine ceremonial bronze drums and axes which are decorated with engraved geometric, animal, and human motifs. It was highly influential in Indonesian art and culture.

Indonesia came under the influence of Indian civilization mainly through trade and Buddhist missionaries already in the fifth century, but it was in the eighth century that the Sanjaya and Sailendra kingdoms were founded in Central Java, erecting Hindu and

[5] During the prehistoric period, both animism and dynamism were prevailed. Animism is based on a mystic belief in a cult of worshipping ancestors, while dynamism stands for mystic beliefs in certain objects, such as sun, rock, river, etc. As Sufi Islam has mystic beliefs, the term 'animism' represents prehistoric belief in this research.

[6] Tumpals appeared both in Neolithic and megalithic times, naming as 'prehistoric'.

Buddhist temples such as Prambanan and Borobudur respectively, while Sumatra was ruled by Sriwijaya kingdom. Around 930, political power shifted to East Java, and the Hindu kingdoms of Singasari and Majapahit arose, covering vast areas of the Malay Peninsula. Especially under Majapahit in the middle of the 14th century, the country experienced the most golden period of the whole Indonesian history, and the temple complex of Panataran testifies to its magnificence.

Despite the earlier arrival of Muslim traders in the 11th century (1082), a gradual penetration of Islam began, and by the end of the 16th century, Islam replaced Hinduism and Buddhism as the dominant religion. The first Islamic kingdom of Demak was established on the coastline (*pasisir*) in northern Java after the conquest over Majapahit, and many foreign Muslim traders settled down in harbour cities. During the second half of the 16th century, the political power shifted to Central Java where the Mataram kingdom was founded. Mataram was Islamic, but patterned itself after the great Hindu Majapahit, and practised mystic animism, Hindu-Buddhism, European pomp, and Islamic circumstance. European influences in the Malay Peninsula came with the arrival of the Portuguese, who captured Malacca in 1511 in pursuit of spice, and established trading posts. The Dutch (1596) expelled the Portuguese, and opened the United Dutch East Indies Company (VOC) in 1602. Becoming the leading power in Indonesia by the 17th century, the Dutch built Batavia (now Jakarta) as the capital of the colony, and two centuries later, controlled the whole area, although a break (1811-8) took place when the islands were ruled by the British as a result of a victory over Napoleon in a war (1811-4). The independence movement began early in the 20th century, and the formation in 1908 of Budi Utomo (High Endeavour) is often considered the start of organized nationalism. The Indonesian Nationalist Party (PNI) was set up under the leadership of Sukarno in 1927, and after a short occupation by the Japanese during the Second World War, Sukarno, as President, proclaimed an independent republic in 1945.

THE PROCESS OF HINDUISATION

> The island of Java received the same form of religio-culture as that which developed in India, by means of progressive movements which infiltrated into it during the course of the first millennium (Brown 1956).

The term 'Hinduisation' implies the absorption of both Hinduism and Buddhism. The main introduction of Indian culture into Indonesia already in the fifth century has been a subject of contention. Did South Indians take the initiative or native Javanese or both? It seems that Indian culture penetrated peacefully through diplomatic missions, immigration, trade, Buddhist missionaries, Indonesian pilgrimages, and inter-marriages. According to Stutterheim (1931), Indonesia came into contact with Indian culture in several ways, such as Indian immigration, which could inspire creative Indonesians to adopt India's cultural heritage. The basic problem is, however, to assess how these foreign elements were assimilated into Indonesian culture when ancient Javanese culture was ruled by the megalithic philosophy of life: ancestor-cult and animist rituals. Sedyawati (2004interview) disagrees with Stutterheim on the basis that there is no concrete evidence of Indian immigration to Indonesia.

Sudradjat in his PhD thesis, *A Study of Indonesian Architectural History* (1991), introduces different options held by different scholars. Krom (1931) maintains that Hindu culture and civilization were imposed by Indians on indigenous Indonesians, testified to by the Javanese Hindu kingdoms between the ninth and 13th centuries. He regards Hindu-Javanese temples as a result of Hinduisation, but characterises them as 'an art originating from India executed by Hindu-Javanese'. Javanese artists who converted to Hinduism adopted Indian art traditions, and added 'reluctantly and accidentally' to their Indonesian character.

On the contrary, Bosch (1946) claims that Indian influence was not the result of Indian efforts to expand their culture; rather it was a consequence of the great number of Indonesians who visited Indian sacred places and studied with Indian masters. Accordingly, Hindu-Javanese temples were built by native Javanese. Instead of expressing 'influence' or 'mixing', he described Hindu-Javanese culture as the creative product of Hindu-Javanese society, guided by the Indian spirit: 'predestined to develop into an independent organism in which foreign and native elements were to merge into a dissolvable entity'. Prijotomo (2004interview) agrees with this that 'Temples in Central Java were originally in a Javanese style. They are a Javanese creation, a modified Hinduism. It is Hindu-Javanese'.

Bosch's 'indigenous theory' was reinforced by Wales' (1948) concept of local genius. The term 'local genius' designates the ability of certain Southeast Asians who can shape a foreign culture to make it suitable to local conditions, and thereby to create a new culture. Thereafter, Wales attempts to link local genius with monumental art, as 'it is in monuments that local genius can most manifest itself'. Tjandrasasmita (2004interview) highlights the idea with Wales that 'the proportion of ornament in temples depends upon artistic concepts and creativity. It is a result of local genius'. These continuous but different theories seem to be compromised by Kempers (1937). For him, the Indian and Indonesian cultures were components of equal value in 'one indivisible whole'. In the relationship between two cultures, he rejects the term of 'influence', and prefers a dynamic concept of 'a stream of culture', because Hindu-Javanese culture gradually came into being as an amalgamation of Indian and indigenous elements. His theory has been extensively accepted by Western scholars, while contemporary Indonesian archaeologists tend to continue with the 'indigenous theory'.

Regarding the source of influences on Java, Wagner (1959) asserts that the South Indian culture of the Gupta kingdom was introduced into Indonesia between the third and sixth centuries. Fontein (1971) and Suleiman (1976) suggest that evidence identifies various influences from different regions with their own distinctive cultures, such as the Pallava and Chola kingdoms in the South, Gujarat in the West, and even Ceylon (Sri Lanka). Of the four - (i) Krom's Indonesia's indebtedness to civilised Indian culture, (ii) Bosch's indigenous theory, (iii) Wales' local genius, and (iv) Kempers' equal value of cultures, Bosch and Wales' theories seem to appeal mostly to Indonesians. A term 'Hindu-Javanese' is an expression combining Indian artistic tradition with indigenous Javanese spirit.

A FUSION OF ANIMISM, HINDUISM, AND BUDDHISM

> The Javanese finds it easy to fuse various religious conceptions. Mysticism was a necessity of life for him, whilst he rarely attached decisive importance to theological problems. This accounts for the characteristic feature of religious life in Java: an open-minded tolerance The second characteristic…is ancestor worship, originating in the neolithic age (Wagner 1959).

During the establishment of peasant culture, the indigenous Javanese had much in common with mystic animism, believing in spirits which inhabit the worldly environment. Into this culture, new and dynamic Indian Hinduism, particularly in its Sivaite (god of destroyer) aspect, and Mahayanist (Great Vehicle) Buddhist elements, penetrated in *kraton* (palace) noble art from the fifth century. In a short time, there occurred a distinctive fusion of beliefs and cultural elements, and Hindu-Buddhist dogma was interpreted according to their liking and the convenience of mystical meditation, rather than dogmatic principles.

In the process of the Indian infiltrations, two main elements were Hindu-Buddhism, and the Hindu social concept of kingship. Other related cultural characteristics, including ideas and techniques in architecture and sculpture, were selected and modified. For example, in Central Java, Hinduism and Buddhism were tolerated alongside each other, sharing the Sanskrit language, a view of the world, and the nature of spiritual power and religious life in common. Reliefs on the temple of Borobodur in the eighth century depict Hindu Brahmans worshipping a Buddhist *stupa* (monument), and Buddhist Prince Sudhana receiving instruction from Siva, the Hindu god. During the reunification of Central Java, the Hindu Sanjaya acquired a new cultural and technical impetus from the Buddhist monuments of India. On the ruins of an old temple, Rakai Pikatan, the Hindu Sanjaya ruler, erected the Buddhist temple of Plaosan as a step towards syncretism. Moreover, King Kertanegara of Singasari constructed Jawi, a combined Siva-Buddha shrine. In Majapahit of the 14th century, both religious leaders had equal status. But, the expression 'syncretism' has caused a few disputes among scholars.

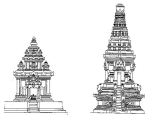
> Syncretism in the Hindu-Buddhist religion has been challenged. Now we use the term 'coalition' or 'parallelism', because syncretism in the Encyclopaedia of Religion is defined as the combination of two or more cultural traits, so that a new cultural element emerges containing both traits. In reality, they practised each in parallel. So, I favour the term 'parallelism' (Santiko 1995, 2004interview).
>
> I only agree with this when parallelism happens in simple things, but when things start to develop, it is called diffusion (Tjandrasasmita, 2004interview).

Whatever it is, Javanese religion is an outcome of blending mystic animism, Sivaite Hinduism, and Mahayanist Buddhism. The cultural history in Java proves how syncretism has peacefully occurred in temple architecture and ornamentation across Central and East Java.

TEMPLES: A REPLICA OF THE COSMOS MOUNTAIN, MERU

Temple (*Candi*)

> Architecture is a way of expressing people's desires, giving the form that is desired to space. The temple is its most perfect expression. For all religions, space is the essential manifestation of divine creative powers. The temple raises a minute portion of the earth to superior importance, and is, by this fact alone, apart from any other symbolism, a proof of divine presence (Dumarçay 1986).



Two styles of temple in Central Java (760-930); East Java (930-1500) (Soekmono 1971)

In the early 19th century, Raffle's (1830) interpretation of a *candi* as a royal tomb enshrining the ashes of the burnt corpses of kings was widely accepted. A century later, Krom (1923) says that the *candi* is a monument erected over the ashes of a deceased person. His idea culminated further Stutterheim (1931) until Soekmono (1974) challenged with a new theory. To begin with Stutterheim, he saw old Javanese *candis* as essentially different from Indian temples, because they are not places for worship of the Hindu deities, but are funeral temples to worship dead kings who were identified with Hindu gods after their deification. Moreover, he thought that *candis* are a continuation of ancient Indonesian animism in a new form.

On this view, Soekmono insists that the *candi* is a shrine and is dedicated to deified kings who were famed for virtue during their lifetime, demonstrating evidence of a *pura* (Balinese temple) where the animistic concept of ancestor worship with cosmological significance can be implied. The installation of Hindu statues is similar to the consecration of monuments in megalithic culture. In 1990, he developed his theory that a tendency of returning to prehistoric concepts influenced the architecture of East Java, shown in the temple complex of Panataran in Majapahit, regarded as a direct forerunner of the Balinese temple of today. From a cosmological viewpoint, a *candi* is a place where gods were considered to have their actual presence, representing a replica of the Cosmos Mountain, Meru. And the central object of worship is the image of the God; the king is treated as a living God, and on his death he merges directly with the God. If we accept the latest theory, a *candi* in Java appears to be a temple which dedicated to deified kings.

Borobodur (8C) of Central Java and Panataran (1197-1454) of East Java

Candi Borobodur occupies the foremost position in the study of form, function, and meaning in Javanese temple architecture and ornamentation. Interpreted as a 'hill monastery', it was built in the second half of the eighth century by the Buddhist Sailendra kingdom. Stutterheim (1956) held that Borobodur, like all other *candis*, symbolises the Cosmos Mountain, Meru, the mythical abode of the gods. The temple has a tripartite of the base of the monument, the square terraces of the pyramid, and the round terraces with *stupas*. Six of the nine terraces are square, and are decorated, while the rest are circular and devoid of all ornamentation.

Borobodur (8C), Central Java; Panataran temple (1197-1454), East Java

An examination revealed that the layered stone and decorative structure system have the durability and the character of infinity to form an ideal home for the gods. In addition, the structure allows to ornamentation, reducing the massiveness of the building. According to Zimmer (1960), the refined techniques of the sculpture and ornamentation of the temple appear to have an Indian origin, guided by indigenous inspiration, due to a close relationship between Gupta India (c. 350-650 A.D.) and Borobodur. Gupta is considered to be the golden age of Indian culture. Its shrines reflect 'sudden glory' under a fresh inspiration. Munsterberg (1970) has another opinion that carvings in Borobodur exemplify Javanese characteristics, such as the use of black volcanic stone, the ethnic type of sculpture, and softer and gentler forms than Gupta's carving. But he accepts a reference to Indian models in form and iconography. Soekmono (1990) shares Munsterberg's idea, because the art form of Borobodur was not transplanted intact from India to Indonesia, but was a combination of the Indian world of thought and Indonesian creativity in accordance with its native potentiality and tradition. Stutterheim connects the temple with Gandhara[7] of Northern India in the first century A.D.

> I found among the remains of Nalanda some things that may be recognized as the immediate models of Central Javanese art… The temples of West India, Nalanda, [are linked] to the renowned school of Gandhara, where the sculpture of *stupas* is linked with the Hellenistic sculpture of sarcophagi known to us from Asia Minor… We find an offspring thereof in the Borobodur.

In East Java, the most significant *candi* is the Hindu temple complex of Panataran (1197-1454). Situated on the north of Blitar, it was consecrated to Siva, the Lord of the Mountain. Despite some earlier construction during the Singasari period, the important parts were finished at the time of Majapahit. The *candi* has a variety of ornamental motifs in three temple courts which are connected to each other. Kala (lion) heads and tumpals (triangular motifs) were displayed on a temple in the first court, and another temple in the next has a unique decoration. A big naga (snake) is coiled round a figure, and tumpals reappear. In the third court stands the main temple with a Meru roof. It bears lavish ornamentation with bands of friezes and numerous medallions of animals and reliefs, illustrating the Hindu epic story, Ramayana. These are designed in an ingenious *wayang* (shadow puppet) style. Commaraswamy (1972) further explains:

> Here the worship of Siva as a Mountain God facilitated a combination of Hinduism with old Indonesian terrace cults; in the resulting mixture of Indo-Javanese and Indonesian elements and a new combination of both there appeared for a brief period a definite style, not lacking in vitality.

Two Cultures of Central (760-930) and East (930-1500) Java

Hindu-Buddhist art in Java is divided into two periods: Central (760-930) and East Java (930-1500). Several attempts have been made to show continuity between them, and it was Krom (1923) who began discussing the unity of two cultures. Temples of both regions display a continuous aesthetic principle. He called Central Javanese art 'Hindu-Javanese' style, and treated East Javanese art as a 'degeneration' of Central Javanese style. The continuous line has never been broken in any respect, and the difference between what we call Central-Javanese and East-Javanese art…is the gradual development of the art sprouting from Hindu tradition in the Indonesian way… No matter how far the endpoints might stand from each other, Hindu-Javanese art remains one and indivisible.

Krom has met with much opposition in detailed analyses by Wagner, Holt, and Fontein. They claim that ornamentation of Central Java was directly influenced by Indian elements, while that of East Java was created by indigenous Javanese. Wagner (1959) argues that ornamentation in Central Java is totally subordinate to the concept of the building. Ornaments become like works of art 'in their own right', with lavish embellishment, while in East Java, the style of sculptures is no longer Indian in character, but evolves into a style similar to the native *wayang*. Moreover, he disagrees with Krom's 'degeneration' theory, maintaining that the visible change of form in religious art can be understood in terms of two interacting Javanese cultural movements.

Holt (1967) shares Wagner's perspective. On temple ornamentation in East Java, natural elements become highly stylised. Trees and foliage adorn low relief in a combination of spiral and flame-shaped motifs. The filling of space, animating it with dynamic configurations, is another new feature. So, the style of East Java is an outcome of a creative response by its artists to the cultural climate of their time. Denying Krom's 'degeneration', Holt describes a process of 'indigenisation', in which foreign influences are integrated into local ideas and concrete forms as 'the spirit of the age'. Fontein (1971) also differentiates between two cultures, although he believes in their continuity. In Borobodur of Central Java, the artist practised his rich artistic imagination and luxurious ornamentation in variations on lotus scroll and kala-makara (lion head and fish-elephant trunk) motifs. Eastern Javanese temples do not display the same characteristics, despite their higher artistic quality. The relief sculpture shows a stylised and literary flavour. Art of Central Java is 'monumental and robust', but that of East Java is 'intimate and poetic'.

Despite this tendency towards *wayang*-like stylisation, the tradition of spirited, lively rendition…continued to exist, and emerged, again and again, from among the more hieratic and stylised representations in relief sculpture.

This dissimilarity was noted by Klokke (2000). Central and East Javanese ornamentation have a few motifs in common, but have their own distinct motifs. Central Java has kala, makara, lotus, rosettes, and upward rising or rectangular panels with scrolls, derived from Indian art. In East Java, motifs are concentrated horizontally, particularly in three horizontal bands on the upper, middle, and lower part of temple bases and bodies. Many Central Javanese motifs reappeared sporadically or vanished completely in East Java.

Contemporary Indonesian scholars add to this. Central Javanese motifs have a classical Indian style, using lotus, while those of East Javanese have indigenous and slender, applying different forms of ornaments (Tjandrasasmita 2004[interview]). There is a revival of indigenous ornaments to temples (Sedyawati 2004[interview]). The former characterises in three-dimensional and voluminous with natural qualities. By contrast, the latter is two-dimensional, flat, and stylised: 'Decoration in East Java is like renaissance of pre-Hindu ideas which were animistic and two-dimensional' (Prijotomo 2004[interview]).

[7] A Hellenistic fusion into Gandhara (B.C. 250 to 450 A.D.), called the Greco-Buddhist, shows a Corinthian capital with a small Buddha figure enthroned amidst the conventional Greek acanthus leaves.

Temple Ornamentation

> Indian art is essentially idealistic, mystic, symbolic, and transcendental. The artist is both priest and poet… Indian art appeals only to the imagination, and strives to realise the spirituality and abstraction of supra-terrestrial sphere (Bosch 1970).

The Chinese-influenced Dong Son style of the Bronze-Iron age had an influence in Southeast Asia. In Indonesia, spiral lines and geometrical decorative figures, such as tumpal and swastika, appeared along with ancient symbolic signs. Popular plant motifs were later introduced during Hinduisation in the fifth century.

As *candis* represent the universe and the home of the gods, their proportion, numbers of pillars and corridors, and sculptures should conform to the canon of Hindu religious architecture and sculpture, called *silpasastra*. The walls, carved with decorative motifs of human beings, animals, and mythological characters, as well as floral motifs, have a specific place in the scheme of temple architecture. However, the canon does not deal temple ornamentation in depth. In adorning temples, Javanese artists elaborated a wide range of ornamental motifs from India into the Javanese environment. A combination of different motifs was usual, varying according to location, and in groupings on temples, in order to deliver messages of the divine nature of structures and ornaments. Many motifs are of things which Javanese believed were found in heaven.

Two common motifs are triangular shaped antefix and tumpal, carved with different variations on the tops of walls and cornices. As an animal form, kala-makara appears on lintels of doorways and stairs in a combination of kala, as symbol of time, and makara, representative of the primal source of life. Hindu garuda (bird) is repeatedly used with the Vishnu (Hindu god), or without him, to connote the mount of Vishnu. It is possible that reverence for garuda in Indonesia became combined with a much earlier bird cult.

It is lotus (*padma*) by which the sacredness of the temple was mostly expressed, signifying the seat of the highest divinity, the birth of the Universe, the birth of the Buddha, and the ultimate truth. Indian mythology says that gods were born out of the lotus flowers upon which they were seated. Of floral decoration on temples, two main purposes of aesthetic beauty and religious connotation exist. The 4-, 5-, 6-, 8-petalled floral motif without leaves, stems, and fruits vary their symbolic meanings according to number. Consequently, symbols are more important than a purely decorative function.

Moreover, on relief panels and niches of temples, kalpataru (the wishing tree) represents heaven, while purnaghata (a pot of plenty)[8] appears with flowering plants or scrolls growing from ewers of holy water, symbolizing the elixir of immortality. To this, kinnara (heavenly musician), usually female, half-human, half-bird, is added.

Before starting the next section, a reason for choosing four motifs (tumpal, kala-makara, lotus bud, scroll) should be clarified. During the field study, the researcher often noticed these in temples and mosques. As the research question investigates the continuity of pre-Islamic motifs in Javanese mosque ornamentation, prehistoric tumpal was selected to represent indigenous ornament in Java. Hindu-Buddhist kala[9]-makara, lotus bud, and scroll were singled out to demonstrate Hindu-Javanese ornaments after Hinduisation in the fifth century. Although the hadith forbade depicting living figures in Islamic art, surprisingly, kala-makara did not disappear in Javanese mosques. Rather they were modified, probably as an outcome of Hindu-Javanese syncretism. Obviously, the researcher decided these four as the most excellent syncretic motifs across the pre-Islamic and Islamic periods.

Prehistoric Tumpal

> Javanese Islam adopted indigenous geometrical ornaments and Hindu-Buddhist floral motifs (Subarna, 2004[interview]).

A tumpal, a decorated triangle, is one of the most widely distributed ornaments in temples. The motif not only originated from ancient neolithic and megalithic times, but survived in regions where Hinduism was almost infiltrated. No certainty on its origins has been reached. Some scholars interpret it as a human figure which became unrecognisable, due to the extreme stylisation, while others consider it to be a stylised bamboo shoot. As an ancestral figure or a bamboo, it had either a magic character or represented an idea of fertility respectively. Like fisherman's baskets which indigenous seafares in the neolithic period used, a probably ceremonial vessel from Madura outside Java (exhibited at the Museum Nasional in Jakarta) reveals that a triangular decoration forecasts the tumpal ornamentation of later Indonesian art. Tumpals, filled with scrolls, were mostly popular in batik work. Sometimes the triangle itself is omitted, thus only the scroll ornament remains keeping a more or less triangular shape.

Hindu-Buddhist tumpal has another role. According to Tjandrasasmita (2005[interview]), 'Tumpal is a symbol of the Cosmos Mountain, Meru. Beliefs about its role existed in prehistoric times. This thought was expressed in Hindu-Buddhist temples and Islamic mosques, owing to Javanese Islam being a syncretic religion'. In *candi* Kalasan (9C) in Central Java, two types of tumpal, freestanding and attached to other objects, were shown. At the temple entrance, a big tumpal adorns the upper shoulder of a lion, and stretches over his neck and head. Although its shape is not a typical geometric triangle, its curved triangular outline makes it to be the tumpal.

Tumpal in Panataran (1197-1454), East Java

Tumpal border, composed of a row of isosceles triangles, is beautifully elaborated on the Naga temple of Panataran (1197-1454). Here tumpal is embellished with scrolls, and occurs four times, twice to the right and twice to the left on stairways. In *candi* Djago (1268), tumpals on the upper corner of the entrance and the volute spiral on the flight of steps leading the second terrace to

[8] The Gupta capital has purnakalasa (bowl of plenty), signifying a renewed faith. Allegory of a 'vase and flower' motif is one of the most graceful forms in Indian architecture.

[9] Referring to the origin of kala, Subarna (2004[interview]) insists on a similar type which had already appeared in the prehistoric Indonesia.

the next demonstrate their popularity as ornaments in East Java. Tumpal is a significantly sacred motif, linking mystic animism to Hindu-Buddhism in the Javanese pre-Islamic period.

Hindu-Buddhist Kala-Makara

A kala head was frequently shown in Hindu-Buddhist temples. In India, it was often taken to be a lion's head (*kirtimukha, banaspati*), but in Indonesia it merged into a human face or a demon's head. Kala with the swollen eye and tusk appears over an arched gate of any Javanese Hindu-Buddhist temples, while a pair of makaras by curving outwards terminates at the bottom of a gatepost. A makara, an imaginary animal with the shape of a fish and the trunk of an elephant, was introduced into Indonesia during Hinduisation.

In Indian mythology, kala-makara (or naga=snake) represents the Cosmos Mountain, the abode of the gods. It also serves to ward off demonic influences from the temple. Another assumption is that kala and makara stand respectively for the celestial and watery elements in creation. In a combination, they represent duality, such as celestial/watery, or male/female. They imply the principal aspects of totality, illustrated in a beautiful kala head from *candi* Kalasan. The face protrudes against a background of floral ornament, and part of the head has been transformed into leaves and shoots.

The kala-head, in Indonesia, apparently had various symbolic functions. As a head completes with the lower jaw, it could be interpreted as the body-less head of the monster that swallows the moon (causing eclipses) and which was punished by decapitation (Kempers 1991).

Makara, Prambanan (8-9c) Central Java; Kala, Singasari (12c), East Java

The face of kala from *candi* Djago (1268) in East Java is much more human than that of Central Java. The mouth is as terrifying as the bulging eyes; the hands, a new addition in East Java, are raised in a threatening gesture. The high crest which crowns Central Javanese kala has been reduced to a triangular ornament above the nose, and the ear ornaments are shaped like the leaf-like decoration. Central and East Javanese kalas were again differentiated. The former has no lower jaw, and shows a friendly appearance, whereas the latter displays a full face with a jaw having a fiercer look. Moreover, combined kala-naga in East Java replaced kala-makara in Central Java. Kala-makara appears to be a sacred motif for protecting gods. They can imply totality.

Hindu-Buddhist Lotus Bud

In Hindu-Buddhist art, many symbols also have a decorative function and may be components of a highly developed system of ornamentation. They are encountered on a great variety of works of art; buildings and carved/painted figures. Some are repeated in all Hindu-Buddhist lands, and many of them have a common link. The less representational and the more fitted for abstract decoration, the easier they can be ornaments. Plant motifs predominate over animal ones, and geometric over figurative.

Lotus played the most significant role in Hindu-Buddhist art. Three types exist: (i) the red lotus (*Nelumbium speciosum*, in Sanskrit *padma*) has broad petals with buds and a cone-shaped receptacle. Its leaves undulate at the edges, and its flowers rise over the water, (ii) the blue lotus (*Nympahea stellata*, in Sanskrit *utpala*) has narrow petals, a flower half in bud, a bulbous receptacle, and smooth leaves. Neither leaves nor flowers rise over the water, and (iii) the white lotus (*Nymphaea* lotus, in Sanskirt *kumuda*) has broad but pointed petals with a bulbous receptacle. The leaves do not twine, but leaves and flowers float on the water.

Hindu mythology says that the world was composed of *atman* (the soul) and *maya* (illusion), and its creation was symbolized by the growth of lotus. As the primordial lotus grew from the waters of eternity, bringing Brahma (god of creation) and all other creations, it became a dominant motif in representing creation and sanctity. In Hindu-Buddhist temples of Central Java, lotus, characterized by naturalism, was extensively used for wall decoration, signifying ideal beauty and integrating natural forms and supernatural power. The identity of the primeval lotus and Dharma (mystical doctrine) is fundamental in Mahayanist (Great Vehicle) Buddhism, too. Lotus, as creator and supporter of the Cosmic Tree, became the pattern for the abstract notions of Dharma, preached by the Buddha.

Bodhisattva lotus-in-hand in Borobodur (8C), Central Java

Lotus in iconography has four main forms: (i) lotus goddess, (ii) lotus supports, (iii) Bodhisattva lotus-in-hand, and (iv) lotus flowers. At first, (i) lotus goddess (*padma*), dwelling in lotus, is synonymous with Sri Laksimi, wife of the Hindu Vishnu god who is the creator and maintainer of the world. Representing earthly fulfilment and bliss, Laksimi is a manifestation of the universal mother of life in her benevolent life-bestowing. She presides over the fertility and moisture of the soil, and stands on the lotus. (ii) On an Amaravati pillar (3C) in India, an early example of lotus pedestal for the Buddha exists. Here he stands on expanded lotus calyxes. As luminous phantoms, the Buddha and Bodhisattvas reflect the phenomenal planes of celestial and terrestrial interaction.

The earliest seated Buddha on lotus calyxes appeared in the later Gandhara works (3C). Since then, lotus on the Buddha pedestal has become the principal image of Mahayana worship. (iii) Bodhisattva Avalokitesvara is the most powerful Buddha, holding a lotus flower on a long stem in his left hand, supported by a lotus pedestal, 'a wandering saint teaching the doctrine of enlightenment to all creatures' (Zimmer 1960). In Java, at one time Avalokitesvara,[10] the Buddhist goddess, moved by compassion for this wretched world, shed a tear which changed into a lake full of lotuses. On one of them arose a goddess. Her figure is represented in the central panel of *candi* Mendut (9C), and lotus stalk is supported by two nagas. In Borobodur, Bodhisattvas carry a long-stemmed lotus in one hand. (iv) Lotus flower undergoes a series of evolutions, starting with a bud as a basic form of symbolic

[10] In India, Avalokitesvara is a god, but in Indonesia, a goddess (Sedyawati, 2004[interview]).

transformation. Three forms are developed: (1) half-open, (2) fully open, and (3) half-withered flower. Lotus can be a symbol when its flower becomes part of a composite plant whose branches of candelabrum are spread, bearing the figure of a god or other object of worship. Its best examples appeared on the railing pillars of the Buddhist Bharut and the gateways of Sanchi in the second century B.C. in India. On Sanchi, a whole scene of trees, plants, animals, and humans are embellished, giving the panorama a pastoral effect. Hindu temples also had lotus flower; Brahma sitting on a lotus, or purely decorative lotus. Lotus is the most powerful expression in the sacred temple ornamentation.

> The lotus flower symbolises the essential nature of all human beings and all things, in principle unpolluted…of the *samsara* sphere, or by Delusion, and realised by attaining Enlightenment. At the same time it forms a cosmic symbol which unfolds in all directions: the stalk represents the *axis mundi,* and thus the lotus also serves as the throne of the Buddha and the centre of the *mandala* (Seckel 1964).

Hindu-Buddhist Scroll[11]

> It was not until the Hindu period in Java that vegetal ornaments came into the vogue; ever since, they have formed the principal part of Indonesian ornamentation (van der Hoop 1949).

In Hindu-Buddhist ornament, a scroll motif often occurs in the shape of a recalcitrant spiral. It is the rootstock of undulating lotus which produces nodes (Sanskrit, *parvan*) at regular intervals; from each node emerges a leaf-stalk in the shape of a spiral. These spirals undulate alternately to the right and to the left. At the end of each leaf-stalk, there is a leaf which bends in the opposite direction to the stalk. Where the stalk curls clockwise, the leaf undulates the other way. For this reason, Brandes named it the recalcitrant spiral. Various adaptations were introduced to employ the natural plant of lotus scrolls in temples for decoration. Rather stylised, the submerged, horizontally growing part of the plant was made visible to the spectator, and transformed into a decorative motif. Nevertheless, the importance of scrolls lies in its function as symbol. It is the start of life, called *Hiranyagarbha*, 'the Golden Germ'.

Various types of undulating scrolls (Bosch 1960)[12]

Bosch (1960) states that the Indian concept of the origin of life has been dominated by the belief in dual forces in nature: (i) the male element is creative and omnipresent, and (ii) the female element is chaos, an inert mass of primeval waters. When creative breadth enters the waters, 'the Golden Germ', the beginning and origin of all creation, is born. A close look at Borobodur exposes an interesting variant on the lotus rootstock. An animal or a human or other emblem in a circular form replaces the lotus root, and rises upwards, introducing nodes, indicating 'the Golden Germ'. It must be underlined that the idea of 'the Golden Germ' is the most crucial concept in using scrolls on Hindu-Buddhist temple ornamentation. It is also a vital clue to identifying the origins of scrolls in Javanese mosques, either as Hindu-Buddhist or Islamic or both. 'The Golden Germ' in a form of a root or a makara on the bottom of Hindu-Buddhist scrolls totally symbolizes 'life' (Santiko, Sedyawati, Tjandrasasmita, 2004[interview]). Compared to Indian ones[13], scrolls in Borobodur are reminders of the Greco-Buddhist style, showing its influence on the sculptural ornament. They also reflect the lotus scrolls of Bharhut in India in the second century B.C., although a difference lies in the small-size of reliefs being placed in the curves of the scrolls in Bharhut, while there are larger panels separated by vertical recalcitrant spirals in Borobodur.

Candi Mendut has the most beautiful pattern with 30 panels of scrolls, which sprout from a round tuber, sometimes replaced by a fish, a vase, or a tortoise. These decorative panels are in part purely ornamental, and in part filled with semi-divine beings. *Candi* Kalasan has a rich vegetation of flowers and curly leaves, too. Vine scrolls as a variant of lotus emerges from a tuber, and develops sideways. As a tuber is a symbol of plenty, lotus is supposed to sprout from a tuber. The beauty of the temple was praised.

This temple is overcrowded with ornament…but when seeing the good taste with which it has been applied; when realizing that all these decorations are not contrived, being merely enlargements of what the dogma prescribes, when observing how perfectly they harmonize with the whole, then we must admit that this temple had to be built that way and no other in order to be perfect (Bruyn cited by Bosch 1961).

East Javanese scrolls are more stylised and indigenous than Central Javanese ones. *Candi* Djago (1268) has a display of scrolls, a variant of the spiral ornament, on the post and lintels. The vertical movement of the shortened scrolls has lost much of its smoothness. On the flight of steps, a complicated arrangement of curls and scrolls with 1.80 metres height springs from behind the back of a lion. In *candi* Panataran (1197-1454), scrolls are mostly expressed in a form of medallions on the main temple. Diameters are about 35 cm, and all kinds of animals are used as decoration within a circular shape. Their tails continue into a scroll, recalling those of Central Java, but reduced to a single curl which fills the entire medallion. Scrolls represent both beauty and connotation of the sacred life, stretching out horizontally and vertically.

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[11] Different terms have been used in literature to describe scroll. Brandes uses 'spiral', while Kempers 'tendril'. This research chooses 'scroll' as a standard term.

[12] The stem with its side-branches moves forward horizontally with two ways of treatment of a & b. Stems in c & d move vertically upward and present two modes.

[13] Over some surfaces of the Dhamek *stupa* at Sarnath in India, a diaper pattern is luxuriantly and elegantly carved in floral scrolls. The most original and remarkable designs are those forming a wide border around its lower circuit, composed of floral and geometric motifs. This floral, a spiral motif, is typically in Gutpa style, and became the archetype of the border of spiral curves and foliated medallions on the façade of the Qutub Mosque at Delhi many centuries later, during the Muslim regime. It shows a syncretic ornament between the Hindu-Buddhist and Islamic periods in India.


Kalasan (9C), Central Java; Simping (13-14C), East Java

Referring to the vine scrolls, Trilling (2001) argues that they are the prototype of arabesque. In the sixth century B.C., Greek artists adopted stylised plant forms from Egypt and the Near East, and transformed them into the first vine scrolls. By the second century A.D., vine scrolls of recognisable Western origin reached India. During the Gupta period between the late third and sixth centuries, artists elaborated them to a new level of elegance in images of the Buddha. Gradually, they became flame-like, distanced from the original plant-form, and were introduced into Java, Indonesia, during Hinduisation in the fifth century. Trilling's theory raises a question. Zimmer (1960) claims that the sculpture of Borobodur was of Indian origin, probably from Gupta, while Stutterheim (1956) associates Borobodur with the Greco-Buddhist school of Gandhara, accepted by Kempers (1959). The question remains open as to whether the vine scrolls in Borobodur came to Indonesia via India, based on the Greek original, while it also made a journey to the Arab world, becoming the popular arabesque in mosque ornamentation. This supposition can suggest an example of syncretic ornaments beyond time and space. Ornament seems to be a mediator between different cultures.

SUMMARY

Hindu-Buddhist culture came to Indonesia most probably through trade and missionaries in the fifth century. Among different views of Hinduisation, (1) Indonesian's indebtedness to civilised Indian culture, (2) indigenous theory, (3) local genius, and (4) equal value of cultures. Theories of indigenous and local genius seem to be most favoured by Indonesian scholars today. Significant cooperation between Indian artistic tradition and indigenous creative spirits gave birth to a term 'Hindu-Javanese'.

Javanese religion is a blending of mystic animism, Sivaite Hinduism, and Mahayanist Buddhism. This syncretism has been fully displayed in Hindu-Buddhist temples, the abode of gods, to present a replica of the Cosmos Mountain, Meru. Java has two cultures: Central (760-930) and East Java (930-1500). Luxurious and natural ornamentation on Central Javanese temples has an Indian influence, while simple and stylised ornaments in East Java reflect their native and indigenous style. Hindu-Buddhist temples are adorned with many types of motif for beauty and significance. Four motifs (tumpal, kala-makara, lotus bud, scroll) appeared frequently. Tumpal was derived from neolithic and megalithic times in Indonesia, while kala-makara, lotus bud, and scroll were introduced by India. They are integrated side by side in temples as the most significant sacred ornaments.

In conclusion, Hindu-Buddhist culture in Java shows the very influential connection between the prehistoric and Islamic periods, providing an inheritance to Javanese mosque ornamentation.

A few findings can contribute to this research. (1) A syncretic religion of animism and Hindu-Buddhism in Java anticipates a peaceful introduction of Islam. This leads us to inspect four motifs in Javanese mosques. (2) The sacred character of temple ornamentation endows ornaments in Javanese mosques to be sacred, differentiating them from orthodox Islamic ornament which stands for aesthetic beauty. Four motifs have symbolic connotations in the Javanese context. (3) Similarities and dissimilarities in ornamentation between Central and East Java can be helpful to identify the origins of motifs in Javanese mosques, especially in scrolls. Naturalness in ornament was more found in Central Java, compared to stylisation in East Java. The idea of 'the Golden Germ' (the creation of life) leads towards a solution. If a root is found in scrolls, its origin is Hindu-Buddhist.

References in alphabetical order: Atmadi 1988; Bosch 1946/1970/1960/1961; Brown 1956; Coomaraswamy 1972; Dawson and Gillow 1994; Dumarçay 1986; Fontein 1971; Fox 1998; Gupta 1996; Holt 1967; Kempers 1937/1959/1991; Klokke 2000; Koentjaraningrat 1990; Krom 1931; Miksic 1990; Munsterberg 1970; Pepin Press 1998; Prijotomo 1992; Rutherford 1996; Santiko 1995/2004(interview); Seckel 1964; Sedyawati 1990/ 2004(interview); Soekmono 1990; Soemantri 1998; Stutterheim 1931/1956; Subarna 2004(interview); Sudradjat 1991; Suleiman 1976; Prijotomo 2004(interview); Tjahjono 1998; Tjandrasasmita 2004(interview)/2005(interview); Trilling 2001; van der Hoop 1949; Wales 1948/1951; Wagner 1959; Zimmer 1960

CHAPTER IV

Islamic Java (15C-to the Present Day)

This chapter focuses on its Islamic era, related to syncretic Javanese Islam and continuity of pre-Islamic motifs in mosque ornamentation. A difference between Agami Jawi (Javanese Islam) and Agami Islam Santri (Islam of the Religious People) enables to understand the presence of pre-Islamic ornaments and the later appearance of orthodox Islamic ones. The spread of Islam in Java and the origins and characteristics of Javanese mosques inform us of the political background and social circumstances. Moreover, the adoption of existing architectural elements and the sacred mihrab in Java can differentiate from those in the Middle East. Finally, a short account of pre-Islamic and Islamic ornaments displays a whole picture of Javanese mosque ornamentation from the start until now.

SYNCRETIC ISLAM IN JAVANESE MOSQUES

Agami Jawi (Javanese Religion) and Agami Islam Santri (Islam of the Religious People)

> Islam came, in any case, by sea…but of trade… And the trading classes...combined in Java to produce a religious system not quite doctrinal enough to be Middle Eastern and not quite ethereal enough to be South Asian. The overall result is what can properly be called syncretism (Geertz 1971).

Islam, interpreted as 'submission' to the Will of God, was originated in the Arabian Peninsula by the Prophet Muhammad (born c. 570, died 632 A.D.) when he received revelations (the Holy Koran) from God in about 610. His migration (*hijrah*) in 622 from Mecca to Medina is a turning point in establishing the Islamic community (*ummat*), denoting transition from the pagan to the Muslim world. Islam endows life with unity, and the essence of Islam is contained in a single sentence: 'There is no god but God, and Muhammad

is the Prophet of God (*La ilaha illa'Llah Muhammad rausla'llah*)'. This profession and credo (*shahadah*) of absolute monotheism is held to be the ultimate revelation of God's Will, expressing the idea of the unity. Principles of the Islamic faith are Five Pillars: (i) credo, (ii) ritual prayer five times a day in the direction of Mecca (*salat*), (iii) fast (*sawm*) in the tenth month of the lunar year, Ramadan, (iv) alms (*zakat*), giving between 2.5 and 10 percents of one's wealth to the needy, and (v) pilgrimage (*haj*) to Mecca at least once in one's life. Shariah, the Islamic law, clarifies the principles of Islam.

In Java, although Islam is the official creed, and has contributed to Javanese society as a means of enhancing the unity in culture, the basic patterns of ancestral and mythical beliefs provided a common background for religious experience. As a result, two types of Islamic religious manifestation exist. One, Agami Jawi (Javanese Religion), represents an extensive complex of mystically inclined Hindu-Buddhist beliefs and concepts, integrated within an Islamic frame of reference. The other, the Agami Islam Santri, interpreted as 'Islam of the Religious People', is a variant of Javanese Islam, and is much closer to the formal dogma of Islam.

Toward the middle of the 19th century, the isolation of Indonesian Islam from its Middle Eastern source started to break down. From Hadhramaut of the Arabian Peninsula, more traders arrived in Indonesia, transmitting their orthodoxy to local people. In addition, the growth of sea travel allowed Indonesian Muslims to go on the pilgrimage to Mecca. After returning from Mecca, religious leaders at pesantren, a boarding school for Islamic teachings, stressed that Islam was a different religion from polytheistic mysticism, and set up a clear orthodox body of Islamic teachings. Thus the Islamic reform movements of Egypt and India produced a great impact on open-minded Indonesian Muslims, encouraging them to embrace Islam as a living faith. With the foundation of Muhammadijah in 1912, a new movement emphasizing the need of pure Islam in Indonesia, Agami Islam Santri, spread in the country, founding ummat, a true Islamic congregation.

Islam in Indonesia had been unfenced by many local customs (adat) and ideas. Learned Indonesian Muslims now consequently observed all around them a widespread need for reform; their feelings were strengthened by Dutch domination, which they felt had been made possible by the decline of (orthodox) Islam (Ricklefs 1993). However, this specific characteristic of interplay of customs and ideas could be interpreted as a universal tolerance of different races, colours, and creeds. Syncretism was clearly practised by Sultan Agung[14] of Mataram who absorbed Islamic elements into Hindu-Javanese life.

Views of the nature of Javanese syncretism were also expressed by Indonesian scholars: 'Indonesian Islam did not precisely accept Islam 100%. It was a selection' (Tjandrasasmita 2004interview). 'Hindu-Javanese Islam is a somewhat relaxed Islam, and Islamic orthodoxy started after Dutch colonisation of Java' (Pirous 2004interview). A Javanese attitude gives a priority to Javanese identity, then to Islam as a religion (Prijotomo 2004interview).

The Arrival and Spread of Islam[15] in Java

The spread of Islam may have been the result of the presence in Java of Muslim foreigners belonging to various social classes: on the one hand substantial businessmen and their dependants in the harbour towns, on the other adventurous wanderers with a zeal for the propagation of the faith and an eye to concomitant worldly profit. It seems certain that the two groups were interrelated from the beginning (Pigeaud and de Graff 1976).

Over Indonesian history, the spread of Islam is one of the most significant processes, and is the most obscure. Two developments probably took place in various areas at different times: (i) indigenous Indonesians who came into contact with Islam converted of their own volition, (ii) Muslim traders - Arabs, Persians, Indians, and Chinese – settled down, bringing their religion with them and associated practices. It is most likely that the main influence of Islam spread across the archipelago via trade routes, and its principal introduction into Java was around 1450 from Gujarat[16] in northern India.

According to Islamic sources, one of the earliest gravestones (1419) found at Gresik on the coast of Java (*pasisir*) indicates that Malik Ibrahim, born in Persia, journeyed to Java as Muslim trader. Gravestones in Tralaja in East Java prove the presence of Javanese Muslims in the Hindu Majapahit kingdom as early as 1376. Another tombstone of 1448 at Trawulan marks the burial of a Muslim queen of Majapahit from Champa (now Vietnam). Moreover, Tomé Pires, Portuguese apothecary, spent time in Malacca from 1512 to 1515, visiting Java and Sumatra, and his book *Suma Oriental* tells of the penetration of Islam into Indonesia. What arrived in Indonesia was 'secularised' Islam, adapted into the South Asian trading cities, because the attraction of Islam for traders under the caste system and the rule of the Hindu kingdom was in its ideology of equality as a member of the Islamic community. Indonesian Islam was cut off from its centre of orthodoxy at Mecca.

The spread of Islam from the 13th to 16th centuries in Indonesia

According to Tjandrasasmita (1985), Islamisation was gradually carried through many channels: (i) trade among Muslim traders with local communities, (ii) marriages among Muslims with local girls, especially from the noble families, (iii) preaching on Sufism, (iv)

[14] Under Sultan Agung, decorative arts rejuvenated. Agung sought to strengthen his authority in the state and to endow his monarchy great influence and prestige. The motifs used during the kingdom are Hindu-Javanese prototypes. Islam had little impact on Javanese philosophy, but changed some basic social customs, such as circumcision and burial, replacing Hindu-Buddhist cremation.

[15] The arrival of Islam in Indonesia is still disputed. The first assumption is that Islam was directly originated from Mecca or Arabia since the seventh century, based on the Chinese source of *Hsin-T'ang Shu*. A Ta-shih Muslim community which settled at the coast of Sumatra had a plan to attack the Ho-ling kingdom under the reign of Queen Sima in Java in 674 (Groenveldt 1960). The other is that Sufi Islam came to Indonesia in the 13th century from Iraq, Persia, and India when Baghdad was attacked by the Mongols under Hulaghu in 1258, thus the old route running the Persian Gulf via Baghdad to the ports of Syria and Asia Minor was replaced by the new one from Aden along the Red Sea to Alexandria, Egypt. This theory is sustained by finding a gravestone of Sultan Malik as-Salih (1297) in Gampong Samudra (Moquette 1913).

[16] By the beginning of the 16th century, Gujarati merchants had trading posts in all the important commercial centres in South East Asia.

pesantren [17] and (v) art, architecture, decoration, performance, literature, etc., in order to create tolerance, syncretism, understanding, and adaptation of Islam for not as yet converted people.

Particularly, in the cultural heartland of Central and East Java, its medium was by *walis* (saints) of the Sufi (mystical teachers) brotherhoods, nine in number (*wali songo*). Many of them were of non-Javanese origin and were often connected with particular port-towns along the coastal area. Sufis were travelling mystics who propagated charismatic traditions of ecstasy, asceticism, dance, and poetry, and such teachings could accord with the existing political and cultural climate of the Hindu-Javanese courts without causing undue conflict. Their preaching was often done at the Agung Demak (1479) through sociological, psychological and cultural approach, according to the principal concept of Islam with peace and order without force. For instance, Yunardi (2004[interview]) says that in Cirebon of Central Java, *walis* attempted to make Islam as simple as possible, so that people could embrace this new religion easily. They said that mosques were oriented to the west[18], not to be too complicated and detailed for simple people, whereas in Arab countries, orientation was specifically worked out to face the Holy Kaa'ba in Mecca. Thus many Cirebon mosques do not face Mecca. During Islamisation, polytheism, the deification of princes, and the caste system were rejected, except for the ancestor cult, a feature of mystic animism, which was both tolerated and incorporated into Islamic ritual, such as visiting graveyards. The ban on representing living figures by the *hadith* was not strictly observed. Rather, the stylised *wayang* (shadow puppet)[19] of Hindu-Buddhist tradition was used as a means of spreading Islam because of its magic power, replaced by Islamic figures and phrases. Sunan Kalijaga, one of *wali songo* is considered to a *wayang* creator.

Among several channels, Sufism is the most distinctive in converting Hindu-Javanese people, because Islam was already imbued with oriental mysticism, and had lost much of its original rigid orthodoxy on its spread from the Middle East into India. Javanese, traditionally inclined to mysticism, discovered the same level of spiritual and material culture with this new religion. In order to disseminate Islamic teachings, existing architecture and decorative art was strongly visualised. Roofs of old mosques and palaces resemble the Hindu Cosmos Mountain, Meru, while mihrabs, minbars, and tombstones are decorated with kala-makaras. The basic styles and characteristics of Javanese mosques were set up, differing from those built in other Islamic countries: a square ground plan and tiered-roofs, being their most common characteristics.

Fanani (2006[interview]) argues that the domestication of Islam in Java occurred in five ways by (i) changing foreign ulamas (religious teachers), such as Malik Ibrahim, to local *wali songo* who had never visited Mecca, (ii) replacing the Islamic centre from the Middle East to the Malay peninsula, (iii) domesticating books of ideas, so that Hindu epics became Islamic stories, (iv) creating a *Jawi* script which is a combination of Arabic scripts and local language, and (v) adopting existing art and architecture, called 'Malay Islamic Javanese variant'. Islam was thus able to spread in Java without causing undue political and cultural conflicts because of the spirit of Islam and the tolerance of the people. This peaceful Islamisation reached a turning point in the early 16th century on the foundation of the new Islamic kingdom of Demak. From then on, the religion became an indissoluble part into the traditional socio-cultural structure.

Origins of Javanese Mosques

Sudradjat (1991) observes debates on the origin of Javanese mosque architecture which started in the late 1920s and continued until 1980. The first idea was 'cultural continuity', which argues that the pre-Islamic architectural tradition was the source of a mosque building. The second one, adopted by a few radical scholars, was that of 'cultural influence' on the mosque, particularly from Islamic India and China. It was Stutterheim (1927) who took the initiative, maintaining that the Javanese mosque was a modification of the Balinese cock-fighting court (*wantilan*), and that Muslims used this prototype, despite its profane character. Rouffaer (1932) proposed to this. The multi-tiered roof mosque was absolutely Hindu in its origin, modulated afterwards by Malay Muslims. While both saw the mosque at the level of physical form, Hidding (1930) searched for a spiritual symbolism in mosques, calling attention to the significance of the Cosmos Mountain which played an important part in animistic and Hindu-Buddhist societies. The tiered-roof form of the mosque was thought to represent the Cosmos Mountain, Meru.

Of this, Tjandrasasmita (2005[interview]) argues of three tiered-roof form as representing an Islamic idea to approach Allah through three ways (Insan-faith, Ihsan-charity, Islam-submission)[20]. Noe'man and Fanani (2005[interview]) comment this form to be the most suitable for tropical weather against heavy rain and for ventilation. In 1947, Pijper carried out an organised analysis of the characteristic elements of Javanese mosque. The ancient mosque has (i) square ground plan, (ii) support on a massive elevated foundation, (iii) pointed roof with two to five stories, narrowing upward, (iv) extension for mihrab, (v) serambi (veranda), and (vi) open space enclosed by a wall and a front gate. Its origin was not a foreign form introduced by Muslim missionaries, but was a pre-Islamic structure, adapted to the demands for the Muslim worship. Only serambi was added later, taken from Javanese houses.

Pijper' theory was opposed by de Graaf (1947-8), insisting on the origin of the mosque in Sumatra where Islamic influence was first seen. Then he changed his mind. Islam brought itself through trade routes. Thus the Javanese mosque building was not pre-Islamic, but was a tradition of Indian Islam, perhaps from Gujarat or Malabar or Kashmir. In 1966, Wirjosuparto returned the origin of the mosque to pre-Islamic building typologies, giving an example of *pendopo*, an extension in a building for meetings and performances. There was also an effort by Slametmuljana (1976) to suggest that its origin was Chinese pagoda, because of Chinese Muslims' contribution to the conversion of Javanese to Islam. Whatever the origin was, these debates changed from a simple idea of

[17] The *mandala* education was converted into pesantren. Most building forms and elements were unchanged. By giving a new Islamic meaning to the ancient symbols, Sufis achieved the smooth contact with believers.

[18] From Indonesia, the Arab area which Islam started directs toward the west.

[19] Javanese believe that the soul of ancestors as shadows could be invoked by a sacred ritual. Hindu-Buddhist Mahabharata and Ramayana stories were accommodated into *wayang,* which Islam adopted. Due to the flexible stories and foresight of *wali songo*, Islam was concretized to the less modified but still predominant Hindu mythology. *Wayang* became a popular cultural value and ethics.

[20] (i) The lowest roof represents Shariah, Islamic Law, (ii) the second: Tariqah, a way to get Allah's blessing, (iii) the third: Hakikah – the spirit of a Muslim's good deed, and (iv) mustaka at the top: Marifah to know Allah (Suryo, "Traditional Javanese Mosque", Romantika Arkeologia).

Javanese mosque as 'cultural continuity' and a narrow concern for the physical form of the mosque building into a more comprehensive incorporation of spiritual and symbolic aspects of Islam in the mosque building.

Characteristics of Mosques in Java

A mosque is a place of prayer, the supreme act of submission to God. The Holy Koran defines the mosque as the place where Muslims worship, and an expression of their belief in the unity of God was achieved through prayer: 'And the mosques are for Allah (alone): so invoke not anyone along with Allah' (Koran, surah 72:18). Literally, the Arabic word 'masjid' (mosque) means the place of prostration. In the Islamic world, three types in the urban context can be described: (i) masjid al-jami (group/daily mosque for the neighbourhood), (ii) masjid al-jumah (mosque for Friday prayers with a sermon), and (iii) mussalla (ceremonial prayer place for an entire city). A mosque can have several purposes, such as praying, a democratic and political institution for religion, law, and government, and an educational centre for teaching the Koran. The first mosque of the Prophet in Medina was simply an enclosure of mud brick walls without ornamentation, but this early structure is believed to establish the basic space needs of a mosque for the Muslim community.

Although mosques have been built, depending upon different cultural traditions around the world, their fundamental elements remained the same: mihrab (prayer niche), minbar (sermon pulpit), minaret (tower)[21], place for ablution, women's prayer area, and sometimes maksura (prayer place for ruler). As the introduction of the mosque and the idea of a communal prayer were new in

Indonesia, and the Koran contains few regulations regarding the form of a mosque, Javanese architects were free to interpret its basic requirement in accord with an individual experience for mediation in temples. It is known that pre-Islamic traditions underline the form and setting of the site, its buildings and images in sacred places. Consequently, mystical Sufis borrowed them, based on their belief of mosques to be sacred in space and structure, creating a combination of indigenous and Islamic ideas and forms in their mosques. The common heritage in many mosques reflects the close political relationship between Muslim rulers in different regions in Java. Shared features are the tripartite division (base, main body, superstructure), a centralised plan, multi-tiered roof, mutsaka (crown), an outer colonnade, serambi, a walled courtyard with two gateways, drum, graveyard, and etc.

Prijotomo (2004[interview]) relates Javanese mosques adopted the existing forms, in order to attract non-Muslims to enter the building and to receive Islamic teachings. Architecture was used as a way of introducing non-Muslim Javanese to Islam. For Isnaeni (2004[interview]), 'the character of the Javanese mosque is Javanese culture. Muslims still consider Hindu-Buddhist ornament as a mystic way to approach to God'. Isnaeni in his PhD thesis, *The Javanese Mosque, a Regional Interpretation of Form and Mystical Concepts* (1960), discusses continuity of pre-Islamic mysticism to Javanese mosque elements. For example, the multi-tiered roof symbolises a link between God and Muslims, based on Sufis' view. A mustaka, a crown of red lotus at its apex, is a container of the essence of divine unity in Hinduism, but in Islam, it embodies the ultimate goal of the mystical path into God. Soko guru, four master columns, signifies the spiritual context: the verticality and centralisation express an ultimate unity between God and his believers which was continued from the Hindu belief in the identity of self and the universal soul.

Water has been significant in spiritual rituals to purify a person in Hindu-Buddhism and Islam. Islam requires ablution before prayer. Located in the front of the mosque, water channel represents new creatures that will fill the void of the universe with life. The development of pre-Islamic feature in Javanese mosques clearly indicates that Islam in Java did not introduce new forms of religious architecture. It is apparent the teaching itself was considered to be more important than physical characteristic of the mosque. Islam teaches that Allah has created this world as a mosque. In fact, commonness appeared in Javanese mosques during the researcher's field work, hinting strong continuity of pre-Islamic architectural, decorative, and mystical elements. The majority have (i) soko guru, mihrab, minbar in a prayer hall, (ii) two kinds of gateway, (iii) mustaka on a multi-tiered roof, occasionally together with the crescent of Islam, (iv) drum, (v) partition between men and women prayers, and (vi) a few places for ablution.

The Sacred Mihrab

It has been said that mystical Sufis adopted pre-Islamic art traditions to create Javanese mosques with a sacred character. Among many elements in the mosque, a mihrab, a prayer niche, has been the most significant, in terms of aesthetic and symbolic functions. Mihrab is an indention at the point where the qibla axis meets the far wall of the mosque, taking the shape of an arch. Being both the visual and liturgical climax of the mosque where an imam (a religious leader) leads the congregation in prayer, mihrab is usually decorated with lavish ornamentation. The mosque of the Prophet in Medina and the earliest mosques in the Umayyad dynasty had no mihrabs.

Opinions on the origin of mihrab are various. It had a forerunner in the niches of Byzantine architecture. Two origins are possible: (i) the prototype of the Torah-niche in the synagogue, where Jews kept the Scriptures, and (ii) the apse of Christian churches in early Coptic chapels in Egypt. This was combined with the triumphal arch over the tabernacle to show the symbolic presence of God. Other theory suggests its origin as the place for a statue in the Greco-Roman temple, or the apse in a church. The word 'mihrab' reappears several times in the Holy Koran, and had many meanings before becoming attached primarily to a niche in the back of the mosque. Basically, it is a place of honour, but is difficult to know exactly what was meant in the context of the passage in the Koran (surah 34:13). King Solomon, patron of works of art, ordered the molten brass, and jinns (spirits) manufactured for him 'maharib' (plural of mihrab, statues, cooking vessels, and tableware).

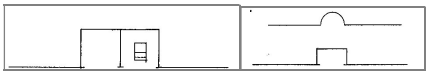
> They worked for him as he desired, high rooms, images, basins as large as reservoirs, and cauldrons fixed. 'Work you, O family of Dawud, with thanks!' But few of My slaves are grateful (surah 34:13).

The word 'mihrab' was also used in relation to the divine character, in a paper of *Les mihrab et leurs ornementations décoratives (the mihrabs and their decorative ornamentations)* at the international conference (1980) on mihrabs, held in Paris.

[21] In Java, a drum is usually used for calling prayer, instead of a minaret.

Then he came out to his people from Al-Mihrab and he told them by signs to glorify Allah's Praises in the morning and in the afternoon (surah 19:11).

A concave mihrab was built in 707-9 A.D., when Al Walid of the Umayyad brought Coptic masons to Medina to rebuild the Prophet's mosque. A devotional Coptic niche changed into a directional Islamic niche. Since then, mihrab became the central feature of all sacred art and architecture in Islam. Unlike an altar, mihrab is not sacred itself, but indicates the direction of prayer, which is sacred. For this reason, it is accorded extraordinary respect, and is the most ornate feature of the mosque with three types of Islamic decorative motif: vegetal, geometric, and epigraphic. The mihrab is the focus of religious symbolism in mosque architecture. Technically and theoretically, it could be a visual identification of the qibla wall. But popular belief shows it as a shrine for divine illumination and as the gate to Paradise (Hillenbrand 1994).



Different types of mihrab (Subarna 1982-3)

In the Middle East, mihrabs are often semi-circular, while in Spain and Morocco they are polygonal, often accentuated by a hanging dome over or in front of them. From the early eighth century, mihrab has either a single or, less frequently, double or multiple niches. In some places, Shiite mosques have double mihrabs.

Visibility, a principle in Islamic ornamentation, is generally focussed on the portal, mihrab, and maksura. And Arabs 'almost' always insisted on adorning the columns of mihrab with capitals in a style in conformity with their own ornamentation. Ways of enhancing mihrab varied, depending upon periods and places, and even non-ornamentation on it can make a visible distinction from its surrounding areas. In adorning Javanese mihrabs, the same idea seems to be applied. However, Mansyur Sawah Lio (2003interview) stresses that mihrabs in Jakarta do not have much ornamentation, for fear of disturbing prayers' concentration on God. By contrast, Prijotomo (2004interview) says that a beautiful mihrab is a strategy for encouraging non-Muslims to embrace Islam.

Characteristically in Java, the sacredness of mihrab was stressed. A number of great mosques have a chronogram (*candrasengkala*) within or above the mihrab. Most mihrabs have a semi-circular vault and ornamentation, often with kala-makara. A kala head at the top in the centre with a symmetrical and scroll-like body flows down on either side, and meets makara at each end. Sometimes floral motifs replace a visible kala-makara. For instance, the mihrab in Agung Kasepuhan of Cirebon has elaborate decorations; a lotus flower suspended within the vault of the mihrab, and surya (sun), symbol of the Hindu Majapahit, represent power and supremacy. Isnaeni (1996) observes that as central motifs, the lotus and the sun signify basic aspects of life - 'embodied immortal and religious duties (lotus flower), and the perfect attainment of spiritual insights towards victory in the after-life (sun)'. Islam emphasises Muslim duty in social and spiritual relationships, and without performing their duties, Muslim rights are not respected. In this context, the relationship between Islamic principles and the images of the lotus flower and the sun on the mihrab becomes clearer. Many mihrabs in Java were rebuilt during renovations, using new glazed ceramic tiles on the walls. Mihrab can have two or three arches, depending upon its size, but a traditional mosque has usually one simple mihrab. Compared with luxurious and elaborate mihrabs in other parts of the Islamic world, the simple design of Javanese mihrabs could be considered a characteristic. In several modern mosques, it has even been omitted, like in Pondok Indah, 1998 of Jakarta, the capital of Indonesia.

THREE ISLAMIC PERIODS

Islamic Java can be divided into three distinct periods[22]: (i) continuation of pre-Islamic influence in the transitory period (15C-1619), (ii) European and Islamic influences during Dutch colonisation of Java (1619-1945), and (iii) a pure Islamic movement in the contemporary period (1945-to the present), caused by the political and religious movements, although other invasions - Chinese, Portuguese, British, and Japanese brought lesser changes in the island.

Indonesian scholars, such as Tjandrasasmita, Anbary, and Sedyawati (2004-6interview), relate that Islamic art and architecture were brought by traders and ulamas (religious teachers), not by cultural people around the 12th century. As foreign missionaries did not possess skills on making Islamic ornaments, instead, they focused on explaining principles of the religion to local people. A poor execution of calligraphy on the earlier gravestones is probably an example of the limited skills that were transferred. This tradition spread further, and local genius started to create new motifs after modification of existing ones with Islamic context. The first syncretic ornaments are named as 'local Islamic or Malay Islamic ornaments' which differ from the orthodox Islamic ones. Among three genres, arabesque and geometry were somehow absorbed into Hindu-Buddhist scrolls and megalithic geometry, while Arabic calligraphy kept its position. In Java, it was combined with the Malay language, inventing a local script, '*Jawi*'.

Around the 18th century during Dutch colonisation, Javanese Muslims were much more able to make the journey to Mecca as pilgrims and started to learn about orthodox Islamic ornament, finding them more beautiful than what they had at home. Eventually, they brought them home, and started adapting them into local ornamentation and cultural context, thus the creation of the second syncretism occurred. Following Indonesian independence in 1945, any Muslim could travel everywhere and learn pan-Islamic ornament, repeating the same process, and inventing the third syncretism. It can be said that each period had its Malay Islamic ornament (Fanani 2006interview).

Marwoto (2006interview) agrees with Fanani in part, but stresses the Dutch contribution in disseminating Islamic ornament in the island: 'We have only temples. We don't know how to make mosques. The orthodox Islamic dome arrived here through the Dutch who had knowledge of them. They taught us, since we had no direct contact with the Arab world'. Fanani accepts the Dutch contribution that Muslims' visits to Mecca had more influence on Javanese mosques. Tjandrasasmita (2006interview) gives another reason:

[22] Tjandrasasmita (2005interview), but for Fanani, three divisions can be: stage 1 (1000-1650), stage 2 (1650-1900), stage 3 (1900-2000) in a view of the Islamic movement in Java, but this research standardises the term 'transitory, Dutch colonisation, and contemporary'.

If Muslim missionaries who had brought their Islamic architecture and ornament wanted to introduce them here, at first, they could not be accepted, because we had already our own architecture, such as a stepped roof, and ornaments, based on geographical and ecological experiences which should be continued. Whatever the case was, the assimilation of Islamic ornaments into the local culture was caused by the flexibility and tolerance of both Islam and Javanese people. And different views imply the lack of a full research on Islamic culture.

The Transitory Period (15C-1619)[23]

The Islamic transitory period starts from the foundation of the earliest Islamic kingdom of Demak around 1479 after the conquest over Hindu Majapahit kingdom, and ends with the beginning of Dutch colonisation of Java in 1619. During this time, remnants of Hindu-Buddhist influence were very visible in Javanese mosques. Three kingdoms arose in sequence: Demak on the coast, Pajang and Mataram in the inland of Central Java. According to Javanese chronicles and oral traditions, the main aim for struggling Islam from the coastal Demak to the inland Mataram was to gain legitimacy over Majapahit. At this time, mosques served both as places for prayer and for showing Islamic power over Hindu-Buddhism. After the foundation of Demak, Muslims strove to declare Islamic power dominant, and Islam reached its supremacy during the rule of Sultan Agung (r.1613-45) of Mataram. Although Mataram and its spiritual sovereignty existed until Indonesian independence in 1945, the death of Sultan Agung in 1646 was a starting point of a decline in the political power of Javanese rulers. During the Islamisation, a few Islamic centres were founded along with the coast (*pasisir)* in Central and West Java, such as Kudus, Jepara, Cirebon, Banten, Gresik, and Surabaya, keeping a close contact with Demak and sharing the pre-Islamic syncretic culture.

Agung Demak (1479), Central Java

The tradition says that the oldest mosques were likely re-used buildings within palaces or small prayer halls in villages. They modelled on existing building types used for a similar sacral purpose. The four main columns (soko guru) support the uppermost roof, separating it from the double-layered outer roof, in order to admit light and to allow ventilation of the prayer hall. The earliest large mosques are venerated as the oldest of their kind in Southeast Asia, and the first mosque is said to be Agung Demak (1479). Despite its renovation and reconstruction in the 19th and 20th centuries, the present form of this mosque still resembles the original one, becoming a standard for the mosque building later. The only mosque tower is located in a pilgrimage town of Kudus (Arabic: *al-Quds*), whose mosque has the tomb of the *wali* Sunan Kudus. The structure of the tower closely resembles that of Hindu Majapahit, and recalls the *kul-kul* towers of Balinese villages. The tower contains a cylindrical drum to be beaten for calling prayer as a common tradition.

A comparison of architectural forms in the coastal and inland mosques reveals that, in the inland regions, mosques had a square prayer hall and a water channel bordering the serambi, while in the coastal area, half of the mosques had a square hall and a stylised Hindu-Buddhist kala-makara on the mihrab. However, the mosque complex reflects the style of Hindu-Buddhist temples in East Java, surrounded by walls and located in the middle of the site with a prayer hall, soko guru, and tiered roof. The shift of political power from the coastal to inland kingdoms brought a movement of Islam and its culture from a trading to an agrarian basis, but the basic elements of the mosque still remained.

The Dutch Colonisation Era (1619-1945)

During the last decades of the 16th century, English and Dutch ships began to explore Southeast Asia. To strengthen international trade, a European administration was set in place to regulate production in response to the demands of their home markets. Although the official start of Dutch colonisation of Java was on 30 May in 1619 when Jayakarta fell by J. P. Coen, the Dutch had already influenced the courts of Central Java. Traders, such as Acehnese, Javanese, Arab, and Indian, from any part of the Muslim world settled down harbours in Sumatra, Banten, Batavia[24] and Surabaya in Java, forming communities with mosques as their life focus. Rather small in scale, the previous traditional Hindu-Buddhist style was still echoed in mosques. Agung Palembang (Sumatra), Kebun Jeruk, Angke, and Jami (Jakarta) have a similar profile in a traditional pyramidal roof and soko guru. A wide range of ornaments of Middle Eastern and Indian, sometimes of European and Chinese or even regional inspiration, were applied to the doors and windows and details of masonry walls.


Hidayatullah (1750), West Java

The collapse of the Dutch East Indian Company at the end of the 18th century and a short British administration for seven years from 1811 provided an opportunity for the Dutch government to control Java from 1818. It was this decade that the first Mogul dome of Baiturrachman (1881) was built by the Dutch in Aceh, combined with the local serambi, and was further introduced in Javanese mosques. Towards the end of the 19th century, however, European liberal movements against injustices in the colonies brought interest in their indigenous culture and religious life, neglected by the ruling government. As a result, in the early 20th century, existing Javanese mosques began renovations by the support of the Dutch, and large new mosques, such as those in Bandung and Semarang, were sited on the public squares. A departure from local tradition was seen in the addition of a freestanding tower, and an iron tower surmounted by an Indian style dome was built alongside the old mosque in Demak.

[23] The first Islamic Demak kingdom was founded around 1479, but as mosques might have already existed, the transitory period starts from the 15th century.

[24] Jakarta has many other names historically: Sunda Kelapa, Jayakarta, and Batavia.

The Contemporary Period (1945-to the Present Day)

From the end of the 19th century, new directions in theological education and social reform throughout the Islamic Arab world introduced alternative architectural styles which emanated from Cairo and Arabia. They were somehow accepted in Java, but were resisted by other nationalistic sections of the *ummat*. After Independence in 1945, this trend was reversed in a movement towards solidarity among Muslim nations and the development of a combination of Javanese and international styles in variety, in the context of modern technology and characteristic design. An extensive 'Islamic' building program was initiated by President Sukarno and continued by President Soeharto of Indonesia during the early 1980s. Sukarno wanted to build the National Mosque, Masjid Istiqlal, which would accommodate 20,000 at prayer inside and 100,000 in its courtyards. Interestingly, in this case Javanese traditions were totally disregarded by his obsession with the mosque to rival all others in the Islamic world. Instead, the centralized domed space of the 14th century Ottoman architecture was taken as a model. During the period of Soeharto, a traditional but a strictly functional design prevailed in more than 400 mosque buildings throughout the country. The government-sponsored foundation *Yayasan Amal Bakti Muslim Pancasila* offered a standard design to be used for a mosque building in less advantaged areas: a basic plan with a three-tiered roof, available in three sizes (15, 17 or 19 m^2). Although its model was old Agung Demak, the absence of soko guru in a new mosque design denies the metaphorical role of linking the believers to Allah.

> A dome-like structure would appear to be discouraged by this official foundation. Perhaps this is a way to resist change and to retain cultural identity amidst the challenge of other images for a mosque such as that of a dome or a flat roof (Saliya 1990).

Al Akbar Surabaya (1995-2000), East Java

Generally, Javanese Muslims associate mosques with columns as a strong element of design. As the finest example, Soko Tunggal (1973) at Taman Sari in Yogyakarta took over the centralizing plan from its predecessor, Agung Yogyakarta (1773) built by sultan Hamengkubuwono I of the glorious Mataram kingdom. In the prayer hall, a single column reminds the mythological axis of the cosmos, or 'spindle of the universe', by supporting the roof. The central column and its curving brackets are decorated to represent the stem and branches of the 'celestial tree' or the lotus. The focal central column indicates the unity of God and signifies the Sufi principle of the union between Muslims and God.

The expansion of population has brought about the need for many larger mosque complexes in recent years, and designs from the Middle East, India, and North Africa have taken over local traditions. The absence of mihrab was seen at Pondok Indah (1998) in Jakarta. The less popular flat-roof was adopted at Salman (1974) in Bandung following the Western functionalism. Yet young designers are also searching for a more authentic architecture responsive to the local environment, such as Adhi Moersid who built Said Naum (1977). Moreover, details on several mosques still reflect their predecessors in the use of material or structural method, to continue their cultural heritage. Consequently, in this cosmospolitan atmosphere, uncertainties arise for local architects or ulamas who are endeavouring to advise on the appropriate Islamic forms.

> …in recent years planners of complexes to accommodate the faithful at prayer in this eastern extremity of Muslim Asia have begun to examine their rich heritage. Inevitably they will continue to work through their great tradition of mosque-building and make their architecture resonate with the grace and power of its expressive forms (O'Neill 1993).

In short, in the transitory period, significant continuity of pre-Islamic tradition was shown, while European and Islamic influences on Javanese mosques took place gradually during Dutch colonisation. Toward the contemporary era, pan-Islamic motifs replaced those existing elements. However, a tendency to continue the traditional cultural heritage is still seen, creating a characteristic regional style in both architecture and ornamentation.

JAVANESE MOSQUE ORNAMENTATION

Remnants of Pre-Islamic Ornaments

> Although the Mataram dynasty was Muslim, it patterned itself after the great Hindu-Javanese empires of previous centuries… Clearly, identification with the prestigious Majapahit royal house was of greater importance than religious solidarity with the coastal powers (Raffles 181771982).

Krom (1923) was among the first scholars to discuss of the Islamisation process in Java. Illustrating the minaret of Kudus as an adaptation of an old form, Islam in Java was not hostile to established architectural traditions, owing to gradual Javanese conversion to Islam, rather than revolution. Moreover, significant modification was limited to the principles of decoration, in consequence of the Islamic prohibition on depicting living beings. This encouraged two leading Indonesian archaeologists, Tjandrasasmita and Ambary, to develop this idea further. Tjandrasasmita (1984) attempted to prove that Islam took over local conditions and, to a certain extent, contributed to the preservation of indigenous cultural values and traditions. This could be due to the fact that the Islamic propagators and the Indonesian themselves have always known tolerance, which is not only obvious in architecture and decorative art, but is also in other aspects of their culture.

For instance, Astana Mantingan (1559) in Central Java and Sendang Duwur (1561) in East Java exhibit a blend of Hindu-Javanese and Islamic cultural elements, indicating a close relationship between Hindu Majapahit and Islamic cities on the coast. He stressed the importance of ornaments in integrating Islam into Javanese culture, encouraging artists to adjust gradually to new realities, instead of putting any imposition on them. This theory was shared by Ambary (1983), asserting that Indonesian Islamic art was basically a continuation of indigenous art from the prehistoric period, with the full absorption of Islamic calligraphy as a new element. Others, such as dome and minaret, could not be integrated, and remained as foreign objects. In his book, *Finding the*

Civilization of Islam and Archaeology in Indonesia (1998), Ambary relates that Islamic art in Java tends to be non-iconoclastic, particularly in places of worship, and does not separate architecture and ornament; rather, they are integrated.

He divides Javanese arts between the pre-Islamic and Islamic periods: (i) Hindu-Buddhist art is characteristic of its political and cultural background, while Islamic art is not. (ii) Research into art of the Islamic period has not been intensive and continual, compared to that into the Hindu-Buddhist period. (iii) Islamic art has lost its continuity in certain things. During the Hindu-Buddhist period, art was centred, using professional artists in the palace, but in the Islamic period, some cultural centres started to deviate from the original art forms, because of the foundation of small kingdoms, different interpretations of art, and diverse tastes of artists who created local art. As Islamic ornaments have pre-Islamic traditions, the Hindu Majapahit art was to be completed during the Islamic period by additional patterns of Islamic and Chinese ones.

Syncretic motifs in Astana Mantingan and Sendang Duwur were further explained by Fontein (1990). In Astana Mantingan, a large number of sculpted foliated stone medallions[25] are combined with stylised animals - elephant, tiger, monkey, and crab -, demonstrating a clever and artistic way of replacing living figures, instead of rejecting them in orthodox Islam. A combination of kala head and deer on a doorway at the winged gate of Sendang Duwur indicates the artist's indebtedness to his Hindu-Buddhist predecessor: 'The gate has two large wings that make it look a garuda flapping its wings about to embark upon his adventurous flight in search of the elixir of immortality'.

Prijotomo (2004[interview]) underlines a combination of pre-Islamic and Islamic ideas and forms in floral decoration at Sendang Duwur: 'It is not a real floral, but a modified one, seen as floral. This ambiguity is a Javanese characteristic. Javanese mosques use Hindu-Buddhist motifs in an Islamic way. The form is Hindu, but the idea is Islamic, or vice versa. As Islam allows liberty, everybody can make their own style, but keeping continuity'. Tjandrasasmita (1984) maintains that Islam penetrated slowly into Indonesian minds without force, due to its principal concept. Sendang Duwur reflects the process of acculturation with tolerance, syncretism, local genius, friendship of the Javanese in the transitory period. It is the earliest product of the Islamic Indonesian art.

Marwoto in her PhD thesis, *Decoration of Mosques in Northern Java from the 15th to 17th Centuries* (2003), investigates ornamental motifs in mosques and on chungkups (graves of important people) on the coastline of Java where the early Islam began. Four different types of Hindu-Buddhist or Islamic motif were found: (1) natural motif: mountain, cloud, coral, sun, (2) fauna: bird, lion, goat, horse, deer, monkey, snake, bugs, dog, tiger, fish, elephant, bull, kala-makara, (3) floral: flower, leaf, tree, heart-shape, (4) construction element: one or four or five masts, non-winged or winged gate, (5) geometric interlace, (6) Arabic calligraphy, (7) cross, (8) pool, (9) *wayang*, and (10) frame.

Among the pre-Islamic motifs, kala-makaras and floral seemed to continue mostly. Especially, lotus was much used in both Hindu-Buddhist and Islamic periods, filling the panels in a storytelling relief or without it. Islamic poets describe flower as a book, where one can study the knowledge about God. Flowers with different numbers of petals in a combination of birds are present on graves, and their coexistence can be considered as the characteristic of Islamic decorative art in Java, despite a ban on living figures by the *hadith*. Motifs which were brought with Islam are heart-shaped leaf, geometric interlace, calligraphy, and the winged gate.

A wish to present a living creature, especially animals, was kept on, even though sometimes the form is blurred. An Islamic characteristic on the northern Javanese coast is the tendency to take an existing shape, and transform it into a style which is considered to be more Islamic.

Orthodox Islamic Ornaments by Local Genius

Islamic stylised design contains the Islamic spirit (Subarna, 2004[interview]).

Ornament is a visual prayer. It consists of rhythmic repetition and continuity (Pirous and Noe'man, 2004[interview]).

Islamic ornament has three genres of arabesque, geometry, and calligraphy to endow visual pleasure and the paradisiacal concept. Islam's rejection of the representation of living beings has often been mentioned. The Holy Koran[26] itself has no formal ban on this representation, but the *hadith*, the sayings of the Prophet, took a hostile attitude towards representation. It says, 'those who will be most severely punished on the Day of Judgement are the murderer of the prophet, one who leads men astray without knowledge, and a maker of images of pictures'. Similarly, 'The artists, the makers of images, will be punished at the last judgement by the decree of Allah who will inflict upon them the impossible task of breathing life into their works'[27].The *hadith* implies in no way that the Prophet prohibited mosque ornamentation. The Prophet neither forbade meaningful and moderate mosque ornamentation nor permitted it. But, luxurious ornamentation is believed to decrease Muslim faith in God by distracting concentration on prayer, thus the form, design, and function of the mosque ought to be inspired by Islamic faith, principles and values[28].

Among Indonesian scholars, (i) artistic freedom is allowed in Islam, although ornament is regulated in the *hadith* (Ambary 2004[interview]), (ii) Islam has no instruction on using ornament, and artists have freedom (Said 2004[interview]), (iii) Between two schools in Islam, one forbade living figures to prevent iconoclasm, while the other allowed them under the condition that ornaments should be used for a good purpose. Ornament is a means of attracting people to embrace Islam (Herman and Atik 2004[interview]).

About a careful practice of ornamentation in Javanese mosques, people's urge to visit a place of worship is formed by their culture, and is practised on the material level. Javanese Muslims thought that a mosque should be the most beautiful and lavish building, legitimising this as 'God Himself is beautiful and He loves beauty.'

[25] Medallions of Hindu-Buddhist lotus or Tree of Life in Mantingan (1559) have a round and oblong shape. According to Stutterheim, Bergema, and others, 'the tree of life' is both related to the Cosmos Mountain in Hinduism and the life in Paradise in Islam.

[26] The Koran has no message about art and architecture, despite uncompromising to idolatry: 'Believers, wine and games of chance, idols and divining arrows are abominations devised by Satan. Avoid them, so that you may prosper' (surah 5:95).

[27] Bukhari's *hadith*.

[28] Caliph Al Walid I (r.705-15) of the Umayyad introduced mosque ornamentation on a grand scale in order to enhance the status of Islam.

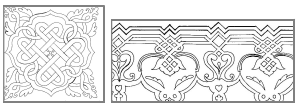
Deeper understanding of this thought, however, tells against this lavishness, and warns that superfluous ornament is a way close toward the devil (surah 12:27). Anything which distracts from prayer should be avoided. As a solution, stylised forms in repeated geometric patterns are applied, while Koranic calligraphy verses are used as a means of communication (Noe'man 2004interview).

Marwoto (2003) states earlier that the first appearance of Islamic ornaments in Java were heart-shaped leaf (waru leaf), geometric interlace, and calligraphy. The heart-shaped leaf[29], a kind of Islamic arabesque, was mostly decorated in mosques and on gravestones, such as Mantingan and Banten, while geometric interlace and Arabic calligraphy appeared on gravestones, ceramics and mosques of Kudus, Mantingan and Cirebon. Winged gate was neither found in the Hindu-Buddhist period nor in any other Islamic culture. As a bird of the vehicle of Vishnu in Hindu myth, this motif could be the invention in Javanese Islamic decorative art. Moreover, a few interviews (2006) can enrich this information, owing to lack of literature and research on this theme.

Arabesque is particularly hard to define as Islamic ornament or not. Javanese Muslims do not consider arabesque to be important, compared to geometry and calligraphy as the sign of Islam. Few samples were found in the transitory period (Marwoto). Its reason can be due to the rapid assimilation of arabesque with Hindu scrolls when it arrived. Local culture accepted arabesque but modified it, as arabesque was close to existing scrolls (Tjandrasasmita and Fanani).

Hidayatullah[30] (1750), West Java; Cut Meutia (1920), West Java

Geometry: Although prehistoric megalithic culture had geometry in Indonesia, a simple Islamic geometric decoration was shown on ancient tombs in Aceh and earlier mosques of Cirebon around the 16th century (Marwoto). And there was an effort of a simple Islamic geometrical frame at Sendang Duwur or a combined interlace with a foliated motif on the mihrab of Agung Kasepuahn (1498) (Tjandrasasmita). Islamic geometry has its distinct pattern and grids, while megalithic one does not have this rule. There seems no strong continuity on Islamic geometry, due to the specific patterns which Javanese Muslims could not make. Rather, they used local geometry in earlier mosques, differing from that in new mosques (Marwoto). Sharing with Marwoto, Fanani relates, despite the arrival of geometry to Indonesia in the first Islamisation, it was not easily adopted, not because of local geometry, but because of the complicity of Islamic geometry, based on mathematical calculation which local people at that time did not know. Megalithic geometry was simply made. When Muslims went to Mecca during Dutch colonisation, its technique was brought back. It was after independence in 1945 that orthodox Islamic geometry was executed by architects who had studied mathematics, and became popular.



Agung Kasepuhan (1498), Central Java; Cut Meutia (1920), West Java

Calligraphy: Arabic scripts were gradually introduced to Indonesia. Between two types of *Kufic* and *Ta'liq/Nasta'liq* on tombstones, *Kufic*[31] was used in the words 'Allah' and 'Muhammad'. Islamic calligraphy was also applied to Koranic words on sculptures and drawings which depict human beings, animals and flora. From the 14th to 16th centuries, calligraphy appeared less likely in mosque ornamentation, but was on graves or in manuscripts, combined of Javanese and Arabic letters, called *Jawi* (Tjandrasasmita).

Ambary (1998) says that Arabic *Kufic* script stated from the 11th century, introduced by Cambay graves in Gujarat, and other styles, such as *Naskhi,* appeared on stone, glass, wood, and paper in the 18th century when the Middle East or Mogul architecture was established. Calligraphy was successfully absorbed into Javanese local culture and decorated mosques as a creative art. The significance of calligraphy was praised: 'In Islamic culture, calligraphy is the most important, then geometry sometimes' (Marwoto), and 'Calligraphy was easily adopted here due to the message of Islam' (Sedyawati).

Al Marunda (1527), West Java; Sunda Kelapa (1969-71), West Java

In parallel with the use of Hindu-Buddhist motifs in mosques, continuity of Islamic ornaments can be also discussed. Suptra underlines that all Islamic ornaments were accepted, but calligraphy was mostly used as a new form of art. Islamic geometry and arabesque became syncretic with local ornaments, as a characteristic expression of Javanese Islamic ornament. Marwoto shares this view partially that 'Islamic ornaments have always been in Java. Calligraphy was mostly visible, while the others were shown from time to time, separately or mixed'. Sedyawati agrees with this, 'Geometry and arabesque were likely continued. We can glimpse them in mosques'. Of these, Fanani tries to resolve that 'Islamic ornament continued all the time, a kind of arabesque at the transitory period, calligraphy during the Dutch colonisation era, very popular geometry in the contemporary period'. For the researcher's view, the study on Islamic ornaments was greatly neglected. Was it due to continuity of pre-Islamic motifs in mosques?

During the fieldwork on surveying 30 mosques, nine have arabesque on mihrabs, minbars, ceilings, railing, walls of the prayer hall and serambi. Sometimes the motif is displayed on lamps. 14 mosques have geometric motifs, adorned with floral, calligraphic

[29] It showed in Iran ceramics (13-14C). During Yuan dynasty in China, the motif was known as 'yun jian' or cloud collar. Arabesque appeared on mosaics in Dome of the Rock.

[30] A variation of arabesque was newly made during the mosque renovation. The artist saw orthodox Islamic arabesque from books, but wanted to express in a regional character (Keeper of the mosque, 2004interview). This was confirmed by Fanani, calling it 'Malay Javanese Islamic arabesque' (2006interview).

[31] The gravestone (1082) at Leran in Gresik was written in *KuficI*.

and bird-like motifs. Geometric designs have more variety than arabesque in their location, ranging from mihrabs, minbars, ceilings, doors, pillars, windows, railing, and walls to floors, both indoors and outdoors. Calligraphy appears in all mosques, particularly on mihrabs, graves, facades, signboards, and roofs. The Islamic crescent symbol was attached to by calligraphy, making visible the name of 'Allah'. At mosques in the contemporary period, either renovated or newly built, geometry and arabesque were full. Nevertheless, every incoming Islamic ornament had to be adapted into local culture, creating a syncretic Javanese Islamic one, regardless of its more or less use in mosques.

Chinese and European Influences

The Chinese also contributed to the development of Javanese culture. Their contacts with Indonesian island were as early as the fifth century. However, traders from the southern provinces of China and the coast of Campa (now Vietnam) became active in Java and the southern Archipelago in the 15th century. The tales of the Malay Annals of Semarang and Cirebon give rise to the assumption that Chinese Muslim traders and artisans lived in business quarters around mosques. Huge quantities of Chinese cash and earthenware were imported into Java. The annals contain information on the building of mosques by Chinese Muslims, too. The style is similar to the pagoda built in China, composed of superimposed roofs. Following their settlement in port towns in Java, such as Gresik, this style spread widely. It is supposed that the Chinese introduced carving tools for mosque ornamentation. Decorative stone reliefs on Islamic tombs on the north coast testify to Chinese workmanship, the art of woodcarving for doors, panels, and chests.

Chinese traders had a strong position at *pasisir* communities. They were also talented craftsmen in wood and ceramic (Fanani, 2004interview).

The most distinct Chinese influence was curvilinear meanders and cloud motifs, shown on the relief of the Panataran temple complex in Majapahit. In Cirebon, Chinese motifs of cloud and rock, taken from ceramics and paintings, were incorporated into the designs of palaces and mosques, and displayed in the gateway to the Kasepuhan Palace. In particular, the cloud motif often accompanies kala-makara, becoming a flame or floral-like. The door of Agung Demak (1479) has a Chinese form, a dragon breathing fire. Ornamental Chinese plates were inserted into the walls of mosques at Banten, Kudus, Jepara, and Cirebon. Tjandrasasmita (2004interview) asserts the influence of Chinese rock and cloud in ceramics of mosques in Demak and Cirebon. Yunardi (2004interview) gives a reason for a mixture of Arabic, Chinese, and local people's influences on Cirebon mosques.

Compared to their active colonisation of Indonesia, Europeans did not leave a permanent mark on Islamic mosques in Java[32]. Wertheim (1956) explains that, despite the foreign merchants' trade, they did not mix with Indonesian society, partly because of the low esteem in which European traders were held. When the Portuguese[33] set out to spread Christianity, they first had to adapt themselves to Indonesian peculiar culture. It was the same for the Dutch colonisers in the 17th and 18th centuries. Javanese culture developed largely unaffected by the presence of the Dutch traders[34].

Tjandrasasmita claimed that Christianity did not influence Javanese mosques very much. If they did, palmette[35], crown, and flower, especially tulip or lily[36], appeared. European and Indonesian styles in furniture were popular in the 19th century. He described this phenomenon as Javanese 'tolerance'. Sudradjat (2004interview) inclined to ignore the impact of the Dutch on mosques. Dutch ceramics and tiles were used in mosques without any religious meaning (Herman and Atik 2004interview). European motifs are sporadically shown in many mosques, particularly on glazed tiles or carved wood. The mihrabs and walls of Menara Kudus (1537) and Tambora (1761) bear floral tiles, while the wooden minbar of Al Azhar (1952-8) was engraved with palmette and other geometrical motifs. Cut Meutia (1920), which started as a government office but is now a mosque, echoes a trend of a prevailing European style: simple but elegant floral motifs and palmettes.

SUMMARY

Javanese people are syncretic; this is called Indonesian tolerance and flexibility. Two Islamic manifestations exist: Agami Jawi (Javanese Religion) adapted mystically inclined Hindu-Buddhist beliefs and concepts, and integrated them within an Islamic frame of reference. To the contrary, the Agami Islam Santri (Islam of the Religious People), a variant of Javanese Islam, is much closer to the formal dogma of Islam. Interviews with Indonesians revealed the importance of Agami Jawi, and, historically, the Mataram kingdom practised syncretic teachings from mystic animism, Hinduism, Buddhism, and Islam.

Although Islam arrived around 1450 in Java, probably from Gujarat in northern India, it was gradually spread via several channels: trade, marriages, Sufism, pesantren, and art and culture, in order to create adaptation of Islam. The origin of the Javanese mosque, either pre-Islamic or foreign in its source, is still uncertain, but as mystical Sufism believed mosques to be sacred places, existing ideas and forms of mysticism continued: a square plan, soko guru, and tiered roofs from Hindu-Buddhist temples in East Java. Consequently Javanese mihrabs possess sacredness, but are not as elaborate as those in the Arab world.

The Islamic Java has three periods, based on the political and religious movements: (i) the transitory period (15C-1619), (ii) Dutch colonisation of Java (1619-1945), and (iii) the contemporary period (1945-to the present). In the transitory, significant continuity of pre-Islamic tradition was shown, while European and Islamic influences on Javanese mosques took place gradually

[32] The term 'Dutch' has no relation with art and culture, but its rule in Java.

[33] Portuguese introduced synthetic eastern and European style at Water Castle in Yogyakarta.

[34] Palaces of the Governor-General (Jakarta) and Kasepuhan (Cirebon) bear Dutch predominance.

[35] Sasanian palmette, a prototype Islamic arabesque, was introduced to Indonesia by Portuguese and Dutch Christians, not by Indian or Arab Muslims (Tjandrasasmita 2005interview).

[36] Ottoman tulip and lily became cultural mediators in Europe, particularly during the Rococo period.

during Dutch colonisation. Toward the contemporary, pan-Islamic motifs replaced those existing elements. Nevertheless traditional cultural heritage continues, creating a characteristic regionalism in architecture and ornamentation.

Many pre-Islamic motifs continued in mosque ornamentation, such as natural fauna, floral, geometric interlace, and calligraphy. Among them, kala-makara and lotus were the most popular and recurrent. Living figures were stylised, rather than abandoned, despite the ban of depicting figures according to the *hadith*. As new motifs, calligraphy, interlaced geometry, heart-shaped leaf, and winged gate appeared at Sendang Duwur (1561) which is the best syncretic architecture and ornamentation.

Islamic ornament was brought to Java by traders and missionaries. Calligraphy was mostly used, while geometry and arabesque were assimilated with megalithic geometry and Hindu-Buddhist scrolls, differing from those in the Arab world, called 'Javanese Islamic ornament'. Islamic Java consists of multiple elements: prehistoric, Hindu-Buddhist, Islamic ideas and forms, including to a lesser extent Chinese and European ones. The syncretic religion was mirrored in mosque ornamentation, and continuity is a 'must' for Javanese Muslims.

A few findings can answer the research questions. (1) Elements of Javanese mosques may have mystical functions. (2) The majority of motifs appear to be a continuation of pre-Islamic ornaments. (3) The sacredness of Javanese mosques allowed their mihrabs and ornaments to be sacred, implying ornaments both as aesthetic and symbolic. (4) Syncretism can cause difficulty in identifying motifs whether they come from Hindu-Buddhist Java or copied from the orthodox Islamic world outside Java. (5) The literary debates on 'continuity' put forward into interviews to find its information in depth.

References in alphabetical order: Ambary 1998/2004(interview); Baloch 1980; Behrens-Abouseif 1998; Boedjardjo 1978; Brown 1956 ; de Graff 1947-8 ; de Graff and Pigeaud 1984; Davies 1982; Dawson and Gillow 1994; Dickie 1978; Fanani 2004 (interview)/2005(interview)/2006(interview); Fontein 1990; Fox 1998; Frishman 1994; Geertz 1964/1971; Grabar 1973; Groenveldt 1960; Hattstein 2000; Herman and Atik 2004(interview); Hillenbrand 1994/2001a; Insoll 1999; Irwin 1997; Isnaeni 1996/2004 (interview); Johns 1961; Koentjaraningrat 1990; Krom 1923; Kuban 1994 Lewis 1992; Mansyur Sawah Lio 2003(interview); Marwoto 2003/2006(interview); Naddaff 1991; Moersid, Fanani & Budhi 1991; Moquette 1913; Noe'man 2004(interview)/2005(interview); O'Neill 1993/1994; Omer 2004; Pigeaud and de Graff 1976; Pijper 1947; Pirous 2004(interview) ; Pope 1977 ; Prisse 1983 ; Raffles 1817/1982 ; Rice 1989; Ricklefs 1974/1993; Prijotomo 1992/2004(interview); Said 2004(interview); Saliya 1990; Schrieke 1957; Slametmuljana 1976; Soemantri 1998; Stierlin 1996; Subarna 2004(interview); Sudradjat 1991/2004(interview); Suptra 2006(interview); Tjahjono 1998; Tjandrasasmita 1978/1984/1985/2004(interview)/ 2005(interview)/2006(interview); Wafi 1988; Wagner 1959; Wertheim 1956; Yunardi 2004(interview)

CHAPTER V

Identification of Motifs in Javanese Mosques

A juxtaposition of symbolic connotation and aesthetic beauty in ornaments enriches a subtle and serene atmosphere in temple and mosque ornamentation. In Hindu-Buddhist temples, scrolls represent 'the start of life', blessed by numerous gods and goddesses, while in mosques, a magic of Islamic arabesques allures our eyes into wandering, denoting 'the vision of paradise'. Intentionally or coincidentally, scrolls and arabesques came to merge into the wholeness, created by local genius, and provide a passage to Paradise in Javanese mosques.

Qualitative research is the 'generation' of ideas which can shape blocks of knowledge into manageable categories, and the interview is the most extensively used method in qualitative research. Three types of interview are found: structured with schedule, semi-structured with schedule, and unstructured. In the semi-structured interview with schedule, the interviewer has a list of questions on specific topics, but the interviewee has great freedom in making answers. Questions do not necessarily follow the outlined schedule, and can be improvised, depending upon the nature of the replies given. A successful interviewer needs nine qualities to be 'knowledgeable, structuring, clear, gentle, sensitive, open, steering, critical, remembering and interpreting'.

INTERVIEWS ON IDENTIFYING ORNAMENTS

Background

This research mainly concerns the question of continuity of pre-Islamic motifs in Javanese mosque ornamentation. In order to answer the research question, literary sources were used[37], but did not fully answer questions when the researcher met a difficulty in identifying scroll motifs in Javanese mosques. Similarities exist between Hindu-Buddhist scrolls and Islamic arabesques, caused by their having the same character of undulation and repetition. However, in Hindu-Buddhist temple ornamentation, naturalness and lavishness were found in Central Java, while stylisation appeared in East Java. Interestingly, the term 'stylisation' applies to Islamic arabesque, too[38]. Finally, the researcher considered interview as the best method of clarifying a number of points not clearly discernable from the literature. There is a strong body of intellectuals and practitioners working in the field in Indonesia, and for the background to this thesis, evidence was sought through interview with 20 specialists in art, archaeology, architecture, design, and history, hoping to find a new approach to the identification of origins of motifs in Javanese mosques.

Between November and December in 2004, on the occasion of the researcher's second fieldtrip to Java, more than 20 interviews were conducted in West and East Java. The interviews were planned to be semi-structured around the three main questions with the possibility for spontaneous questions. This was made according to the researcher's long experiences in interview for the best outcome. The interviews were undertaken by telephone, mail, or face-to-face meeting at university, office, mosque, or home of the

[37] Three sources were attempted: (1) Javanese temples and mosque ornaments (Stutterheim 1927, Kempers 1959, Fontein 1971), recommended by Indonesian archaeologists (Santiko and Tjandrasasmita) who underline that ornaments are created by Javanese local genius, (2) Indian influence on Indonesian ornaments (Coomaraswamy 1972, Sedyawati 1990), and (3) Hindu-Buddhist Indian temples as the origin of those in Indonesia (Burges 1956, Brown 1956, Zimmer 1960). *Indian Architecture according to Manasara-Silpasastra* (Āchārya 1996) did not mention on rules of ornaments. Moreover, a few scholars in U.K. revealed no rules of Hindu-Buddhist temple ornamentation.

[38] Islamic geometry can be problematic, due to ingenious geometrical motifs in prehistoric Indonesia. Calligraphy is a novelty.

interviewees. Interviews were conducted with four archaeologists, eight architects, one architecture historian, two artists, one historian, a couple of ornamentists, one art historian, one designer, and one carver. Their names were found from literature reviews in Indonesia or by recommendation of one scholar by another. Despite their different backgrounds and range of ages between 40 and 70, they are all (i) of similar professions in art, design, and architecture, (ii) Javanese who reside in Java with the exception of one Balinese, (iii) Muslims except one Christian, and (iv) international contacts through their studies, seminars, and conferences. As part of the interview, a few drawings of motifs in Javanese mosques were shown to the interviewees as examples, in order to build an interactive atmosphere and to obtain a focused response to identifying motifs, since the topic had not been explored deeply before.

All the interviews were taped, and some important explanations were written down at the same time. The interviews were held in a setting which was quiet and familiar to the interviewees. They were objective, open-minded, and conducted in an informal atmosphere. Most of the interviewees spoke English fairly well, although an interpreter was required on one occasion. The interviewees seemed to enjoy communication with the interviewer, expressing curiosity and surprise, although there were a few points of which they had neither thought previously nor knowledge. The outcome of the interviews led directly or indirectly to three conclusions. First, they supported the importance of empirical work (measuring, drawing, comparing ornaments on existing monuments) to arrive at conclusions. Second, they opened up more alternatives by which to classify motifs from different religions. Third and last, they encouraged more research into this subject, since only a few theses (Habib/Marwoto) and articles (Ambary/Tjandrasasmita) have been published about it in depth hitherto.

The following three main questions formed the structure of the interviews.

Question 1: Does Hindu-Buddhism have a canon of temple ornamentation?

Question 2: If there is no canon, how can origins of motifs in Javanese mosques be identified as Hindu-Buddhist or Islamic or both?

Question 3: What conclusions can an examination of motifs on renovated mosques facilitate?

Drawings which were shown during the interview were chosen from different areas and periods in Java, displaying either or both Hindu-Buddhist and Islamic influences, in terms of ideas and forms. These examples were not comprehensive, but were intentionally selected to clarify their origins. Scrolls of Agung Malang (1853-90), Al Wustho Mangkunegara (1878-1918), and Al Ukhuwah Balai Kota (1990) appear to be Hindu-Buddhist, due to a resemblance of those in Hindu-Buddhist temples. Motifs of Hidayatullah (1750, renovated) and Sunda Kelapa (1969-71) are likely Islamic origin, because they associated with stylised Islamic arabesques. A motif of Raya Cipaganti (1933) is perhaps a combination of Hindu-Buddhist and Islamic styles, while that of Cut Meutia (1920) can be classed as European, according to the mosque design by a Dutch architect during Dutch colonisation.

Geometric motifs were also examined to add information on syncretism in Javanese mosque ornamentation, because several types of geometrical design were found in prehistoric times (Subarna 1982-3), and geometrical interlace appeared during the Islamic period (Marwoto 2003).

In this context, a few further questions arise. (i) Does Islamic interlace differ from earlier prehistoric geometrical motifs? (ii) Can geometry be identified as Islamic, if it is found in mosques? (iii) What is the difference between geometrised Hindu-Buddhist lotus motif in Agung Malang and Islamic geometry which resembles stylised lotus in Al Akbar Surabaya? (iv) Are the different geometrical tiles of Raya Cipaganti to be interpreted as design, or as simply showing a ready-made European material? Calligraphy seems to be a sole ornament which has no difficulty to be called Islamic.

Rules of Hindu-Buddhist Ornament

Question 1: Does Hindu-Buddhism have a canon of temple ornamentation?

Five of the 20 respondents answered that there are no rules observable in Hindu-Buddhist ornaments. A Hindu guidebook, *silpasastra*, deals with architecture and sculpture, but does not with ornament (Lugra/Noe'man/Santiko/Sedyawati/Tjandrasasmita). One (Prijotomo) was not sure about the existence of rules, while the rest (14) had no comment about this matter. Roebiharto and Lugra commented that techniques of ornamentation were inherited from generation to generation, while Muharam said that carvers neither had knowledge of the meanings of motifs nor their proportions in adorning temples. This indicates that no canon of temple ornamentation exists, confirming the researcher's assumption. Moreover, Javanese temple ornamentation was derived from India, but created by local genius, naming 'Hindu-Javanese'.

Identifying Origins of Motifs as Hindu-Buddhist or Islamic or Both

Question 2: If there is no canon, how can origins of motifs in Javanese mosques be identified as Hindu-Buddhist or Islamic or both?

Nine approaches of identifying origins of motifs were recommended by the Indonesian scholars: (1) ambiguity, (2) background, (3) chronology, (4) creativity, (5) empirical method, (6) heritage, (7) principle, (8) purpose, and (9) reference. Each of the nine ways of looking at motifs needs to be elaborated.

(1) Ambiguity is the result of syncretic Islam in Java, absorbing local animism and Hindu-Buddhism which leads an unclear boundary between different faiths; thus no clear definition can be made with one religion or set of beliefs. It applies to ornaments too. The presence of continuity and change in ornaments at the same time became problematic identifying motifs in lotus and scroll (Sedyawati). Ambiguity was due to Islamic flexibility, taking any motif except living figures (Ambary/Tjandrasasmita).

(2) Background covers culture, religion, people, politics, and economy of a society. Both cultural history and people's deeds and sayings should be emphasised. A mosque building itself is not a sufficient guide to classifying motifs as Hindu-Buddhist or Islamic (Noe'man/Prijotomo). Historical, anthropological, and social-scientific approaches are necessary. Political and all other sources should be used. 'I try to see historical sources, because manuscripts contain culture' (Tjandrasamita).

(3) Chronology makes distinctions between three Islamic periods: transitory (c.15c-1619), Dutch colonisation (1619-1945), contemporary (1945-the present). Transitory starts around the foundation of Demak, and continues until Dutch colonisation of Java

began. Contemporary begins when Indonesia's independence. Orthodox Islamic elements appeared more in the contemporary (Isnaeni/Said/Tjandrasasmita).
(4) Creativity of decorating Javanese temples has been referred as the term 'local genius'. Artists had their own concepts of beauty, and modern mosques allowed them to explore any style in mosque ornamentation (Lubis/Muharam).
(5) Empirical fieldwork among monuments and their surroundings was advocated. In examinations, temple motifs should be primarily analysed, and then its outcome is compared with ornaments found in mosques (Santiko/Sedyawati/Tjandrasasmita). However, 'Investigating Javanese mosques are difficult, due to changes, renovations, reconstruction, and lack of old descriptions and historical records. Therefore empirical research into Javanese temples is crucial to understand Javanese mosques' (Budi).
(6) Prehistoric indigenous and Indian Hindu-Buddhist motifs categorise Javanese mosque motifs as pre-Islamic or Islamic. Cultural heritage both in temple and mosque ornamentation should be valued (Subarna).
(7) Principle means the general rules of Hindu-Buddhist and Islamic ornaments. Its significance will be dealt comprehensively later.
(8) Purpose is another expression for function of ornament as symbolic or aesthetic. Of the same motif, Hindu-Buddhist ornaments to be symbolic; and Islamic as aesthetic (Lubis/Muharam). Santiko borrowed Bosch's theory that if scrolls have a root with a meaning in Hindu-Buddhism. If not, the motif is more likely to be Islamic.
(9) Reference is personal experiences or literary sources, which can identify motifs. If motifs have been seen before, related to Islamic buildings or literature, this experience prompted him to judge a motif as Islamic (Pirous).
During the interviews, two crucial terms emerged: (i) 'cultural continuity' as preference for Javanese, which Fanani has tried to emulate in Agung Semarang mosque in 2004, (ii) distinction between 'Arabic' and 'Islamic'. Islamic can be international, not necessarily mean Arabic. Arabic expresses ethnic Arab culture. 'I am Javanese, and then my religion is Islam' Javanese philosophy affected Javanese mosque ornamentation (Prijotomo). The result showed principles (16 out of 20) as the best approach to analysing the origins of motifs. Chronology (14) and creativity (13) are alternatives. Although empirical analysis seems less important (8), the researcher considers it the most appropriate method in this research.

Continuity of Javanese Culture in Mosque Ornamentation

Continuity of pre-Islamic ornaments in mosques was strongly voiced.

Ambary: Any motifs are allowed in Islam, as long as they do not cause controversy.
Fanani: Javanese culture is greatly concerned with continuity. Indonesia is a melting pot of syncretism and continuity.
Herman and Atik: In Java, everything is mixed. Javanese make their own style.
Lubis: In general, Javanese mosques use Hindu-Buddhist motifs.
Pirous: Indonesia has a transparent syncretism. For cultural continuity and identity, the Indonesian Koran used local motifs.
Prijotomo: Javanese mosques use Hindu-Buddhist motifs in an Islamic way: a combination of idea and form.
Sedyawati: Continuity from old religions to a new one is a deep rooted cultural value.
Subarna: Indonesian heritage is very important in mosque ornamentation.
Tjandrasasmita: Islam adopted all kinds of design spiritually and physically, as the principle of worship is the same in temples or mosques. Indonesia is a melting pot of assimilation, diffusion, synchronisation, and flexibility.
Yunardi: Mosques took local motifs, called Islamic Indonesian motifs.

Hindu-Buddhist and Islamic Principles of Ornament

Reseult shows 'principles' as the best means for distinguishing motifs. (HB: Hindu-Buddhist, I: Islamic)

Ambary: (I) stylistic, not necessarily repetitive
Budi: (HB) natural, not stylised; (I) abstract, interlaced, intricate
Fanani: (HB) smoother, flowers; (I) geometry, rigid, strict, leaves
Herman and Atik: (HB) might show repetition; (I) geometry, calligraphy, plants
Isnaeni: (HB) no rules about repetition, freer and more natural; (I) abstract, circular rhythm
Lubis: (HB) natural, animals with flowers and landscapes; (I) calligraphy, natural trees, leaves, flowers
Lugra: (HB) detailed floral motifs
Muharam: (HB) natural; (I) geometric, abstract
Noe'man: (I) repetition, geometry
Pirous: (I) abstract, repetitive, floral
Prijotomo: (HB) natural, coarse, 3-dimensional floral, a root in scrolls with plants or animals
Said: (I) geometry, calligraphy
Santiko: (HB) a root in scrolls
Sedyawati: (HB) a root in scrolls, sometimes replaced motifs like animals. Scrolls move to multi-directions; (I) foliage, no root, the movement of scrolls has one direction
Tjandrasasmita: (I) geometrical
Yunardi: (HB) flowers; (I) geometrical, straight, strong lines, leaves

In identifying Hindu-Buddhist ornaments, the most notable quality is natural, free, coarse, and detailed (6 responses). An alternative is a root in scrolls, sometimes replaced by other motifs such as animals (4). Floral or flowers (3) is another solution to be looked into. Of Islamic ornaments, geometric and straight (7) is the first choice, and plant and leaves (5) and abstract (4) and repetitive (4) are alternatives.

Principles of Hindu-Buddhist (HB) and Islamic (I) motifs

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HB			1		1	3		1	**6**		1	4			1
I	4	3	1	1		2	**7**			5	4		2	1	

Ornaments on Renovated Mosques

Question 3: What conclusions can an examination of motifs on renovated mosques facilitate?

Ornaments on mihrabs in the transitory period showed Hindu-Buddhist influence, but if they were renovated after the 18th century, they could be Islamic (Said/Tjandrasasmita). A deep research around the mihrabs should be done due to lack of documentation on mosques (Budi/Heuken/Isnaeni). Many renovated mihrabs were adorned by local people (Yunardi). New motifs on mihrabs could be copied from the West (Muharam). A beautiful mihrab is a strategy to encourage non-Muslims to embrace Islam (Prijotomo). A low degree of ornamentation on mihrabs was caused either from a wish not to disturb prayers, or because there was not enough finance for elaboration. Renovation of mosques happened mostly after Dutch colonisation of Java, but renovated/reproduced scrolls could have both Hindu-Buddhist or Islamic origins (Said).

Applying Theories to Selected Motifs in Javanese Mosques

Based on the literary sources of Islamic arabesque and the interviews, three categories are made to identify the origins of motifs: Hindu-Buddhist scrolls (HBS), orthodox Islamic arabesque (OIA), and combined Hindu-Buddhist scroll and Islamic arabesque in idea or form (CHI). Scrolls are chronologically listed, according to the foundation of date of their mosques, with renovated/reproduced ones at the end.

Examination of HBS, OIA, CHI

Agung Demak (HBS): Golden Germ	Al Wustho Mangkunegara (HBS): Makara	Sunda Kelapa (OIA): geometric, abstract, no root	Agung Jepara (CHI): repetitive, diagonal rhythm (OIA): natural, symbolic (HBS)

30 motifs were selected from the 26 mosques of the pilot study and fieldwork. Four (Cut Meutia, Sunda Kelapa, Al Ukhuwah Balai Kota, and Hidayatullah) mosques displayed two types of motif, because of influences from both Hindu-Buddhism and Islam. Prijotomo (1984) claimed that a combination of idea and form in Hindu-Buddhism and Islam was practised in syncretic Javanese mosque ornamentation: Transitory-(HBS) 8; Dutch colonisation-(HBS) 5, (OIA) 2, (CHI) 2; Contemporary-(OIA) 5, (CHI) 3; Renovated/Reproduced-(HBS) 2, (OIA) 1, (CHI) 2; Total-(HBS) 15, (OIA) 8, (CHI) 7

The total shows 15 Hindu-Buddhist scrolls, eight Islamic arabesques, and seven with a combination of Hindu-Buddhist and Islamic origins. 'HBS' which were completely dominant in the transitory continued during the Dutch colonisation era, but evolved in the contemporary. Instead, 'OIA' became predominant. During Dutch colonisation, decorating Islamic arabesque in Kampung Nembol could be the influence of a Palestine missionary and builder. 'CHI' appeared this time, and continued in the next period. Renovated/reproduced scrolls employed 'HBS', 'OIA', and 'CHI', indicating continuity through syncretism in idea and form between Hindu-Buddhist scrolls and Islamic arabesques. In short, Hindu-Buddhist scrolls were favoured in Javanese mosques, despite a tendency towards Islamic arabesques in the contemporary period. Continuity of Hindu-Buddhist scrolls, sometimes combined with Islamic style, is seen in this analysis.

1 Pajlagrahan 1452(HBS) **TRANSITORY**	2 Agung Demak 1479(HBS)	3 Sunan Giri 1485(HBS)	4 Agung Kasepuhan 1498(HBS)	5 Al Marunda 1527(HBS)
6 Sunan Kalijaga 1533(HBS)	7 Astana Mantingan 1559(HBS)	8 Agung Mataram 1568(HBS)	9 Agung Solo 1757(HBS) **DUTCH C**	10 Agung Yogya 1773(HBS)
11 Agung Malang 1853(HBS)	12 Al W. Mang-kunegara 1878(HBS)	13 Kampung Nembol 1880(OIA)	14 Caringin Labuan 1883(CHI)	15 Cut Meutia 1920(HBS)
16 Cut Meutia 1920(OIA)	17 Raya Cipaganti 1933(CHI)	18 Al Azhar 1952(OIA) **CONTEMP**	19 Sunda Kelapa 1969(CHI)	20 Sunda Kelapa 1969(OIA)
21 Sabilliah Malang 1974(CHI)	22 Al Ukhuwah B. Kota 1990(CHI)	23 Al Ukhuwah B. Kota 1990(OIA)	24 Al Akbar Surabaya 1995(OIA)	25 Pusdai Jaber 1996(OIA)
26 Agung Jepara 1561(CHI) **RENOV/REPRO**	27 Agung Mataram 1568(HBS)	28 Kanoman Semarang 1575(CHI)	29 Hidayatullah 1750(OIA)	30 Hidayatullah 1750(HBS)

Consultations were given by Indoneisan scholars who argue on characteristic regional Islamic motifs.

SUMMARY

In Java, syncretism, local genius, creativity, and continuity are characteristic terms, used to explain the ornamentation of temples and mosques. No explicit rules seem to exist, because of the syncretic history of religions in Java.

From the interviews, five findings emerged. (1) There are no known rules on temple ornamentation. (2) The origins of motifs as Hindu-Buddhist or Islamic or both can be identified through nine approaches (ambiguity/ background/chronology/creativity/empirical work/heritage/principle/purpose/reference). Among them, principles of ornament, chronology, and creativity are the most important. An empirical method, however, comparing temples and mosques should have the same importance too. (3) Hindu-Buddhist scrolls have 'natural, free, coarse, and detailed' quality, while Islamic ones represent 'geometric and straight' at first. An expression of 'ornaments are based on geometry' by Day (1903) corresponds to the interviews and literary sources. (4) As mosque renovation started after Dutch colonisation of Java, especially in the beginning of the 20th century, some of renovated/reproduced scrolls can recognise their origins. (5) Scrolls in Javanese mosques were strongly influenced by Hindu-Buddhist ornamentation in the transitory, while Islamic arabesque seems to be more common in the contemporary period. On the whole, purely Hindu-Buddhist or a combined style with Islamic arabesque in idea and form indicates how Javanese mosques have kept their heritage.

The interviews contributed to analysing the origins of scrolls. Specific findings in this chapter are to be applied to the chapter 10, 'Harmony of Hindu-Buddhist Scrolls with Islamic Arabesques'.

Logical but Creative Approach to Aims and Solutions

If there was methodology on saving species from DARWIN's evolution (1859) or rescuing the hero from GOETHE's (1749-1832) book, how could the world have changed? In a case of Goethe's, neither might Napoleon have read the book seven times during his war campaigns, nor might many passionate Europeans have felt the need to farewell this world, due to their uncontrollable inner turmoil, influenced by 'Sturm und Drang' movement in the 19th century. In this chapter, the research design is formulated and elaborated. A detailed and operational framework of data collection with triangulation as its method shows the procedure of the literary review, empirical works, pilot study, observation, and interviews. The reason for a purposive sample, rather than a random one, is clarified, including a choice of four motifs (tumpal, kala-makara, lotus, scroll). Many experiments, attempts, and the most appropriate method of solving the research question are also noted. Four indicators (line, shape, form, rhythm) as tools for comparing pre-Islamic and Islamic motifs are explained.

DATA COLLECTION BY TRIANGULATION

Quantitative and qualitative researches take different approaches. The former emphasizes quantification in collecting data and its analysis, and the latter collects and analyses non-numerical data. 'Maximum variation' obtains a broad range of differences and patterns between the sample, while 'snowball' sampling, in which a first group of literature and scholars nominate subsequent sources of information and further individuals, investigates literature in publicly available libraries and in making personal contacts. In this research, four methods were (i) literature review, (ii) pilot and field study, (iii) observation and measurement, and (iv) interview.

The concept of triangulation originates from discussions of measurement validation by quantitative methodologists. It was Denzin (1970) who first advocated and popularised triangulation in qualitative research. The term itself is designed to evoke an analogy with surveying or navigation, in which people discover their position on a map by taking bearings on two landmarks, lines from which will intersect at the observer's position. This method assumes a single fixed reality that can be known objectively through the use of the multiple methods of qualitative and social research.

Four types of triangulation are (i) data, (ii) investigator, (iii) theory, and (iv) methodological triangulation. Methodological one is the most broadly used as a 'between-method' approach: a combination of ethnographic observation and interviews. This method is frequently cited as a rationale for mixing qualitative and quantitative method in a study. For data collection, methodological triangulation is literature, observation and measurement, and interview. Primary sources were acquired in Indonesia, and secondary data was both in the U.K. and Indonesia, despite additional ones from Finland, Kuwait, Spain, and Syria for example.

Literature Review

It is the progressive *narrowing* of the topic, through the literature review, that makes most research a practical consideration (Hart 1970).

The literature review was based on library resources (the British Library, Courtauld Art Institute), museums (the British Museum, the Indonesia Nasional), government authorities (Department of Religion in Indonesia), institutes (Indonesian Institute of Science, National Archaeology Research Center in Indonesia), seminars (Indonesian Heritage Society), conferences (Thailand, Malaysia), media, and the internet. During data collection, the researcher realized that personal contacts were essential, owing to deficiency of references on the research subject in libraries, both in the U.K. and Indonesia. Although the researcher was informed that several researches of the Dutch scholars (Krom 1923/1931, Vogler 1949) could be available at the Leiden University in the Netherlands, a more effective approach was to contact Indonesian scholars, students, and any related people directly, due to (i) the researcher's lack of knowledge of the Dutch language, (ii) the limited time for the research, and (iii) a possibility of acquiring insight into these publications from Indonesian scholars.

Thereafter, useful documents (Subarna 1982-3, Tjandrasasmita 1984, Anbary 1998), written in Indonesian or in a foreign language (Dutch or French), could be translated into English in Indonesia. Another method of collecting data was through interview. When two PhD theses (Sudradjat 1991, Isnaeni 1996) on Javanese architecture, written in English were acquired, history in Java was more clearly understood. Later, when another PhD thesis (Marwoto 2003) on ornaments in the northern coast of Java was presented, specialised data could be gathered. Research on Indonesian Islamic art and architecture seems to be highly marginalised.

Pilot Study and Empirical Work

The nature of pilot study is to test methodology and set 'the gold standard' for the wider research. In this research, the intended objectives are to record the frequency of occurrence and application of prehistoric and Hindu-Buddhist ornaments in Javanese temples and mosques. A pilot study was proposed to demonstrate the necessity of this research and to test the method and to explore a latent weakness in the project arising from an anticipated negative attitude of mosque authorities to the researcher who is a non-Muslim, foreigner, woman, and non-Indonesian speaking. This sceptical attitude was experienced during her residence in Kuwait, when she was studying Islamic art and culture, but was also advised to be attentive to the possible same attitude in Indonesia, due to the contemporary violence between different religions of Hindu-Buddhism, Christianity, and Islam.

A few representative mosques were selected from the internet and tourist guide books on Java, and a comprehensive list of mosques in Jakarta was acquired from the Jakarta Tourist Office, which recommended 24 from the 5,000 mosques. A letter to mosques from the researcher asking for their cooperation was issued. For the pilot study, more than 10 of the 24 suggested mosques were observed, and two famous Hindu-Buddhist temples, Borobodur (8C) and Prambanan (8-9C) in Central Java were added to provide an overview of any relationship between Hindu-Buddhist and Islamic ornaments. The results of the pilot study indicated strengths and weaknesses. The strength lies in the empirical examination, because motifs from Hindu-Buddhist temples

could be compared to those in Javanese mosques. It is a realistic approach. The weakness was how to accomplish this work without arousing undue suspicions.

For a solution, (1) a preliminary notice to mosques was necessary, giving clear reasons for the visits, (2) at mosques, a short interview was held with the authority to gain access and permission to use a ladder to make measurements, (3) Indonesian manpower was certainly required, such as an English speaking male driver, and Muslim male or female assistants who can translate the conversation, give a positive impression of the research, and assist in making drawings, (4) an official letter from the Department of Religion to mosques was not obligatory, because each mosque had its own norms and traditions, (5) a gesture such as a donation could be helpful, (6) caution in behaviour, dress, and clean feet were a 'must', (7) speaking Arabic brought respect, (8) survey could be suspended at any time before prayers which take place five times a day, and (9) Friday was avoided, due to its being a day of prayer. Human and cordial communications with mutual respect seemed the only way to proceed. Face to face meeting with goodwill was essential. Accordingly, all feasible steps were taken, and this had beneficial results later.

Purposive Sample

The sample of people or objectives determines the nature and validity of the findings and theory generated by the research. A purposive sample is another form of judgement sampling, which relates to quota sampling: 'A sample can be made up of people or units specially selected for a particular purpose; those selected are supposed to be typical' (Gardner 1976). It is 'where the researcher selects what he/she thinks is a typical sample, based on specialist knowledge or selection criteria' (Walliman 2005).

Following the pilot study, a purposive sample was seen as the most appropriate approach, because Javanese temples and mosques which were known to displace ornamental motifs should be chosen to answer the research question. Thereafter, a framework for a larger sample of mosques was drawn up, assisted by Faculty of Architecture at Tarumanegara University and a CD2000 produced by the Institute of Technology in Bandung. The CD gave short accounts of history and architecture on 117 important Javanese mosques by chronology and geographical area.

Although a little information on ornaments was given, it was quite useful in sampling mosques at large. Finally, 30 representative mosques, recommended by literature review, tourist office, internet, faculty of architecture, and CD2000, were carefully chosen, ranging from the 15th century to the present day. Representation of different regions between the whole of Java was also taken into account. This time, a few famous Hindu-Buddhist temples, such as *candi* Mendut (9C) and *candi* Kalasan (9C) from Central Java, and *candi* Singasari (12C), *candi* Djago (1268), *candi* Jawi (13C), and *candi* Panataran (1197-1454) from East Java were included. A brief explanation of the reason for the final choice is given below.

Java: Java has the most syncretic culture in Indonesia. There is an expression: 'Islamic Sumatra, Hindu Bali, and Javanese with Islam'. Java has many important temples and mosques, making it an ideal island on which to study cross-cultural influences.

Areas (West, Central, East Java): Although Hindu-Buddhist culture began in West Java in the fifth century, it flourished in Central Java, and then shifted to East Java. Early mosques were built on *pasisir* (coastal area), and culminated in the inland region of Central Java. Nevertheless, a few harbours in East and West Java gradually developed from the beginning of Islamisation, and especially West Java became very active in building and renovating mosques in demand for expanding population after Dutch colonisation. In selecting regional mosques, city and village were both included, because different ornamentation would be found in them. City mosques have tendency of more luxurious and larger ornamentation than those in villages.

30 mosques: The fact that Jakarta, the capital of Indonesia, itself has around 5,000 mosques implies uncountable mosques present in Java on the whole. Thus it was sensible to choose 30 important examples from the 117 representative Javanese mosques which CD2000 recommended. Some of the 30 were often introduced in other sources too, such as literature and tourist guide books. The number of the 30 seems sufficient to validate the research findings. In the choice of mosques, based on a purposive sample, their reputation in architecture or in history were not counted, unless a glimpse of ornamentation was shown, such as Agung Banten (1552-70). If any ornament displayed in CD2000 or in literary sources, those were the first to be considered for inclusion in the 30.

Chronologically, 15 transitory, nine from Dutch colonisation, six contemporary mosques were selected, because pre-Islamic motifs in the transitory became less used towards the contemporary period. Renovated mosques from the transitory and Dutch colonisation periods were considered to be contemporary, because motifs in renovated mosques could be in general renovated or reproduced. If motifs, however, were original, and new paint was added to them, they were dated to the foundation of the mosque building. The researcher was aware of renovations and the lack of documents on dates of construction and ornaments in mosques. Geographically, 17 of the 30 mosques are from West Java, eight from Central Java, and five from East Java. Selection of more than half of the 30 from West Java was based on knowledge of active Islamisation, historical settlements in this area, and different styles of ornament.

Hindu-Buddhist temples: No visible difference between the ornamentation of Buddhist and Hindu temples in Java exists (Santiko and Sedyawati, 2004interview). The temples of Buddhist Borobodur, Mendut, Kalasan, and Hindu Prambanan in Central Java were selected as representatives of lavish ornamentation with an Indian origin. In East Java, syncretic Hindu-Buddhist temples of Singasari, Djago, Jawi, and Panataran which bear indigenous ornaments were singled out. East Javanese temple ornamentation became a prototype for Javanese mosques, seen in mosques of Demak, Sendang Duwur and Astana Mantingan in the Islamic transitory period. However, Central Javanese temples could affect mosque ornamentation within the same area.

Four motifs: tumpal, kala-makara, lotus bud, scroll: (i) Javanese Islam is a syncretic religion derived from mystic animism, Hindu-Buddhism, and Islam. (ii) The researcher observed frequently four motifs in temples and mosques during the pilot study. (iii) Prehistoric tumpal and Hindu-Buddhist lotus bud seem to have continued within the Islamic period without alteration, while Hindu-Buddhist kala-makara and scroll might have changed. Kala-makara needs to be modified in accordance with a ban of living figures in Islamic ornament. Scroll would rather coexist with incoming Islamic arabesques. Consequently, prehistoric tumpal, Hindu-Buddhist kala-makara, lotus bud, and scroll could present excellent examples to examine continuity and influence on Javanese mosque ornamentation.

Islamic periods (15C-to the present day with three divisions): Tjandrasasmita (2005[interview]) recommends to divide the Islamic period into three eras; transitory (15C-1619), Dutch colonisation (1619-1945), and contemporary (1945-to the present day), according to the political and social circumstances. Strong continuity of pre-Islamic motifs was shown in the transitory period, while European and Islamic influences on mosques took place during Dutch colonisation. Toward the contemporary era, orthodox Islamic motifs gradually replaced those existing ones. However, motifs in the contemporary should not be neglected, because they reappeared in newly built or renovated mosques in a form of stylisation. A trend to returning to local culture became conscious among Javanese, in order to keep their identity.

Consequently, three suggested divisions are (i) transitory, (ii) Dutch colonisation, and (iii) contemporary which includes motifs from renovated and newly made mosques after 1945, grouped as 'renovated/reproduced'. If motifs appeared often in mosques, they were examined for continuity. A reason for including motifs[39] from the contemporary period is that (i) many of the samples have uncertainty of their dates on renovation, as no record was seen in journals (scroll in Astana Mantingan), (ii) in some cases, they attempted to reproduce the same design in idea and form from an earlier period (tumpal in Agung Demak), (iii) some retained the pre-Islamic idea, but changed their forms (tumpal in Menara Kudus or kala-makara in Al Marunda) and (4) some have strongly continued to new mosques (lotus bud in Pusdai Jaber), thus these samples are very beneficial for a comparison to observe the degree of the historical continuity on four motifs in idea and form[40], as the main research topic.

> …the investigation towards art in the Islamic period was not applied intensively and continuously, as it was done to the art in the Hindu period… Islamic art in Indonesia in some extent lost continuity, differed from in other Islamic countries…old mosques used material in a traditional way which did not last long, therefore it added some difficulties to define the age and originality of the building (Ambary 1998).

Observation and Measurement

Empiricism is an approach to the study of reality in which knowledge is gained through direct experience. Hume (cited by Bernard 2000) says, 'the only knowledge that human beings acquire is from sensory experience'. This research uses the empirical method of perceptive observation and measurement, because this method investigates a close relationship between Javanese temples and mosques, in terms of presence, continuity, and importance of four motifs in both places.

Before the fieldwork began, visits to the Ministry of Religion (Departments of Hindu Guidance and Islam) and the Archaeological Research Center meant that this study was given the status of an authorized research. Although Director General gave four instructions to each local authority to cooperate between the researcher and local mosques, the effect of the letter was never in full force, owing to the bureaucratic system and slow procedures in Indonesia. Instead of waiting for the responses from the local authorities, the researcher contacted mosques directly. Thereafter, several field trips occurred in spring and autumn 2004 in Java, taking into account dates of Islamic festivals, floods, and possible rejections from mosques. Interestingly, the temple fieldwork met no difficulties, probably because temples are now considered historical monuments that are no longer used. Transport is a serious matter. Buses are crammed with people, leading to the danger of being late, sometimes stopping in the middle of the road in heavy rain. Much worse, mosques are often located on small roads near market places in villages, as kraton (palace), mosque, market, and inhabitants' area used to be integrated with each other in a historical Javanese settlement.

On entering a mosque, courtesy and a brief enquiry of the mosque history was shown by the researcher, while Indonesian manpower sets up a ladder to take measurements, and drawings of ornaments. The mosque was on-site inspected by measuring, drawings, and photography. Photographs ranged from ornaments in the prayer hall, at the serambi, and outside the building. Among a series of similar ornaments, a few representative examples were chosen.

Drawings were proved to be more suitable for analysis than photographs, despite time-consuming, requiring patience, and hindered by bad weather. This method can enrich a researcher's experience, knowledge of ornaments, and their surroundings, especially in perception which plays a crucial role in analysis of motifs. Finally, data were collected from a short interview, drawing, and photographing, following cordial farewells. In this process, an unexpected thing happened, regardless of the full preparation learned from the pilot study. A group of people irrelevant for the research accompanied the researcher as a form of hospitality; thus the survey occasionally had to stop. Moreover, some mosques were reluctant to admit non-Muslims, though a few enthusiastic religious leaders were welcoming. Some mosques employed uniformed security guards to protect buildings. Muslims at some local mosques showed their suspicion on the researcher. Probably, difficulties of entering mosques could be attributed to the current violence in a given area. In this situation, Indonesian assistants took initiative in communication with mosque leaders. However, once mutual understanding was established between the researcher and mosque leaders, investigations went smoothly, often served with mineral water and sweets.

Interview

Due to lack of material on the research subject, the researcher attempted to get necessary information from Indonesian scholars and professionals in art, architecture, archaeology, design, and history. Four types of interview were conducted with different purposes: (i) Getting general information about Java, by borrowing books at libraries, consulting for samplings, asking recommendations of relevant people for interview, and acquiring permissions to temples and mosques. (ii) In mosques, religious leaders have been better informed on their mosques than literary sources or people at the Department of Religion and other institutes. It is known that Javanese mosques do not always record their history. (iii) Semi-structured but comprehensive interview to identify the origins of motifs in Javanese mosques, when a problem of distinguishing Hindu-Buddhist scrolls or Islamic arabesque had arisen. (iv)

[39] Among four motifs from newly built mosques, tumpal and kala-makara are rejected for analysis, due to a few examples or non-existence. As lotus bud and scroll appeared strongly, they are to be examined.

[40] Prijotomo discusses greatly on ideas and forms between pre-Islamic and Islamic architecture in his book, *Ideas, Forms of Javanese Architecture* (1992).

Reviewing all collected motifs for fear of missing an important point, and verifying written documents to be correct (only held with a few scholars). However, contacting people was occasionally assisted by Indonesians, and during meetings, much encouragement to this research was given.

CHOICE OF THE REPRESENTATIVE[41] SELECTION

Experiments

Concepts are the building blocks of theory; they consist of measures and indicators. Indicator is used for concepts that are less directly quantifiable to represent the concept, while measure refers to things which definitely require to be counted. An indicator is an indirect measure of the presence of a concept. Use of multiple indicators has the advantage of recognizing and dealing with potential problems. In the research proposal, four indicators of line, shape, form (elements of design), and rhythm (principle of design) were suggested in analysing four motifs. However, prior to data analysis, the researcher experimented as much as possible to find the best method of analysis, if one existed. All experiments were not fully pursued, due to the unsuitability for answering the research question, but some were partly used. Here is a short account.

(1) Tracing geometry behind motifs, following Day's (1903) theory whose patterns are basically composed of the geometry. This method was applied to Celtic art by Bain (1996).
(2) Counting numbers of geometric elements: circle/triangle/square in motifs.
(3) Following eye movement in inspecting motifs on Islamic artworks (Papadopoulo 1980).
(4) Using visual pattern recognition (Dodwell 1970, Friedman and Kandel 1999).
(5) Perception of motifs, applying the visual research methods in design (Sanoff 1991).
(6) Using a grid or musical beat to analyse motifs (Thiel 1981).

After the six approaches, both detailed and systematic method was chosen, reconfirming the researcher's original idea of elements and principles of design as a yardstick, given the research topic and the researcher's experience in art and design. Then, how can the best result from collected data be acquired? Two experiments were done: (i) concentrating on a very few examples of each motif and describing their similarities and dissimilarities in depth, used by archaeologists, (ii) finding the mean in the scale between two opposite variables in a given sample, favoured by psychologists.

Larger and Smaller Selections, the Perception of Six Local Indonesians

Perception is the visual intake that stimulates the imagination, and is the mental grasp of objects through the senses, leading to insight, but requiring attention, effort, practice, concentration, and commitment. Arnheim (1974) stresses visual experience as dynamic.

At first, the researcher chose the most representative selection with small numbers (6-8) to examine four motifs on mihrabs where much decoration is present. In this examination, the researcher perceived somehow disappearance of lines, shapes, forms, and rhythms in four motifs, due to carelessness, renovation, and weather over time; thus the analysis might not provide the exact information. As a substitute, a larger selection (45-50) of examples was attempted, acquiring almost the same outcome from the both. The next trial was to compare pre-Islamic motifs to Islamic ones by using percentage, and a problem arose. Unless the number of both examples was equal, this method does not work properly. Collecting the same number from the prehistoric and Hindu-Buddhist periods was another problem, particularly in tumpals, chosen from outside of Java.

In parallel with this, a short test was conducted by three to six local Indonesians who had no artistic training in perception. The reason for doing this was to observe whether their perception corresponded to that of the researcher; thus this result could validate the researcher's analysis. Six to eight different examples from four motifs were displayed to them once for a short time. During this process, they got confused, and had difficulty in answering, probably due to their not being accustomed to perceiving objects. Consequently this further test was stopped. Training in perception is needed for this type of analysis.

Having taken all into consideration, the researcher decided the larger (45-50) selection as representative with both descriptive and calculative methods in the analysis. Each motif is to be perceived many times at constant intervals by the researcher who is trained in art and design, using elements and principles of design as indicators. Observation during the fieldwork was also taken into account.

FOUR INDICATORS: ELEMENTS AND PRINCIPLES OF DESIGN

The researcher has three specific reasons to use elements and principles of design as indicators to answer the research questions. First, they are the basic components in art and architecture, discussed by Greek, Roman, medieval, Renaissance and modern philosophers. In his *Grammar of Ornament* (1856/2001), Owen Jones put forward geometry as general principles for decoration: 'All ornament should be based upon a geometrical construction', praising Alhambra palace built by the Moors.

> … every ornament contains a grammar in itself. Every principle which we can derive from the study of the ornamental art of any other people is not only ever present here, but was by the Moors more universally and truly obeyed.

Second, Islamic ornament is largely composed of geometry, whose background is based on elements and principles of design. Critchlow (1989) discusses a circle as a symbol for the 'origin' and 'end' of geometric forms.

> Islamic art is essentially a way of ennobling matter by means of geometric and floral patterns united by calligraphic forms which embody the word of God as revealed in the sacred book, the Holy Koran (Seyyed Hossein Nasr, cited by Critchlow 1989).

[41] Of the representative selection, if similar examples were found in the same mosque, they were rejected. Representative examples were maximally chosen for analysis.

Third and last, the researcher has been trained in visual art and design, thus using these indicators can provide the best and comprehensive information on this research, propelling a challenge into a new method.

Referring to the indicators, ornaments are based on elements (line, value, shape, form, space, texture, colour) and principles (unity-variety, balance, emphasis, rhythm, proportion, size). Principles of design show the way in which the elements are aesthetically combined to arouse a sensory response. Elements, the raw materials of works of design, are arranged to produce order in composition, supported by principles.

The table below explains how four motifs are to be analysed according to four indicators and five variables. Functions of four motifs are not tested, because all are supposed to be symbolic (Tjandrasasmita 2005[interview]). Balance is also not examined, as the majority of them are balanced in symmetry.

Four motifs, four indicators, and five variables

Motifs	Indicators	Variables
Tumpal	Line	(1) background (2) basic type (3) five further characteristics (4) other elements of design (5) principles of design)
Kala-makara	Shape	same as above
Lotus bud	Form	same as above
Scroll	Rhythm	same as above

Line (Element)

> Without a study of Greek we could not know the meaning of great design, of harmonious lines and masses, of proportion and composition, of thoughtful correctness in figure-drawing, of the pleasant and proper disposition of the materials or motifs of an ornament (Collingwood 1883).

Line consists of an extended point, and its only feature is length. It connects other visual elements, describes edges, forms shapes, and articulates the surfaces of planes. Although line theoretically has only one dimension, it has visible thickness. The character of line, such as bold or tentative, graceful or ragged, is decided by human perception of its length-width proportion, its outline, and its degree of continuity. Line is a creation of the human sense of sight, constructed for simplicity, borrowing Delacroix's (1798-1863) idea of the straight line as 'never occurs in nature; they exist only in the brain of man'.

Despite possessing no actual movement, a line suggests a direction, either one way or in diverse ways. Lines may be divided into straight or curved. A straight line is defined as 'the shortest distance between two given points'. It can be vertical, horizontal or diagonal, and appears stronger and more direct than a curved line. A vertical line is structural, upward, and the strongest, and expresses a state of equilibrium with the force of gravity. A horizontal line represents stability on the ground plane. A diagonal line indicates action, due to its disturbing effect. Horizontal lines create geometric shapes, whereas contour lines decide space, and repeated lines create texture.

Of a curved line, Hogarth (1679-1764) introduces the aesthetic concept of his precise serpentine line as 'line of beauty'. He saw beautifying lines as the ideal sign of artistic craftsmanship. In this context, Riegl (1893) argues that line was the primary tool of the artist, and decorative art was the application of line to solve ornamental problems. The term 'beautiful' was bound up with the idea of organic undulating lines and with the art of classical Greece. Logarithmic spirals enhance the dynamism of the curve.

Lines are associated with the ideas of praise, aspiration, and ascension. Vertical lines increase this feeling, but downward bent lines convey despair. As a language, a line is a most sensitive and vigorous speech for all purposes. Line is used as a vehicle to record nature and human features, appealing to human emotions and evoking sympathies with the life of nature and humanity.

> This upward surge of lines, characteristic of Gothic art, was an element of beauty which at the same time responded to a profoundly appealing feature of medieval mysticism (Aubert 1959).

Shape (Element)

Shape is the outline of a plane figure, or the surface configuration of a form. It is the fundamental means of providing recognition, identification, and categorization for specific figures and forms. The perception of shape depends on the level of visual contrast between the outline which separates a figure from its ground. Positive and negative shapes and their interrelationships are a principle of composition. Positive shapes are the subject matter itself, becoming the centre of interest, while negative shapes are the areas surrounding the positive shape. Although negative shape is not always of equal interest with the positive figure, it is important in providing an illusion of depth. Shapes can be formed by lines, areas of texture, value, and colour. Shape varies from simple circles, triangles, and squares to complex silhouettes of nature and human form. They have both two-and three-dimensional characters. Two-dimensional shapes are bordered by lines, and are perceived as a visual unit distinct from their background, while three-dimensional ones can extend in any perceivable direction, creating forms.

Four categories of shape exist: (i) natural, (ii) geometric, (iii) abstract, and (iv) non-objective. Natural shapes originate from nature and human figures. Geometric shapes arise from man-made construction. Abstract shapes are the outcome of reducing natural ones by stylisation. Non-objective shapes do not originate from any recognizable source. According to the Gestalt psychology school, the mind makes the visual environment simpler, in order to understand it. Given any composition of forms, the mind has a tendency to reduce the image to the simplest and most regular shapes. Originated in Germany in the early 20th century, the school has been most influential in the field of perception. It formulated four laws for establishing a visual field: (i) Proximity, (ii) Similarity, (iii) Continuance, and (iv) Closure.

The Law of Proximity means the relative closeness of units which they are seen together as a new entity. Similarity is the tendency of commonalities in the attributes of separate elements to cause them to be seen as a group. Continuance refers to the trend of similarities in changes of attributes, while Closure deals with our perceptual tendency to group certain visual elements together to establish one simple larger form.

> Thus a shape is never perceived as the form of just one particular thing, but always as that of a kind of thing. Shape is a concept in two different ways: first, because we see every shape as a kind of shape compared what was said about perceptual concepts; second, because each kind of shape is seen as the form of a whole kind of objects (Arnheim 1974).

Shapes can be basic emotional symbols with a powerful impact. A clear, well-defined shape, such as a cross or a key, can generate a universal appeal as a symbol.

Form (Element)

The Greeks seem to be the first people to have been delighted in the pure beauty of form, and constantly reached out after an ideal perfection of form. A form is a perfect combination of all visual elements, themes, moods, techniques, functions, structure, and organization. The elements are balanced, and organized through the use of principles of design to establish harmonious unity in a form. A form has several characteristics, either a recognizable appearance or a particular condition in which something manifests itself. In art and design, the term denotes the formal structure of a work. It is the manner of arranging and coordinating the elements to produce an image. Form is the shape of an area of three-dimensional volume, defined by the lines of its borders. Straight lines make shapes of triangles, squares, and pentagons. Triangles can be part of composing conic and pyramidal forms. On the other hand, curved lines make shapes of circles, ellipses and ovals. Circles create spherical forms.

Forms can be divided into natural and geometric forms, but no clear line can be drawn between them. The difference, however, is that natural forms are representational, while geometric forms are not. Natural forms are mostly of organic or living objects, such as foliage and humans, used in ornament both realistically and conventionalised. When a natural form is simplified to fit its use, it is called 'conventionalised' or 'stylised'.

According to a theory of the 20th century, there are five fundamental geometric forms: sphere, cube, cylinder, cone, and pyramid. They are solid and closed entities that show weight and mass. Primary forms are those whose parts are related to one another in a consistent and orderly manner – symmetrical, steady in their nature. Sphere, cylinder, cone, cube, and pyramid are regular forms. Non-primary are dissimilar, related to one another in an inconsistent way - asymmetrical and more dynamic than primary.

Rhythm (Principle)

> God is light, and light gives beauty to things; essential beauty must be identified with brightness which, together with harmony and rhythm, reflects the image of God (Aubert 1959).
>
> Those ineffable feelings of God's presence and purpose in His creation, that awareness of wholeness and infinitude, manifest in the natural world, and in those patterns and rhythms which govern it, are exemplified in iconic form in the art of calligraphy and illumination, as well as in the abstract disposition of mass, space and surface in architecture (Yeomans 1999).

The word 'rhythm' in Greek means 'to flow'. Long before the Greeks, rhythm was considered the creative principle, both in the manifestations of nature and in a regulated human life. In a world controlled by cruel gods, the Greeks invented a world of the mind, where disaster was expelled and a divine order ruled, demonstrated in the repeated columns in the Parthenon.

In design, rhythm is organized visual movement, built around repetitions of strong and weak design elements. As a means of conveying a feeling, rhythm has a variety of forms, such as sharp, jagged, jerky, irregular, radical, and energetic rhythms. Regular rhythm occurs when the repetition of size, shape, and colour remain the same with constant intervals. Irregular rhythm can add suspense to a work, and increase its interest, caused by the varying size, colour, and shape of units.

Three ways of achieving rhythm are (i) through repetition, (ii) through a progression of design elements, and (iii) by means of a continuous basic line. Repetitive rhythm is marked by a recurrence of patterns, and is the simplest rhythm. Progressive rhythm requires an increase or decrease in shapes, and is stronger than a repetitive rhythm. Continuous rhythm consists of curves, giving a flowing effect. Repetition is one of the most outstanding characteristics of form in nature, creating complex rhythmic passages of pattern. Five kinds of repetition exist: (i) simple regularity of shapes and intervals, (ii) alternation: repetition of two different elements, (iii) inversion: repetition in which the position of a unit is reversed, (iv) irregular recurrence: a chosen shape appearing at irregular intervals or with various sizes, (v) radiation: units fan out from a central point in symmetrical or asymmetrical array.

FIVE VARIABLES TO FOUR MOTIFS

(1) Background

Five aspects (period, geographical area, location in a mosque building, material, attachment) could acquire a more extensive result in continuity of four motifs in Javanese mosques. Period is directly related to the main research question. A comparison of motifs between temples and mosques in the whole Java could show their geographical distribution. Different locations of motifs in a mosque building could reveal whether mihrabs are much embellished in Javanese mosques, compared to those in other Islamic world. Using various materials on motifs could show creativity of local genius.

In general, temples favoured stone, while mosques preferred wood. The term 'attachment' means whether motifs are decorated with other ornaments, such as calligraphy. Chronological three divisions are prehistoric, Hindu-Buddhist, Islamic with transitory (15C-1619), Dutch colonisation (1619-1945), and contemporary which includes renovated/reproduced (1945-to the present day). Geographical three areas are West, Central, and East Java. Three locations are prayer hall, serambi, and outside a mosque building. Three types of material are wood, stone, and other. 'Decorated' or 'not-decorated' is chosen for attachment.

PERIOD Prehistoric: Hindu-Buddhist: Islamic (transitory, Dutch colonisation, renovated/reproduced)			
Area West/ Central/ East	Location Prayer hall/ Serambi/ Outside	Material Wood/ Stone/ Other	Attachment Decorated/ Not-decorated

(2) Basic Type, and (3) Five Further Characteristics

Based on various theories, two categories of each indicator are decided: (i) basic type with subdivisions, and (ii) five further characteristics with their opposites. 'Basic type' means the most representative characteristics in each indicator, while 'five further characteristics' are additional to enrich information on each motif. Accordingly, tumpals are analysed by line, kala-makaras by shape, lotus buds by form, and scrolls by rhythm, accompanying their five further characteristics. Meanings of each characteristic were described as objectively as possible, according to literary sources and the researcher's own view.

Tumpals: Basic Type of Line and Five Further Characteristics

Sub-question 1 is answered through LINE as the most suitable indicator for tumpals. In general, tumpals have straight lines on frames, and curved lines within them.

Basic type of line

Straight			Curved		
Vertical	Horizontal	Diagonal	Circular	Spiral	Undulating

Five further characteristics

Broken/Unbroken	If lines of tumpal do not connect with the starting point, and are repeatedly stopped, they are called 'broken'.
Natural/Geometrical	If lines of tumpal are not stylised or are not composed of circle, triangle, and square in composition, they are called 'natural'.
Inner/Outline	If lines of tumpal do not constitute a boundary, they are called 'inner'. Any lines within the frame are treated as 'inner'.
Short/Long	If lines of tumpal are composed of short lines, they are called 'short'.
Simple/Complicated	If tumpals became stylised by line, they are called 'simple'.

Kala-Makaras: Basic Type of Shape and Five Further Characteristics

Hindu-Buddhist kala-makaras are analysed by SHAPE to answer sub-question 2. A reason for this indicator is that different stylised shapes of kala-makara appeared in Javanese mosques, in accordance with the Islamic art tradition. A comparison of their shapes can produce the most interesting result. Hindu-Buddhist kala-makaras seem to have natural shapes, while a few Islamic ones display a combination of extremely stylised triangular and rectangular shapes.

Basic type of shape

Natural	Geometric				
	Circular	Oval	Triangular	Square	Rectangular

Five further characteristics

Dynamic/Static	If shapes of kala-makara show a movement in different directions, they are called 'dynamic'.
Single/Assorted	If shapes of kala-makara have different styles of shape, such as circle, triangle, and rectangle, they are called 'assorted'.
Illustrating/Abstract	If shapes of kala-makara are composed of natural lines, and express a real image, they are called 'illustrating'.
Smooth/Complicated	If shapes of kala-makara are perceived as jagged and uneven, they are called 'complicated'.
Small/Big	If shapes of kala-makara are made of a big and whole shape, they are called 'big'.

Lotus Buds: Basic Type of Form and Five Further Characteristics

To answer sub-question 3, Hindu-Buddhist lotus buds are analysed by FORM because of their three-dimensional character. In this research, any forms which symbolise 'life' and 'creation' of lotus buds are accepted, such as a jar on roofs or round bases on floors to support pillars in mosques.

Basic type of form

Primary					Non-primary
Cubic	Conic	Spherical	Cylindrical	Pyramidal	

Five further characteristics

Voluminous/Slender	If forms of lotus bud look massive and large, they are called 'voluminous'.
Open/Closed	If forms of lotus bud have open bulbs, or are to be opened, or surrounded by lotus petals, they are called 'open'.
Realistic/Stylised	If forms of lotus bud are constructed in a naturalistic way, they are called 'realistic'.
Dynamic/Static	If forms of lotus bud arouse actions, they are called 'dynamic'.
2-3 dimensional/ 3-dimensional	If forms of lotus bud are attached to other objects, such as walls and sculptures, they are called '2-3 dimensional'.

Scrolls: Basic Type of Rhythm and Five Further Characteristics

Hindu-Buddhist scrolls, analysed by RHYTHM, answer sub-question 4. Selecting rhythm as indicator is the repetition in the motif. Interestingly, scrolls in Javanese temples and mosques bear the same characteristics as Islamic arabesques. They are repetitive, continuous, and harmonious. It is worth investigating how Hindu-Buddhist scrolls combined with Islamic arabesques in ideas and forms.

Basic type of rhythm

Regular			Irregular
Vertical	Horizontal	Diagonal	

Five further characteristics

Repetitive/Non-repetitive	If rhythms of scroll repeat in the same way, they are called 'repetitive'.
Harmonious/Disharmonious	If rhythms of scroll occur regularly in harmony, they are called 'harmonious'.
Single/Multiple	If scroll have one rhythmic style, they are called 'single'.
Strong/Weak	If rhythms of scroll are dynamic, they are called 'strong'.
Continuous/Discontinuous	If rhythms of scroll are not stopped in a given area, they are called 'continuous'.

(4) Other Elements of Design: Space, Colour, Value, and Texture

Among seven elements, the most relevant is selected to each motif. Tumpals are analysed by space; kala-makaras by colour; lotus buds by value; and scrolls by texture.

Motif	Other elements			
	Space	Colour	Value	Texture
Tumpal	Narrow/Wide	x	x	x
Kala-makara	x	Original/Coloured	x	x
Lotus bud	x	x	Light/Dark	x
Scroll	x	x	x	Smooth/Rough
Space	if the space between adjacent lines is broad in tumpals, they are called 'wide'.			
Colour	if kala-makaras are made of natural materials, and not coloured/painted, they are called 'original'.			
Value	if lotus buds do not have layers; thus no darkness is created on their surfaces, they are called 'light'.			
Texture	if scrolls undulate regularly, arousing evenness, they are called 'smooth'.			

Space is the medium in which shapes exist. It has three characteristics of pictorial, illusionistic, and actual. Pictorial space is the outcome of artistic work. Illusionistic space creates perceptual illusion through various devices, while actual space deals with the three-dimensional work.

Colour evokes the greatest emotional response, suggesting a mood and depth of experience. Colour is both art and science. Physicists discuss abstract theories of colour in relation to light and optical principles involved in colour sensation; chemists formulate rules for blending colours; and psychologists are preoccupied with emotional responses to colours.

Value is the degree of lightness or darkness of an object. Light values appear to expand and approach, while dark values appear to contract and recede, regardless of their size or shape.

Texture refers to the surface of any object, natural or manufactured. It can be perceived in two different ways, visual and tactile. Tactile sensing happens through touch, and is connected to our experience. Variations on smooth or uneven surfaces produce different visual textures.

(4) Other Principles of Design: Emphasis, Unity-Variety, Size, and Proportion

Among six principles, the most significant is applied to each motif. Tumpals are tested by emphasis; kala-makaras by unity-variety; lotus buds by size; and scrolls by proportion.

Motif	Other principles			
	Emphasis	Unity-Variety	Size	Proportion
Tumpal	Dominant/Subordinate	x	x	x
Kala-makara	x	Separate/Unified	x	x
Lotus bud	x	x	Small/Big	x
Scroll	x	x	x	Progressive/Non-progressive
Emphasis	If lines are more important than other elements in composition of tumpals, they are called 'dominant'.			
Unity-Variety	if shapes of kala-makaras are not separated each other, they are called 'unified'.			
Size	if lotus buds are small in reality, they are called 'small'.			
Proportion	if the same type of rhythm recurs by increase, they are called 'progressive'.			

Emphasis is created by visual importance through selective stress. It involves dominance and subordination. Dominance is the effect of superior value against subordination of something of inferior importance. Reinforced through repetition, proportion, simplification, and contrast, emphasis can also be achieved by a group, or the isolation of a feature.

Unity-Variety: According to da Vinci (1452-1519), 'Every part is disposed to unite with the whole that it may thereby escape its own incompleteness'. Each part should be essential itself, and yet add to the total effect. Variety means different qualities through contrast. Unity and variety are interdependent in maintaining balance.

Size describes the relative scale of a given element in relation to other elements and the composition as a whole. It is perceived in many ways, as expressing symbolic meanings, attracting attention, and endowing dramatic emphasis. Big size means power.

Proportion refers to the relationship of a shape to a total unit. The Greeks' search for correct proportions is reflected in architecture by creation of balance and harmony. Their geometric plan of the 'Golden Mean' established a canon of perfect proportion.

SCALED VALUE MODE, AND TOTAL NUMBERS IN FOUR MOTIFS

This section introduces an overall view of analysing four motifs to examine their continuity and influence in Javanese mosque ornamentation. Specifically, two stages are applied for basic type and five further characteristics: (i) verifying whether a given characteristic in a given type is present in examples of each motif, and (ii) counting the frequencies of these characteristics by scaled values, modes, and total numbers.

For example, in tumpals, this assessment is demonstrated on a scale of characteristics of predominant lines from many to the absence of the characteristics, none (see below). Each point on the scale is given a numerical value (many=4, none=1). In other words, each of tumpals is assessed and tabulated within a chronological group. The results drawn from this tabulation are

summarised in the same table, and present modal value of the characteristics in each group – that is the most frequently occurring value. They also provide total numbers in each group. Scaled values, modes, and total numbers are yardsticks for continuity of tumpals between the pre-Islamic and Islamic periods.

Scaled value in tumpals

Many(4) Some(3) Few(2) None(1) **x**

Limitations of The Study

In prior to a short summary, the limitation of the study should be clarified. Preface explained the scope of the research. Chronologically, Javanese mosque ornamentation was covered from the 15th century to the present day, including the prehistoric and Hindu-Buddhist periods. The geographical area was limited to Java, where all the different cultures have been practised. The starting point of this research was pre-Islamic ornament in Javanese mosques with consideration of both Hindu-Buddhist and Islamic ornament traditions. Four motifs examined were tumpal, kala-makara, lotus bud, and scroll, which appeared frequently both in temples and mosques. The research concerned the degree of continuity and influence of four pre-Islamic motifs in Javanese mosque ornamentation. Use of indicators for each motif was also limited: line, shape, form, rhythm.

This research will use many different methods, mainly by perception. It is a combination of (i) the researcher's informed judgment based on training in art and design, (ii) observations during the fieldwork, (iii) general rules on elements and principles of design, according to literary sources, and (iv) respect of Indonesian cultural heritage. The extraordinary difficulty in this research lay in the hindrance of the lack of literary sources on the subject matter, as Indonesian Islamic ornaments seemed to be extremely marginalised in the research field among the West and Indonesia herself, which encouraged the researcher to pursue creative and innovative methods in tackling the research questions.

This research is likely to be a pioneer work, according to comments by the 20 Indonesian specialists in art, architecture, archaeology, design, and history. The research itself can be put forward as a proposition to stimulate further studies, in order to fill in the gaps in Javanese history through investigation of ornaments.

Of course, it has to be admitted that the perception and experiences of the researcher colour the interpretation of the primary data. Subsequently, personal arguments may produce a contentious conclusion, but this can be strength as well, because creative thinking in solving the questions can give a vast space to new possibilities in research. It has to be stressed that the beauty of ornament depends upon one's own free thoughts, perceived individually, in relation to one's own cultural background and experience. It can clearly be seen in the principles appropriate to Hindu-Buddhist or Islamic ornaments. Hindu-Buddhist motifs stress symbolism overall, while Islamic ornaments underline beauty, based on mathematical calculations in geometry.

Therefore, the researcher feels confident and proud of this research, because many possible methods will be intensively and extensively attempted in analysing four motifs from various angles. The methods which will be implemented in this research are believed to provide an effective solution, thus the findings can be validated with full support. In other words, five aspects (background, basic type of indicator and its subdivisions, five further characteristics, elements and principles of designs) will be thoroughly and objectively examined to each motif various times at constant intervals, guided by the researcher's attitudes hopefully of non-bias, conscience, commitment, and discipline with passion.

Summary

This chapter has provided practical information, reasons for choosing four motifs, indicators, variables, and different methods of answering the research question. For collecting data, literature review, empirical work, and interviews were applied, and in choosing the 30 mosques, a purposive sample was done. A larger (45-50) selection of examples in each motif explained the procedure to be taken. Moreover, various experiments and attempts to the research questions were noted down. In data analysis, the researcher's perception and observations were added to literary sources. Overall, four motifs are to be tested according to five aspects. Background has period, geographical area, location in a mosque building, material, and attachment. Four indicators are line, shape, form, and rhythm. Prehistoric tumpals are to be examined by line, Hindu-Buddhist kala-makaras, lotus buds, and scrolls are by shape, form, and rhythm respectively. In examining motifs, two stages are (i) verifying the presence of a given characteristic in each indicator, and (ii) finding its frequency by scaled value, mode, and total number. This extensive analysis anticipates continuity and changes of four motifs over time in accord to orthodox Islamic ornament.

References in alphabetical order: Alexander 1965; Arnheim 1974; Blaiki 1991; Brommer 1975; Bryman 2003; Burke 1955; Ching 1996; Crane 1900; Denzin 1978; Gatto 1975; Gray 2004; Grillo 1960; Hamlin 1916; Handell & Handell 1995; Holt 1989; Krommenhoek 1975; Olin 1992; Pole and Lompard 2002; Robson 2002; Seale 1999; Stoops 1983; Thiel 1981

CHAPTER VII

Transcendence of Pre-Islamic Tumpals via Javanese Temples to Mosques

If you stroll around Javanese temples and mosques, you will be amazed by a beautiful triangular shape, called "tumpal". If you by chance have a glimpse of a lion at the entrance of Kalasan temple, PLEASE be attentive, because his job is to inspect every visitor, in order to protect the sanctuary of his superior gods and goddesses. But PLEASE be gentle to him, otherwise you will lose an opportunity to see prestigious tumpals on his shoulder; they exist not only for signifying the Cosmos Mountain, Meru, where gods and goddesses reside, but they also honour his greatness as the king of the animal world.

This chapter answers sub-question 1: How has the tumpal, the popular prehistoric motif in Indonesia, become part of Javanese mosque ornamentation, and how has it been developed and used within the Islamic period? To start with, a few examples of tumpals

prove their continuity over time. Although a broad analysis of background is carried out in tumpals, line is the main indicator for answering the question, along with five further characteristics and other elements and principles of design. A brief account of tumpals on mihrabs accompanies a summary and conclusions.

The 48 tumpals: 1-6. prehistoric, 7-9. kalasan (9C), 10. east Java (12-15C), 11. panataran (1147-1454), 12. djago (1268), 13-15. east Java (12-15C), 16. tralaja grave (15C), 17. pajlagrahan (1452), 18-21. agung demak (1479), 22. mearh panjunan (1480), 23-24. sunan giri (1485), 25-26. astana mantingan (1559), 27-28. sendang duwur (1561), 29-30. agung mataram (1568), 31-32. agung solo (1757), 33. al anwar angke (1761), 34-35. agung yogya (1773), 36. carita labuan (1883-93), 37. agung demak* (1479), 38-39. sunan giri* (1485), 40. menara kudus* (1573), 41-46. agung mataram* (1568-1601), 47-48. agung yogya* (1773) *mosques built before the contemporary period

PREHISTORIC TUMPALS IN JAVANESE TEMPLES AND MOSQUES

48 representative tumpals of the 80 surveyed were chosen and arranged by chronology and geographical area. As good examples of prehistoric tumpals in Java were hard to find, six Dayak ones in Borneo were introduced (Pepin Press 1998). Despite unclear dates of their origins, the indications are that they are prehistoric, due to the line composition and bamboo as material in half of them. Hindu-Buddhist and Islamic tumpals were taken directly from temples, the Indonesian Archaeology Museum in Mojokerto, East Java, and mosques. All nine Hindu-Buddhist tumpals are included here, but 33 of the 65 Islamic ones were selected, owing to similar design from the same mosque.

A tumpal, a decorated triangle, is a common ornament. It was originated in neolithic and megalithic times in prehistoric Indonesia, and continued in Hindu-Buddhist temples. Although uncertainty of its origin as a human figure or a stylised bamboo shoot, the motif was used for a symbol, due to its magic character, or because it conveyed an idea of fertility. It can represent the holy worship of the Cosmos Mountain, Meru, where gods reside. Many types and variations of tumpal were found, but the main shape is triangular, facing either downwards or upwards. Another type, called 'antefix', is also present in temples, but since it combines of a triangle and a rectangle, Tjandrasasmita (2005) recommends it as a variant of tumpal.

A commoness could be traced in (i) mystical and symbolic connotation (T3/T14/T40) and (ii) aesthetic and decorative beauty (T9/T25/T41). They appeared across time, scattered over the whole of Indonesia on fishing baskets and in temples and mosques. They are made of wood, stone, or other materials, and some are richly decorated[42]. The majority have both straight and curved lines, balanced in symmetry. After Dutch colonisation of Java, they are coloured by paint, or their material itself have colours.

Based on these facts, megalithic tumpals on fishing baskets travelled to sacred Hindu-Buddhist temples, and finally settled down in sacred Javanese mosques, underlining symbolism, rather than beauty.

Group 1	T3-Prehistoric	T8-Kalasan temple	T37-Agung Demak
Group 2	T2-Prehistoric	T11-Panataran temple	T34-Agung Yogya

For continuity, a preliminary visual assessment suggests two groups. The first (T3/T8/T37) is similarly curved with spirals, despite dissimilar shapes, pointing either downwards or upwards. In material, prehistoric T3 could be bamboo, and Hindu-Buddhist T8 (Kalasan) and Islamic T37 (Agung Demak) of stone. Interestingly, a reproduced T37 inherited a prehistoric design. The second (T2/T11/T34) shares a border in common. Prehistoric T2 is edged on zigzagged diagonal lines, while Hindu-Buddhist T11 (Panataran) and Islamic T34 (Agung Yogya) are enclosed with straight diagonal lines. As T34 was made during Dutch colonisation, it is coloured.

BACKGROUND

Between the Pre-Islamic and Islamic

Of the 48 tumpals, six (T1-T6) are prehistoric, nine (T7-T15) Hindu-Buddhist, and 33 (T16-T48) Islamic. All prehistoric tumpals came probably from outside Java. Of Hindu-Buddhist, three are from Central Java, and six from East Java. Of Islamic, 22 are located in Central Java, four in West Java, and seven in East Java. Tumpals were mostly found in Central Java, possibly due to the first Islamic Demak and the foundation of Mataram a century later. T16, the earliest Islamic tumpal in the sample, is on a Muslim's grave at Tralaja near the capital of Majapahit in East Java, suggesting the Muslim residence inside the Hindu kingdom, and echoing a pre-Islamic motif in Islamic ornamentation already in the 15th century. The materials of all prehistoric tumpals could be bamboo, and all Hindu-Buddhist of stone. 16 Islamic are made of wood, eight of stone, and the rest of others such as tile which indicates European influence on mosques after Dutch colonisation. Decoration was shown in two prehistoric, four Hindu-Buddhist and 19 Islamic tumpals, largely adorned with scrolls within their frames.

Tumpals: 48		P: 6	HB: 9	I: 33		
				IT: 15	ID: 6	IR:12
Area	West 4/ **Central 25/** East:13		3/6	2/8/5	2/4/0	0/10/2
Location	Prayer hall 3/ Serambi 9/ **Outside 21**			1/5/9	1/4/1	1/0/11
Material	**Wood 22/** Stone 17/ Other 9	6	0/9/0	5/12/3	6/0/0	5/1/6
Attachment	**Decorated 25/** Not-decorated 23	2/4	4/5	6/9	5/1	8/4

Prehistoric(P)=neolithic/megalithic, Hindu-Buddhist (HB:8-15c), Islamic (I:15c-to the present): transitory (IT:15c-1619), Dutch colonisation (ID:1619-1945), renovated/reproduced (IR:1945-to the present)

Within the Islamic

Of the 33 Islamic tumpals, 15 are transitory, six are from Dutch colonisation, and 12 are renovated/reproduced. Of the transitory, two are from West Java, eight from Central Java, and five from East Java. Only one tumpal appeared in the prayer hall, five in the serambi, and nine outside a mosque building, mainly on graves. A question arises. Is the presence of a large number of tumpals on

[42] 'Decoration' has two meanings: (i) decorative motifs - leaves, flowers, scrolls - are part of tumpal, composed of naturalistic lines (T5-T6/T11-T12/T16/T19), (ii) tumpals are perceived as decorative, regardless of any types of line on their composition (T7/T9/T23).

graves, due to the survival of remnants of the animistic Cosmos Mountain concept, in which dead souls returned to Meru? Five tumpals are made of wood, seven of stone, and three of other. Six are embellished, compared to nine without decoration.

During the Dutch colonisation era, two tumpals were found in West Java and the rest in Central Java. None was from East Java. One tumpal appeared in the prayer hall, and four in the serambi, and one outside. Frequent use of tumpals in the serambi can be attributed to Mataram's activity in erecting Agung Mataram (1568-1601) and Agung Yogya (1773), decorating their serambis with beautiful tumpals to show the greatness of the kingdom. All tumpals are made of wood, mainly adorned.

Of the 12 renovated/reproduced, most were from Central Java, located outside mosques. None were shown in West Java and the serambi. Half of tumpals are made of tile, glass, and plaster with scroll decoration inside frames. They display a variety of design. T37 (Agung Demak) retained Hindu-Buddhist tumpal by spiral and undulating lines. T40 (Menara Kudus) repeats the Cosmos Mountain in an extremely stylised triangular shape, composed of 10 rectangles in rows of 4-3-2-1, and each rectangle is filled with a circle, triangles, and a diamond. Materials are tile and glass in many colours. If it were not placed on the sacred mihrab, it could be hardly perceived as a tumpal. T41 (Agung Mataram), an antefix, has natural and geometrical lines, while T48 (Agung Yogya) has stylised.

Summary and Conclusion

Preferred background	Pre-Islamic & Islamic			Islamic		
	P	HB	I	IT	ID	IR
Area		East Java	Central Java	Central Java	Central Java	Central Java
Location			Outside	Outside	Serambi	Outside
Material	Wood	Stone	Wood	Stone	Wood	Other
Attachment	Not-decorated	Not-decorated	Decorated	Not-decorated	Decorated	Decorated

Geographic Area: Islamic tumpals in Central Java continued mainly from Hindu-Buddhist ones in East Java. The reasons could be (i) the earliest Islamic Demak in Central Java conquered Hindu Majapahit in East Java, and (ii) the foundation of the greatest Islamic Mataram and others here later.

Location in a mosque building: The majority of Islamic tumpals appeared outside mosques, particularly on graves, emphasising syncretic culture of the ancestor worship among Javanese Muslims.

Material: Wood, often used in prehistoric tumpals, did not influence Hindu-Buddhist ones. Stone replaced as the most suitable for enhancing the beauty of temples. In transfer to wooden mosques, other than bamboo, tumpals followed this. New materials were tried in renovated/reproduced tumpals.

Attachment: A tradition of not decorating prehistoric tumpals continued in the Hindu-Buddhist period, but was no longer influential in Islamic tumpals. It could be the influence of incoming orthodox Islamic arabesque, geometry, and calligraphy. European ornaments such as palmette (pseudo-leaf) and flowers also took part.

However, the appearance of prehistoric tumpals in mosques, particularly in renovated/reproduced ones, can prove the continuity in idea and form, expressing 'three concepts'[43] through a triangular shape.

The Nature of Lines

> Visual perception is seeing, feeling, and expressing. Visual perception is related to one's personal feelings and preferences to one's memory and accumulated past experiences (Handell & Handell 1995).

This section underlines the aim and procedure of analysis, based on the researcher's personal perception and observation. Perception may vary between individuals, and readers may not fully agree with the researcher. However, the aim tries to facilitate constant comparison of motifs between two periods.

In fact, a broad division of straight/curved lines in tumpals can be enough, but in a detailed examination, different definitions had to be intended[44], in order to enrich similarities/dissimilarities between each tumpal. For example, short, much curved, zigzag lines are considered 'short', according to the researcher, while others regard them as 'long'. Moreover, it should be considered that lines in tumpals were disappeared and deteriorated, caused by natural weathering or other circumstances over history.

Consequently, this research is not based on a purely scientific method; instead it combines some objective measures with subjective but informed judgement. It investigates a trend to continuity and influence from prehistoric tumpals via the Hindu-Buddhist to Islamic periods, created by the local genius. It is an amalgamation of (i) researcher's informed judgment through training in art and design, (ii) observation during the fieldwork, (iii) literature on elements and principles of design, and (iv) respect to Indonesian cultural heritage. Considering these, this analysis can enhance understanding of tumpals across time and space. This aim also applies to other motifs: kala-makara, lotus bud, scroll.

Basic Type of Line and Its Subdivisions

To answer sub-question 1 (How has the tumpal, the popular prehistoric motif in Indonesia, become part of Javanese mosque ornamentation, and how has it been developed and used within the Islamic period?) the 48 tumpals are assessed according to their characteristics with respect to lines: (i) presence of each characteristic, and (ii) frequency of lines, due to different amounts of lines in tumpals. This assessment is demonstrated on a scale from predominant lines to their absence. Each tumpal is given a scaled value (many=4, none=1). The result presents modal value of the characteristics in each group. Total numbers collect all scaled values to

[43] 'Three concepts' connect to a triangular shape of the Cosmos Mountain. In Hindu-Buddhism, they represent 'underworld/world/heaven'. Javanese Islam adopted this idea into a three-tiered roof of a mosque, signifying three ways to be a good Muslim: faith, charity, submission.

[44] An intentional definition implies a specific meaning, of which the researcher developed the basic definitions of elements and principles of designs further, based on literary sources and own view.

compare between different types of line. Modes, the most frequently occurring value, do not necessary correspond to total numbers. They can be none when total numbers are high. Among the maximal and minimal use of lines, more than 20 are many, 6- 20 some, under 6 few.

Straight/Curved

Basic type of line can be divided into straight and curved. Three examples are initially assessed. In this analysis, curved includes any lines except straight. Prehistoric T1 and Hindu-Buddhist T7 (Kalasan temple) have only straight or curved respectively, Islamic T21 (Agung Demak) has both. As T1 and T7 have many lines.

T1 (prehistoric) many straight	T1 (Kalasan temple) many curved	T21 (Agung Demak) 19 straight 16 curved

PRESENCE: Of the 48 tumpals, 42 have straight and 47 curved. Of the straight, six of each are prehistoric and Hindu-Buddhist, and 30 Islamic. All tumpals are curved, except for T1. Both types are very common between three periods.

FREQUENCY: Although straight are more in prehistoric tumpals, curved are significant overall. Their less frequency was in Islamic transitory T17-T18. Almost the equal use of both types - straight in frames and curved inside - shows in renovated/reproduced T40.

Modes and total numbers+: straight/curved[45]

Prehistoric: Curved (mode: many). Total numbers reveal almost no difference between two types. Hindu-Buddhist: Curved (mode: many). Total numbers prove it, and show big difference between two types. Islamic: Curved (modes: some-many). Total numbers reveal slight difference between two types, except renovated/reproduced tumpals.

CONTINUITY/INFLUENCE: Pre-Islamic tumpals are continuous and influential between temples and mosques by basic type, especially curved, underlining Javanese cultural heritage.

Vertical/Horizontal/Diagonal of the Straight

Straight lines can be subdivided into vertical, horizontal, and diagonal. Except for T7-T9, T22, T26, T31, all display straight. Sloped lines are treated as diagonal. Continuous zigzag are counted as one line. Prehistoric T4, Hindu-Buddhist T14 (East Javanese temple) and Islamic T47 (Agung Yogya) have two or three types of line. T4 has few horizontal and some diagonal, T14 few of all types, T47 horizontal and diagonal as few and some respectively.

PRESENCE: Of the 42 straight, 20 are vertical, 38 horizontal, and 23 diagonal. Of the vertical, one tumpal is prehistoric, four Hindu-Buddhist, and 15 Islamic. Of the horizontal, three are prehistoric, six Hindu-Buddhist, and 29 Islamic. Five prehistoric, four Hindu-Buddhist, and 14 Islamic tumpals have diagonal. All types are used, but horizontal are the most common across time. Prehistoric tumpals had more diagonal than almost the equal distribution of vertical, horizontal, and diagonal in Hindu-Buddhist ones. Islamic tumpals favoured horizontal.

FREQUENCY: All types are very infrequent. Diagonal, often used in prehistoric tumpals, fell in the Hindu-Buddhist period, despite sporadic appearances in the Islamic period, such as T40 (Menara Kudus) whose composition is triangles and diamonds from diagonal. Hardly used vertical in prehistoric tumpals almost disappeared in the next periods, but showed in renovated/reproduced tumpals. Horizontal continued, almost full in the Islamic period.

CONTINUITY/INFLUENCE: Prehistoric tumpals continued to temples and mosques by horizontal largely, and other lines partially. Their continuity and influence on mosque ornamentation seem not to be constant and strong by subdivision of straight lines.

Circular/Spiral/Undulating of the Curved

Curved lines can be subdivided into circular, spiral, and undulating. All tumpals have curved except for T1. In this analysis, 'circular' implies circles or part of a circle. A prehistoric T2 has circular, while Hindu-Buddhist T8 (Kalasan temple) and Islamic T26 (Astana Mantingan) display spiral and undulating. T2 has many half circles inside the frame, T8 many spirals and few undulating, T26 with some spiral and undulating.

PRESENCE: Of the 47 curved, 16 are circular, 31 spiral, and 43 undulating. Of the circular, one is prehistoric and 15 Islamic. No Hindu-Buddhist tumpals display circular. Of the spiral, one tumpal is prehistoric, six Hindu-Buddhist and 24 Islamic. Three prehistoric, eight Hindu-Buddhist, and 32 Islamic tumpals have undulating. All lines are present across three periods, but undulating are the most common.

FREQUENCY: Undulating continued mostly across time. Used somewhat in prehistoric tumpals, they became vogue during the Hindu-Buddhist period. Simple undulating in T17 (Pajlagrahan) are made for narrow space on a door frame in the serambi. Rarely used in prehistoric times, circular evolved in Hindu-Buddhist tumpals, but reappeared sporadically in the next period. Only T2 (Prehistoric) and T40 (Menara Kudus) are full of circular. Seldom shown prehistoric spirals increased in Hindu-Buddhist tumpals, and continued further, despite absence in T17-T18 or T38-T40.

CONTINUITY/INFLUENCE: Undulating in prehistoric tumpals continued constantly in temples and mosques. Their influence is rather strong by subdivision of curved.

Conclusion

Straight/Curved: In prehistoric tumpals, straight were slightly predominant. Curved became frequent in the Hindu-Buddhist and Islamic periods. Equal use of both types was seen in renovated/reproduced tumpals during the Islamic contemporary. Continuity of pre-Islamic tumpals in Javanese mosque ornamentation tended to be constant and influential by curved.

[45] T1-T6=prehistoric; T7-9=kalasan; T10, T13-T15=east Javanese; T11=panataran; T12=djago; T16=tralaja Muslim grave; T17=pajlagrahan; T18-T21, T37=agung demak; T22=merah panjunan; T23-T24, T38-T39=sunan giri; T25-T26=astana mantingan; T27-T28=sendang duwur; T29-T30, T41-T46=agung mataram; T31-T32=agung solo; T33=al anwar angke; T34-T35, T47-T48=agung yogya; T36=carita labuan; T40=menara kudus

Vertical/Horizontal/Diagonal of the Straight: No clear and direct relation could be made between these lines across three periods. Popular diagonal in prehistoric tumpals were not influential, instead, horizontal connected the Hindu-Buddhist and Islamic periods. Continuity of pre-Islamic tumpals in Javanese mosques seemed to be neither consistent nor significant by subdivisions.
Circular/Spiral/Undulating of the Curved: Undulating in prehistoric and Hindu-Buddhist tumpals influenced Islamic ones, marking strong continuity in mosque ornamentation. An assumption can be made. Undulating highlight a symbolic connotation, rather than beauty of a triangular shape, composed of straight lines. They represent the Cosmos Mountain, three worlds in Hindu-Buddhism, and three ways to approach Allah.

On Mihrabs

The sacredness of Javanese mihrabs as the most significant place for both symbolism and aesthetics were already discussed. Mystical Sufis adopted the sacredness of pre-Islamic art traditions into their mosques, creating them sacred, and consequently, mihrab was not exceptional. Mihrab, as indicator of the building's orientation towards Mecca, symbolises a gateway to Paradise.

Moreover, since the religious leader leads the congregation in prayer, mihrab is lavishly embellished in general, although the *hadith* warns that luxurious decorations can disturb Muslim prayers. Ornamenting mihrabs was done in various ways, according to periods and places. Even the absence of ornaments can highly visualise their surroundings.

The commonness in Javanese mihrab ornamentation can be attributed to *walis* (saints) who participated in constructing the earliest mosques, moving from area to area, in parallel with the spread of Islam. However, based on the number which appeared on mihrabs, tumpals were not greatly favoured. This also suggests that Javanese mihrabs are not luxurious, instead they express simplicity. Two tumpals can illustrate mihrab ornamentation in Java. Both mosques bearing them belong to the transitory period. T22 (Merah Panjunan, West Java, 1480) is original, and are made of plaster, while T40 (Menara Kudus, Central Java, 1537) is newly made, and coloured on glazed tile and glass. Chronologically different, T22 has a diamond, and is composed of natural lines. T40 shows a triangular, combined of 10 rectangles with extremely geometrised lines. In appearance, no common feature can be seen, but strong symbolic meaning of the Cosmos Mountain connects them.

Conclusion

Background

As prehistoric tumpals were from outside Java, a comparison between Hindu-Buddhist and Islamic one was done. Hindu-Buddhist stone tumpals without decoration were predominant in East Java, while Islamic wooden decorative ones were common in Central Java. Within the Islamic period, the majority of tumpals came from Central Java. In the transitory, they appeared outside mosques, made of stone without decoration. During Dutch colonisation of Java, they appeared in the serambi, made of wood with decoration. The tendency continued in renovated/reproduced tumpals except taking other materials. Islamic tumpals in Central Java mainly continued traditions from Hindu-Buddhist ones in East Java, but inherited wood from prehistoric tumpals. And frequent appearance of tumpals in contemporary mosques, particularly in renovated ones, proves the continuity of pre-Islamic tumpals in Javanese mosques.

Basic Type of Line and Its Subdivisions

Straight/Curved: Both types were present in prehistoric times, but curved dominated in the Hindu-Buddhist and Islamic periods. Continuity of pre-Islamic tumpals in mosques tended to be constant and influential, by the basic type, especially through curved.
Vertical/Horizontal/Diagonal of the Straight: No direct relation between different lines was shown across time. Despite popularity of diagonal in prehistoric times, horizontal connected the Hindu-Buddhist and Islamic periods. Continuity of pre-Islamic tumpals appeared to be neither consistent nor significant by subdivision of the straight.
Circular/Spiral/Undulating of the Curved: Although undulating in prehistoric times continued to the next period, Hindu-Buddhist undulating influenced Islamic tumpals significantly. Continuity of pre-Islamic tumpals is strong, by subdivision of the curved.
In short, prehistoric tumpals did not affect Javanese mosques. Rather, a relationship was close between the Hindu-Buddhist and Islamic periods by curved, especially undulating.

All the findings testify that continuity of pre-Islamic tumpals into Javanese mosque ornamentation occurred in five aspects. Influences were neither very significant nor weak. Tumpals, born on fishing baskets of an anonymous fisher in prehistoric times, transcended to sacred sanctuaries under the auspices of Hindu-Buddhist gods and goddesses many centuries later. Another epoch later, they were sited in sacred Javanese mosques as one of the prestigious ornaments. If they had not represented the holy worship of the Cosmos Mountain where gods and goddesses reside, how could their destiny be so miraculously blessed? The indebtedness goes to Javanese Muslims who love their cultural inheritance.

Chapter VIII

Metamorphosis of Pre-Islamic Kala-Makaras from Temple to Mosque Ornamentation

A Javanese term 'Bhinneka Tunggal Ika' approves its meaning of 'unity in diversity' in temple and mosque ornamentation. When visual pleasure in beautiful tumpals is accumulated, the next surprise is waiting any wanderer at the entrance of Borobodur temple or in Agung Mataram mosque. It is a living figure of kala-makara, a combination of a kala head, and a makara created from a fish and the trunk of an elephant. In the labyrinth of symbolic and aesthetic surroundings, the wanderer had to negotiate with the kala-makara for a free pass into their sanctuaries.

This chapter analyses kala-makara motifs by shape, in order to answer sub-question 2: The *hadith*, the sayings of the Prophet, prohibits living figures being depicted in art. Why therefore has the kala-makara, a favourite animal motif in Hindu-Buddhist temples, been adapted into Javanese mosque ornamentation, and how has it been used in Javanese mosques over time?

A few examples of kala-makaras establish for continuity across pre-Islamic and Islamic periods. A detailed examination on them is undertaken by background, basic type of shape, five further characteristics. To trace other influences, colour and unity-variety of

element and principle of design are also tested. Finally, kala-makaras on mihrabs are observed, accompanying a summary and conclusion. From this chapter onwards, a term 'pre-Islamic' refers to 'Hindu-Buddhist'.

The 45 kala-makaras: 1-3. borobodur (8C), 4-6. prambanan (8-9C), 7. panataran (1147-1454), 8. singasari (12C), 9. djago (1268), 10. central Java (8-9C), 12. tralaja grave (15C), 13. agung demak (1479), 14-15. merah panjunan (1480), 16-19. agung kasepuhan (1498), 20, kasunyatan (1522-70), 21-22. sunan kalijaga (1533), 23. sunan dradjat (c.1561), 24. agung mataram (1568-1601), 25. kanari (1596-1651), 26. jami kanoman (1679), 27-28. al anwar angke (1761), 29. mukarmah bandan (1789-1809), 30. kampong nembol (1880), 31-32. al mangkunegara (1878-1918), 33. carita labuan (1883-93), 34. raya cipaganti (1933), 35. merah panjunan*(1480), 36. kasunyatan*(1522-70), 37. al marunda* (1527), 38. sendang duwur* (1561), 39. al makmur jipang* (1561-77), 40. agung mataram* (1568-1601), 41. kanari* (1596-1651), 42. al mansyur sawah lio* (1717), 43. hidayatullah* (1750), 44-45. carita labuan* (1883-93) *mosques built before the contemporary period

HINDU-BUDDHIST KALA-MAKARAS IN TEMPLES AND MOSQUES

45 kala-makaras among the surveyed 55 were chosen and arranged by chronology and geographical area. Five Hindu-Buddhist and all 34 (except for one) Islamic kala-makaras were directly taken from temples, the Indonesian Archaeology Museum in Mojokerto, East Java, and mosques. The rest of Hindu-Buddhist kala-makaras were found in 'Indonesian Heritage: Architecture' (Tjahjono 1998) and Klokke's (2000) drawings. In selecting the sample, similar kala-makaras within the same period were rejected.

Kala-makara was frequently found in temples. With human face or demon's head, kala appears over an arched gate of a temple, while a pair of curved makaras terminates outward at the bottom of a gatepost. A makara, an imaginary animal with the shape of a fish and the trunk of an elephant, was introduced during Hinduisation, the same as kala. Nevertheless, Subarna (2005) insists the existence of the similar form of kala in prehistoric times in Indonesia.

Between Central and East Javanese kalas, the former has no lower jaw, while the latter has a full face with a jaw. In Indian mythology, kala-makara represents the holy Cosmos Mountain, the abode of gods, and expels demonic influence from temples as protector. Kala is a symbol of the celestial element, and makara is the watery element in creation. As combined, they form duality and totality. Many types and variations of kala-makara were found during the researcher's fieldwork, but the main shape is a simple rectangle or a combination of rectangles and triangles in temples, and ovals in mosques. Interestingly, their shapes changed in transfer from temples to mosques, often simplified, probably caused by the prohibition on depicting living figures, according to the *hadith*. Normally, on mihrabs, kala sits on the top of a curved arch, accompanying makaras on each side of the bottom, balanced in symmetry. One wonders, if they were not living animals, they could smoothly continue anywhere without conflict against Islamic art tradition. Shifting natural shapes of Hindu-Buddhist kala-makaras into geometric of Islamic ones was unavoidable.

Emersion of kala-makaras in mosques (Vogler 1949)

Despite stylisation, the commonness could be traced between them in (i) mystical and symbolic connotation (K1/K12), and (ii) aesthetic and decorative beauty (K2/K24). They appeared all the time, spread in temples and mosques over the whole of Indonesia. They are made of stone, wood, and other materials such as brick, plaster and tile, sometimes adorned with scrolls. Even, they are likely coloured after Dutch colonisation.

G1	K2-Borobodur temple	K35-Merah Panjunan	K44-Caringin Labuan
G2	K1-Borobodur temple	K10-Central Javanese temple	K34-Raya Cipaganti
G3	K6-Prambanan temple	K40-Agung Mataram	
G4	K13-Agung Demak	K28-Al Anwar Angke	K31-Al Wustho Mangkunegara

For continuity, a preliminary visual assessment suggests four groups. The first (K2/K35/K44) shares arched shapes in common. Original Hindu-Buddhist K2 (Borobodur) have natural shapes, and newly made Islamic K35 (Merah Panjunan) and K44 (Caringin Labuan) stylised. Despite different places and periods, they testify to Javanese Muslims' concern on heritage. The second (K1/K10/K34) has a separate kala and makara. K1 (Borobodur) is a kala, K10 (Central Javanese temple) a makara. K34 (Raya Cipaganti) has kala and makara. Hindu-Buddhist kala and makara are generally separated, but merged together in mosques.

The third (K6/K40) resembles each other. It is said that Islamic Mataram (16C) was built on the ruin of Hindu Mataram (8C), taking the same name to remember the glorious past. Mataram also practised a syncretic religion of mystic animism, Hindu-Buddhism, and Islam. The fourth (K13/K28/K31) has one shape. A difference is that K13 (Agung Demak) is extremely stylised, K28 (Al Anwar Angke) is tree-like with floral inside. K31 (Al Wustho Mangkunegara) combines K13 and K28, abstract shape with natural scrolls in the frame.

BACKGROUND

Between the Pre-Islamic and Islamic

Of the 45 kala-makaras, 11 (K1-K11) are Hindu-Buddhist, and 34 (K12-K45) Islamic. Hindu-Buddhist kala-makaras were not found in West Java in the sample, but eight are from Central Java, and three from East Java. Of Islamic ones, 23 are located in West Java, eight in Central Java, and three in East Java. Concentration of Islamic kala-makaras in West Java can be caused by building earlier mosques in Cirebon and Banten during Islamisation. It is also likely due to a great demand of mosques, either renovated or newly built, in expansion of population in Jakarta and its suburbs following Dutch colonisation of Java. K12, the earliest Islamic kala-makara, appeared on a Muslim's grave at Tralaja in East Java, indicating Muslim activity inside Hindu Majapahit and a longing for preserving the Hindu-Buddhist motif already in the 15th century. All Hindu-Buddhist kala-makaras are made of stone, compared to 10 Islamic. Of the remaining, 10 are made of wood, and the rest with others, such as brick, plaster, and tile. Hindu-Buddhist kala-makaras are intensely decorated by scrolls inside frames, but 20 Islamic are adorned with different motifs.

Kala-makaras: 45		HB: 11	I: 34		
			IT: 14	ID: 9	IR: 11
Area	**West 23/** Central 16/ East 6	0/8/3	8/4/2	7/2/0	8/2/1
Location	**Prayer hall 17/** Serambi 3/ Outside 14		6/0/8	5/1/3	6/2/3

Material	Wood 10/ **Stone 21**/ Other 14	0/11/0	2/7/5	4/3/2	4/0/7
Attachment	**Decorated: 31/** Not-decorated: 14	11/0	9/5	4/5	7/4

Within the Islamic

Of the 34 Islamic kala-makaras, 14 are transitory, nine from Dutch colonisation, and 11 are renovated/reproduced. Of the transitory, eight are from West Java, four from Central Java, and two from East Java. Six kala-makaras appeared in the prayer hall, and eight outside a mosque building, particularly on graves. Surprisingly, kala-makaras were not shown in the serambi. Two are made of wood, seven of stone, and five of other materials. Nine kala-makaras are adorned with scrolls or calligraphy, for example. During the next era, seven kala-makaras were found in West Java and two in Central Java. None were shown in East Java. Five appeared in the prayer hall, and one in the serambi, and three outside. Positioning kala-makaras in the prayer hall in the transitory still continued, and the serambi was started in use. Four are made of wood, three of stone, and two of others. Five kala-makaras are not decorated.

Entering the contemporary, eight renovated/reproduced kala-makaras were from West Java, and two from Central Java, and only one from East Java. Six appeared in the prayer hall, and two in the serambi, and three outside. Kala-makaras on graves are no longer popular. A reason can be clarified that many contemporary mosques, particularly those in the centre of big cities, cannot afford graves, because of the high price of the land. For example, when Agung Malang (1853-90) was rebuilt, its grave had to be demolished. It can be also attributed to orthodox Islam which does not allow the cult of ancestor worship after the pure Islam movement in the beginning of the 20th century in Indonesia. Four kala-makaras are made of wood and seven of others. Stone material is no longer used. Seven are decorated.

A few renovated/reproduced kala-makaras display traditional and new designs. K36 (Kasunyatan), K37 (Al Marunda), K38 (Sendang Duwur) do not associate with traditional kala-makaras, but their locations on mihrabs and a grave define them as kala-makaras. Especially, K37 was found on a grave whose mosque was located in a poor area in Jakarta. If it were a more affluent area, elaborate kala-makara might have been the case. Extremely geometrised K38 raises a question: was it the result of being situated close to Surabaya harbour where Javanese Muslims embark trips to Mecca, bringing a new impulse from the orthodox Islamic world? On the contrary, K40 (Agung Mataram) resembles entirely K6 (Prambanan temple). Renovated/reproduced kala-makaras in the contemporary period inherited symbolic idea and geometric shapes from the transitory, testifying an evidence of continuity, in terms of symbolism.

Summary and Conclusion

Preferred	Pre-Islamic & Islamic		Islamic		
background	HB	I	IT	ID	IR
Area		West Java	West Java	West Java	West Java
Location		Prayer hall	Outside	Prayer hall	Prayer hall
Material	Stone	Other	Stone	Wood	Other
Attachment	Decorated	Decorated	Decorated	Not-decorated	Decorated

Geographic Area: Kala-makaras in Central Java continued mainly to Islamic ones in West Java. The reasons are (i) Islamisation, spreading from Central Java where Islamic kingdoms began, and (ii) the expansion of urban development to meet a need for new Muslim settlement.

Location in a mosque building: The majority of Islamic ornaments appeared on graves in the transitory, but moved to the prayer hall in the next period, highlighting mihrabs and minbars. A reason can be financial difficulty of affording graves in city mosques under urbanisation. Other is due to orthodox Islam movement around 1920, underlining pure and formal dogma, rather than keeping animistic ancestor worship on graves. However, the large number of kala-makaras both in the prayer hall and on graves stresses the sacredness of kala-makaras. The ancestor cult takes precedence over the ban on living figures in Islam, because Javanese Muslims wished Hindu-Buddhist kala-makaras to keep their mosques sacred. And the absence of kala-makaras in the serambi explains the place itself as profane, considering its origin from Javanese houses and its adaptation to mosques later for social activities.

Material: Favourite material of stone in Hindu-Buddhist temples affected Islamic kala-makaras in the transitory, but gave way to wood in the Dutch colonisation. Wood might be used in temples, but disappeared, due to natural circumstances like climate. In the contemporary, others replaced wood, indicating Javanese Muslims' creativity in a choice of material.

Attachment: A tendency to decorate kala-makaras emerged between two periods, except a lesser use during Dutch colonisation. Colour was introduced to mosque ornamentation this time, but colouring kala-makaras seems to be reluctant, possibly owing to their sacred character.

ANAYLSED BY BASIC TYPE OF SHAPE AND ITS SUBDIVISIONS

In order to answer sub-question 2 (The *hadith*, the sayings of the Prophet, prohibits living figures being depicted in art. Why therefore has the kala-makara, a favourite animal motif in Hindu-Buddhist temples, been adapted into Javanese mosque ornamentation, and how has it been used in Javanese mosques over time?), the selected 45 kala-makaras were perceived several times with constant intervals. Shape is the outline of a plane figure of a form. Positive shapes are the subject matter, while negative ones are the surrounding areas. Shapes are created by line-texture-value-colour, and varied from simple circles-triangles-squares to complex silhouettes of nature-humans.

In analysing the 45 kala-makaras, natural/geometric are basic type of shape. Circular/oval/triangular/square/rectangular are subdivisions of the geometric. And continuity of kala-makaras between the pre-Islamic and Islamic periods is examined in two stages, using the same approach as tumpals: (i) verifying presence of each type of shape, and (ii) counting their frequency of use in number and establishing their scaled value, mode, and total number. If numbers of shapes are more than 10, or are perceived abundantly, they are graded as many, between 5 and 9 as some, and fewer than 5 as few. Relationship between maximal and

minimal use of shapes is considered. Decoration within the frame of kala-makaras (K12, K22, K24, K28, K31) is not treated as shape. K26, K33 are kala.

Natural/Geometric

Four examples are assessed to find natural/geometric and numbers of shapes. Defining 'natural' are (i) living animal of kala-makara, and (ii) natural floral motif without stylisation. 'Geometric' are (i) abstracted such as circle, oval, triangle, square, and rectangle, (ii) simplified shapes, and (iii) stylised spirals.

K4 (Prambanan temple*) many natural	K16 (Agung Kasepuhan*) many natural
K24 (Agung Mataram**) 12 geometrical	K45 (Carita Labuan**) 10 geometrical

PRESENCE: Of the 45 kala-makaras, 21 have natural and 24 geometric. All Hindu-Buddhist ones display natural, compared to 10 Islamic. Geometric were popular in the Islamic period, almost fully present in renovated/reproduced ones.

Kala-makaras: 45		HB: 11	I: 34		
			IT: 14	ID: 9	IR: 11
Basic	Natural 21/ **Geometric 24**	11/0	5/9	4/5	1/10

FREQUENCY: Very popular natural in Hindu-Buddhist kala-makaras fell drastically in the Islamic transitory and almost evolved later, despite revival in K26, for example. Geometric were common such as in Islamic K19-K21. K20 (Kasunyatan) and K38 (Sendang Duwur) are extremely simplified. Particularly, renovated/reproduced K38-K39 display geometric. In order to avoid conflict against Islamic art tradition, but to keep heritage, Javanese Muslims combined a Hindu-Buddhist idea of kala-makaras and an Islamic form of stylised shapes.

Modes and total numbers+: natural/geometric[46]

Hindu-Buddhist: Natural (mode: many). Total numbers prove their predominance three times more used than geometric. Islamic: Geometric (mode: none-some). Total numbers reveal rather big difference between two types in transitory and renovated/reproduced kala-makaras.

CONTINUITY/INFLUENCE: Natural in Hindu-Buddhist kala-makaras did not affect Javanese mosques, despite weak continuity. This result testifies to new influence on shapes by Islamic ornament when kala-makaras were adapted into mosques.

Circular/Oval/Triangular/Square/Rectangular of the Geometric

Geometric shapes can be divided into circular/oval/triangular/square/
rectangular. Five types are tested in the 24 geometric. Multiple options were given, because of many types of shape in kala-makaras. Geometric are stylised and abstract. Circular includes circles, circular-like, and spirals, except curved which belong to oval shapes. A diamond is doubling triangles. K14 (Merah Panjunan) has circular, K21 (Sunan Kalijaga) oval, K22 (Sunan Kalijaga) triangular, K27 (Al Anwar Angke) square, and K19 (Agung Kasepuhan) rectangular. K14 has <u>some</u> circular and <u>some</u> oval, due to moderate numbers.

PRESENCE: Of the 24 Islamic geometric, 14 are circular, 18 oval, 16 triangular, seven square, and 14 rectangular. On the whole, oval are the most common, and are more used than others in transitory and renovated/reproduced kala-makaras. There are more triangular in the Dutch colonisation era. Square seem to be the least popular.

FREQUENCY: All shapes continued with weak influence. Rather significant use of oval can be seen in transitory K14, K17, K21. K24 (Sunan Kalijaga) consists of big oval, which fell slightly during the next period, but regained later. K19 (Agung Kasepuhan) has triangular and rectangular, and K45 (Carita Labuan) circular to suit for an arched mihrab. Triangular were irregularly except a successive use in renovated/reproduced K37-K39. K41 (Kanari) has diamond. Squares are largely in K43 (Hidayatullah).

CONTINUITY/INFLUENCE: Within the Islamic period, oval shaped kala-makaras continued in Javanese mosques, together with other shapes in part. Weak influence occurred in subdivision of the geometric, implying any shapes were allowed to mosque ornamentation.

Conclusion

<u>Natural/Geometric:</u> Both shapes were present between two periods, but natural were predominant in Hindu-Buddhist kala-makaras, and geometric in Islamic ones. Within the Islamic period, geometric were mostly echoed.

<u>Circular/Oval/Triangular/Square/Rectangular of the Geometric:</u> No particular shapes were predominant, despite the main continuity of oval. Favouring them can be attributed to stylised kala-makaras for arched mihrabs in mosques, compared to square or triangular at temple gates.

Continuity of pre-Islamic kala-makaras in Javanese mosque ornamentation tends to be irregular and less influential, by the basic type of shape and its subdivisions.

SUMMARY AND CONCLUSION

Background

Hindu-Buddhist kala-makaras were more frequent in Central Java and are made of stone, while Islamic ones were common in West Java, made of other materials. A variation of materials implies both European influence and creativity of local genius in mosque ornamentation. Their commonness was favouring decoration. Within the Islamic period, West Java was the most common place.

[46] K1-K3=borobodur; K4-K6=prambanan; K7=panataran; K8=singasari; K9=djago; K10-K11=central Javanese; K12=tralaja muslim grave; K13=agung demak; K14-K15, K35=merah panjunan; K16-K19=agung kasepuhan; K20, K36=kasunyatan; K21-K22=sunan kalijaga; K23=sunan dradjat; K24, K40=agung mataram; K25, K41=kanari; K26=jami kanoman; K27-K28=al anwar angke; K29=mukarmah bandan; K30=kampung nembol; K31-K32=al wustho mangkunegara; K33, K45=carita labuan; K34=raya cipaganti; K37=al marunda; K38=sendang duwur; K39=al makmur jipang; K42=al mansyur sawah lio; K43=hidayatulla; K44=caringin labuan

Kala-makaras in the transitory were likely to be outside, are made of stone with decoration. Those in the Dutch colonisation era were more found in the prayer hall, made of wood without decoration. Other materials and decoration were preferred in renovated/reproduced kala-makaras. Hindu-Buddhist stone kala-makaras in Central Java continued to Islamic wooden ones in West Java. Decoration was only shared between two periods. However, appearance of kala-makaras in renovated mosques proves continuity of pre-Islamic motif in idea and form in Javanese mosque ornamentation, in terms of symbolic connotation of the sacredness.

Basic Type of Shape and Its Subdivisions

Natural/Geometric: Natural were present both in two periods, but were absolute in Hindu-Buddhist kala-makaras. On the contrary, geometric were only found in Islamic ones. Continuity of pre-Islamic kala-makaras in mosques tends to be irregular and less influential, by the basic type of shape. Within the Islamic period, geometric was continuously echoed.

Circular/Oval/Triangular/Square/Rectangular of the Geometric: No direct relation could be made within the Islamic era. Despite the main continuity of oval in mosques, all types participated partially. Favouring oval could be due to stylised kala-makaras for arched openings on mihrabs. It can be asked whether different locations in a mosque building produced a variety of shape, or whether this variety was a result of local creativity. In short, Hindu-Buddhist kala-makaras did not affect mosque ornamentation significantly by the basic type of shape and its subdivisions.

On Mihrabs

Kala-makaras were mostly found in West Java, made of other materials with decoration. Oval are preferred, and smooth and big were fully used, too. Unified kala-makaras were not coloured. Difference between all Islamic kala-makaras and those on mihrabs is that the former had big at first, coloured, equally separate and unified shapes. Ornamentation of kala-makaras on mihrabs did not differ from that in other locations in a mosque building.

Having observed all findings, continuity of pre-Islamic kala-makaras in Javanese mosque ornamentation was constantly shown in five aspects. Their significance seemed not to be influential, particularly by shape. Kala-makara, one of the most significant pre-Islamic heritages, originated from India and was introduced to Java during the Hinduisation in the fifth century. They signified ultimately the sacredness of temples and mosques over time. Although their shapes became stylised in metamorphosis from temples into mosques, losing their living figures to conform to orthodox Islam, Javanese Muslims' strong awareness of keeping the ancestor worship is apparent through a syncretic approach. Kala-makara*s* will reappear in mosques, regardless of any shapes. The crucial reason is their symbolic connotation as the holiness.

CHAPTER IX

Pre-Islamic Lotus Buds in Javanese Muslims' Imagination

Once I was Buddhist. Each time I was desperate to reassure my world, I made a quick passage to nearby temples. In the midst of meditation towards Nirvana, I heard a gentle voice. The Buddha, the Enlightened, was leaving from his world, his lotus seat, to console my wonderings. I wandered with him in a panoramic odyssey on a lotus boat, launching a voyage at the ancient Ptolemaic temples in Egypt; loading lotus buds at the Sanchi sanctuary in India, and laying anchors at East Javanese temples in Indonesia. With the greatest Buddha and his passionate lotus, I recovered myself from my lost identity.

Lotus buds signify 'life' and 'creation' beyond time and space, and the flavour of their sacredness has no exception in Javanese mosque ornamentation. However, through gradual transformation from temples to mosques, for Javanese imaginations, lotus buds seemed to be reincarnated to represent 'oneness in Allah', due to their holiness. Whatever it is, they are a remedy for my soul and a blessing for Javanese Muslims.

This chapter focuses on an analysis of lotus buds by form as indicator answering sub-question 3: How frequent was the use of Hindu-Buddhist lotus buds in Javanese mosque ornamentation, and how important has the lotus bud been in mosques within the Islamic period? A preliminary visual assessment of lotus buds and their background cast a glimpse of continuity across time. Through basic type of form and its five further characteristics, value, and size, more detailed analyses are done in lotus buds, including those on mihrabs. 'Pre-Islamic' means still 'Hindu-Buddhist'.

The 50 lotus buds: 1. borobodur (8C), 2-4. prambanan (8-9C), 5. central Java (8-9C), 6. kalasan (9C), 7-10. east Java (12-15C), 11. pajlagrahan (1452), 12. sunan giri (1485), 13. agung kasepuhan (1498), 14. jami kanoman (1510), 15. al alam cilincing (c.1520), 16-17. kasunyatan (1522-70), 18. al marunda (1527), 19-20. sunan kalijaga (1533), 21-22. astana mantingan (1559), 23. sendang duwur (1561), 24. kauman semarang (1575), 25-26. kanari (1596-1651), 27. jami kanoman (1679), 28. al mansyur sawh lio (1717), 29. hidayatullah (1750), 30. agung solo (1757), 31. tambora (1761), 32-33. al anwar angke (1761), 34. jami al Islam (1770), 35. agung yogya (1774), 36. menar melayu (1820), 37. kampong nembol (1880), 38. carita labuan (1883-93), 39. raya cipaganti (1933), 40. al azhar (1952-58), 41. sunda kelapa (1969-71), 42-43. sabilliah malang (1974), 44-45. pusdai jaber (1996), 46. merah panjunan* (1480), 47. sunan giri* (1485), 48. menara kudus* (1537), 49. al makmur jipang* (1561-77), 50. al mansyur sawah lio* (1717) *mosques built before the contemporary period

HINDU-BUDDHIST LOTUS BUDS IN TEMPLES AND MOSQUES

50 lotus buds out of the surveyed 60 were selected and listed by chronology and geographical area. Hindu-Buddhist and Islamic lotus buds were mainly taken from temples, the Indonesian Archaeology Museum in Mojokerto, East Java, and mosques. Of 16 Hindu-Buddhist lotus buds, 10 were singled out, including two from 'Indonesian Ornament' (Pepin Press 1998). All 40 Islamic ones were brought from mosques, sometimes in similar forms, but in different periods. Any forms which symbolise 'life' and 'creation' with lotus buds are accepted in this analysis: jar on a roof, massive sphere on floor to support pillars.

Lotus played the most significant role in Hindu-Buddhist art. According to Hindu mythology, creation of the world is represented by growth of the holy lotus. In Mahayanist Buddhism, lotus, as creator and supporter of the cosmic tree, is the pattern for the abstract notions of the Dharma. Its flower undergoes a series of metamorphoses, starting with a bud as a basic symbolism.

Among various lotus buds during the fieldwork, the main form is almost a regular sphere with the narrowest angle pointing upwards. Irregular ones also appeared. Either naturalistic or stylised or combined forms, a few common characteristics could be

traced in (i) mystical and symbolic connotation (L6/L27/L36) and (ii) aesthetic and decorative beauty (L2/L21/L37-L39). They appeared all the time, spread over the whole of Indonesia, often accompanied by Hindu-Buddhist gods and goddesses in temples, and independently in mosques, particularly on sacred graves and mihrabs. Using different materials, they are sometimes coloured in gold and green to express the glory of Islamic kingdoms and religion. Some are embellished with scrolls, kala-makaras, and calligraphy. The majority of lotus buds tend to keep singular, balanced in symmetry to stress symbolism of life and unity. Proving these, lotus buds can be the most influential motif in religious architecture.

A preliminary visual assessment suggests four groups. The first (L6/L15/L36/L47) shares with conic forms in common. Despite different periods, areas, and materials, Javanese Muslims' wishes to continue the motif are apparent. Islamic L36, L47 are painted in gold, associating the sacred golden lotus buds in temples.

G1	L6-Kalasan temple	L15-Al Alam Cilincing	L36-Menar Kp Melayu	L47-Sunan Giri
G2	L12-Sunan Giri	L17-Kasunyatan	L25-Kanari	
G3	L1-Borobodur temple	L21-Astana Mantingan	L31-Tambora	L43- Sabilliah Malang
G4	L7-East Javanese temple	L13-Agung Kasepuhan	L35-Agung Yogya	L46-Merah Panjunan

The second (L12/L17/L25) places on floors. Partaking in the Islamic transitory, all are made of wood, and support columns in the prayer hall, implying Hindu-Buddhist 'Golden Germ'. L12 is from East Java, while the others from West Java. A question arises: is the same type of lotus buds in different areas due to *walis* who travelled through Java to spread their religion?

The third (L1/L21/L31/L43) displays open forms. L1 (Borobodur) is held by a hand of a Buddhist goddess, L21 (Astana Mantingan) at the entrance of the mosque, L31 (Tambora) on a grave, and L43 (Sabilliah Malang) on a pillar in the prayer hall. Despite dissimilar periods, areas, and locations, they symbolise 'life'. The fourth (L7/L13/L35/L46) has spherical forms. As creator, not only were they shown beside the Buddha in temples, but also appeared on mihrabs, making Javanese mosques sacred as a characteristic.

BACKGROUND

Between the Pre-Islamic and Islamic

Of the 50 lotus buds, 10 (L1-L10) are Hindu-Buddhist, and 40 (L11-L50) Islamic. Hindu-Buddhist lotus buds were not found in West Java in this sample, while six are from Central Java, and four from East Java. Of Islamic ones, 25 are located in West Java, 10 in Central Java, and five in East Java. Surprisingly, West Java is the most common area for Islamic lotus buds, because it was Central and East Java where the great Hindu-Buddhist kingdoms of Sailendra, Sanjaya, Singasari, and Majapahit built many temples. This tradition was continued by the first Islamic Demak in Central Java in the 15th century. Two questions can be attempted: is the presence of a large number of lotus buds in West Java due to earlier Islamisation, using lotus buds as a sacred motif in Islam? Or is it a result of Dutch colonisation of Batavia (now Jakarta) in West Java where new mosques were needed for expanding population?

Lotus buds: 50		HB: 10	I: 40		
			IT: 16	ID: 13	IR: 11
Area	**West 25/** Central 16/ East 9	0/6/4	9/5/2	10/3/0	6/2/3
Location	**Prayer hall 20/** Serambi 3/ Outside 17		7/1/8	5/1/7	8/1/2
Material	Wood 17/ **Stone 22/** Other 11	0/10/0	5/7/4	6/5/2	6/0/5
Attachment	Decorated 13/ **Not-decorated 37**	1/9	4/12	3/10	5/6

All Hindu-Buddhist lotus buds are made of natural stone. Of Islamic ones, 17 are made of wood, 12 of stone, and the rest are of others, such as plaster or glass, indicating European influence during the Dutch colonisation era. For example, two lamps in shapes of lotus bud from L43 (Sabilliah Malang) and L44 (Pusdai Jaber) are made of glass. In Islam, a hanging lamp has a sacred meaning, symbolising divine light and the presence of God himself. The Holy Koran (surah 24:35) says: 'God is the Light of the heavens and the earth; the likeness of His Light is a niche wherein is a lamp'. Only one Hindu-Buddhist lotus bud has decoration, compared to 12 Islamic with scrolls. The absence of decoration implies the motif as a symbol, instead of adorning temples and mosques for beauty only.

Lotus Buds within the Islamic

Of the 40 Islamic lotus buds, 16 are transitory, 13 from Dutch colonisation, and 11 renovated/reproduced ones. Of the transitory, nine were from West Java, five from Central Java, and two from East Java. Seven lotus buds appeared in the prayer hall, only one in the serambi and eight outside mosques, particularly on graves. Five are made of wood, and seven of stone, and four of other materials. 12 lotus buds are not adorned, preserving the symbolic connotation from Hindu-Buddhist lotus buds.

During the Dutch colonisation era, 10 lotus buds appeared in West Java, and three in Central Java. None was seen in East Java. Five lotus buds were present in the prayer hall, and only one in the serambi, and seven outside. Their frequent use on graves can be attributed to syncretic Mataram which practised animism, Hindu-Buddhism, and Islam. Six lotus buds are made of wood, five of stone, and two of others, such as tile. Three lotus buds are decorated.

Of the renovated/reproduced lotus buds, six were from West Java, two from Central Java, and three from East Java. Eight appeared in the prayer hall, and only one in the serambi, and two outside. Six lotus buds are of wood, and five of others, such as coloured glass. Almost half of lotus buds are decorated. L46 (Merah Panjunan) from Cirebon in West Java is worth discussing. The mosque had several renovations, and a serambi was built, because the prayer hall was too small to accommodate prayers on Friday services. Consequently, a Hindu-Buddhist gate which bordered the courtyard and outside the mosque became located in this serambi. On its top, a new lotus bud with a Koranic word signifies the sacredness of the mosque, despite its location in the serambi[47] (Jumardi 2004).

[47] The serambi is not sacred in a Javanese mosque setting, due to its origin from houses for public events.

Mosques and palaces in Cirebon blended Hindu-Buddhist, Chinese, European, and Islamic ornaments during this period. L50 (Al Mansyur Sawah Lio) lacks of a traditional mihrab, but an arch of extremely stylised kala-makara and lotus buds in the prayer hall serve as the mihrab. If the lotus buds were not beside the kala-makara, they are hardly recognised. The religious leader (2003) says that many mosques in Jakarta do not decorate mihrabs, for fear of interrupting prayer, but deficient finance can be the answer?

Summary and Conclusion

Preferred background	Pre-Islamic & Islamic		Islamic		
	HB	I	IT	ID	IR
Area	Central Java	West Java	West Java	West Java	West Java
Location		Prayer hall	Outside	Outside	Prayer hall
Material	Stone	Wood	Stone	Wood	Wood
Attachment	Not-decorated	Not-decorated	Not-decorated	Not-decorated	Not-decorated

Geographical area: Islamic lotus buds in West Java continued mainly from Hindu-Buddhist ones into Central Java. Islamisation by *walis* in the earlier Islamic period and the expansion of urban areas after Dutch colonisation of Java could be its reasons.
Location in a mosque building: Outside as favourite location for lotus buds both in the transitory and Dutch colonisation periods was replaced by the prayer hall, principally mihrabs in renovated/reproduced lotus buds during the contemporary. This change can be caused by the high price of land in cities. Transfer of lotus buds from graves to the prayer hall could be initiated by Javanese Muslims' wishes for keeping heritages. It supports Prijotomo (2004): 'I am Javanese, then, my religion is Islam'.
Material: Although stone was predominant in Hindu-Buddhist temples and echoed in the Islamic transitory, wood replaced it during the next period. This choice is easy to verify. As an abode of gods and goddesses, Hindu-Buddhist temples are largely constructed of stone, and ornamentation followed the same. By contrast, mosques are normally built of wood, and are designed to be for every-day purpose, requiring renovations and constructions for growing population in urban areas. Tropical Java can easily supply abundant wood for them.
Attachment: The absence of decoration on Hindu-Buddhist lotus buds corresponds to Islamic ones, underlining the holy symbolism of 'creation' and 'oneness in Allah' respectively. Naturally, spherical forms are expected to appear in Javanese temples and mosques to express this. Renovated/reproduced lotus buds did not strictly follow Hindu-Buddhist ones, due to their extreme stylisation, but the symbolic sacredness was strongly transferred, proving continuity and influence on Javanese mosque ornamentation.

ANALYSED BY BASIC TYPE OF FORM AND ITS SUBDIVISIONS

This section is designed to analyse lotus buds by basic type of form and its subdivisions, in order to answer sub-question 3 (How frequent was the use of Hindu-Buddhist lotus buds in Javanese mosque ornamentation, and how important has the lotus bud been in mosques within the Islamic period?). The chosen 50 lotus buds were perceived several times at constant intervals and observations.

A form is a perfect combination of all visual elements. Primary forms are those whose parts are related to one another in a consistent and orderly manner. They are steady in nature and symmetrical, while non-primary are asymmetrical and dynamic.
In this analysis, primary/non-primary are basic type, and cubic/conic/spherical/cylindrical/pyramidal are subdivision of the primary. Continuity of lotus buds between two periods is approached as the same as tumpals and kala-makaras. But this deals with the perfection of forms, rather counting their numbers. The researcher feels this method more appropriate to evaluating forms in (i) verifying the presence of each type of form, and (ii) measuring the perfection of all forms, and establishing their scaled value, mode, and total number. If lotus bud is perfect in the primary or perfect-to-be, it is graded as much. Relationship between the most and least perfection is considered.

Primary*/Non-Primary**

Four examples are initially assessed to find primary/non-primary and their perfection. Primary are basic forms of cube, cone, sphere, cylinder, and pyramid. They can be perceived in (i) 3-dimensional, and (ii) tend to be primary. Hindu-Buddhist L7 and Islamic L13 display primary, while Hindu L2 and Islamic L31 have non-primary. As lotus leaves are fastened to L7, L13, they graded as some. Of non-primary, L31 is full of natural forms, marked as much, L2 as some due to less naturalistic than L31.

L7 (East Javanese temple*) some primary	L13 (Agung Kasepuhan*) some primary	L2 (Prambanan temple**) some non-primary	L31 (Tambora**) much non-primary

PRESENCE: Of the 50 lotus buds, 44 have primary and six non-primary. Of the primary, nine are Hindu-Buddhist, and 35 Islamic. Non-primary were found in one Hindu-Buddhist and five Islamic lotus buds. Primary were absolutely predominant between two periods, indicating strong continuity from temples to mosques.

Lotus buds: 50		HB: 10	I: 40		
			IT: 16	ID: 13	IR: 11
Basic	**Primary 44/** Non-primary 6	9/1	16/0	9/4	10/1

FREQUENCY: Although primary continued mostly between two periods, short interval was in L37-L39 during the Islamic Dutch colonisation. Non-primary almost did not exist, but among a few examples, L31 (Tambora) appeared on a grave inside the mosque. The owner of the grave is a Chinese who built the mosque during Dutch colonisation, thus syncretic ornamentation of Hindu-Buddhist natural forms of stone lotus buds, and Chinese and European landscapes of ceramic tiles illuminates the tomb.
Modes and total numbers+: primary/non-primary

Hindu-Buddhist: Primary (mode: little). Hindu-Buddhist lotus buds are neither perfect nor stylised in primary. Total numbers indicate their predominance, used twice more than their opposite. Islamic: Primary (mode: little or some) indicates more stylised Islamic lotus buds. Total numbers prove their predominance, and reveal big difference between two types except Dutch colonisation. [48]

CONTINUITY/INFLUENCE: Continuity of pre-Islamic lotus buds in mosques was constant by primary with different frequencies, showing the awareness of Javanese Muslims on cultural heritage. Nevertheless, new impulse emerged gradually, giving way to free forms, instead of keeping perfect forms. Accordingly, influence of Hindu-Buddhist lotus buds on mosques became weaker.

Cubic/Conic/Spherical/Cylindrical/Pyramidal of the Primary

Primary forms can be subdivided into cubic, conic, spherical, cylindrical, and pyramidal. Five types are tested in 44 primary. L19 (Sunan Kalijaga) displays cubic, despite a bulbous form on the top. L6 (Kalasan temple) and L15 (Al Alam Cilincing) are conic, L4 (Prambanan temple) and L18 (Al Marunda) spherical, L5 (Central Javanese temple) and L11 (Pajlagrahan) cylindrical, L8 (East Javanese temple) and L34 (Jami Al Islam) pyramidal. L19, L11, L8 are graded as some due to lotus leaves fastened to primary, L6, L15, L34 as much for pure singular forms, L4, L18, L5 as little owing to similar and imperfect forms.

PRESENCE: Of the 44 primary forms, three are cubic, 12 conic, 18 spherical, 9 cylindrical, and two pyramidal. Cubic were only found in Islamic lotus buds in the sample. Of the conic, three are Hindu-Buddhist and nine Islamic. Four Hindu-Buddhist and 14 Islamic lotus buds display spherical, while one Hindu-Buddhist and eight Islamic are cylindrical. One of each Hindu-Buddhist and Islamic lotus bud is pyramidal. Overall, spherical are the most common, but conic also echoed between two periods. These two forms raise a symbolic assumption, because spherical can imply duality or totality, and conic be process of 'creation' in Hindu-Buddhism. They can represent diversity in unity or 'oneness in Allah' in Islam.

FREQUENCY: Five types did not continue constantly. Occasional use of spherical was seen in the Islamic transitory and renovated/reproduced lotus buds. Conic and cylindrical were also sometimes used. Partial continuity of all types implies that forms had to be adjusted, according to temple and mosque ornamentation, creating various forms. Hindu-Buddhist lotus buds are freestanding (L4), or supported by the Buddha or his attributes (L5). In adaptation into mosques, their locations became diverse. A few (L41) are on the top of columns to support arched mihrabs, while some (L12) on floors to bear columns.

Conclusion

Primary/Non-primary: Primary of pre-Islamic lotus buds affected Javanese mosques consistently.

Cubic/Conic/Spherical/Cylindrical/Pyramidal of the Primary: Constant relationship can be set up by spherical in lotus buds between two periods. Conic were equally used with spherical during the Dutch colonisation era. Probably, spherical emphasise symbolism of 'creation' and 'oneness in Allah'.

Hindu-Buddhist lotus buds influenced significantly Javanese mosques by basic type of form, not through subdivisions of primary, despite partial contribution of spherical.

SUMMARY AND CONCLUSION

Background

Hindu-Buddhist lotus buds were more present in Central Java and are made of stone, while Islamic ones were mostly common in West Java, made of wood. A commonality was the absence of decoration. Within the Islamic period, West Java and the absence of decoration were in common. In the transitory, they showed more outside, made of stone, but in the next period, wood replaced. In renovated/reproduced lotus buds, the prayer hall became primarily. Hindu-Buddhist stone lotus buds in Central Java continued to Islamic wooden ones in West Java, sharing the absence of decoration. Despite a change of material, symbolism of 'life' in Hindu-Buddhism and 'oneness in Allah' in Islam seems to be still intact. And appearance of lotus buds in contemporary mosques testifies to continuity from temple to mosque ornamentation.

Basic Type of Form and Its Subdivisions

Primary/Non-primary: Primary were absolutely predominant between two periods. Hindu-Buddhist lotus buds affected Islamic mosques, revealing strong awareness of Javanese Muslims on cultural heritage.

Cubic/Conic/Spherical/Cylindrical/Pyramidal of the Primary: No consistent relationship could be set up across time. Spherical Hindu-Buddhist lotus buds were continuous in the Islamic period. Conic were equally used with spherical during Dutch colonisation. Spherical were likely to emphasise symbolism.

Hindu-Buddhist lotus buds had constant continuity and significant influence on Javanese mosques by basic type of form, not in subdivisions of the primary.

On Mihrabs

Lotus buds on mihrabs were the most common in West Java. They are made of wood and embellished, stressing symbolism through beauty. Spherical were mainly used. 2-3 dimensional and dark were also predominant, and small and big were equally used. The differences between all Islamic lotus buds and those on mihrabs were that the former preferred (i) the absence of decoration, (ii) stylised, and (iii) big forms.

[48] L1=borobodur; L2-L4=prambanan; L5=central Javanese; L6=kalasan; L7-10=east Javanese temple; L11=pajlagrahan; L12, L47=sunan giri; L13=agung kasepuhan; L14=langgar kraton kanoman; L15=al alam cilincing; L16-L17=kasunyatan; L18=al marunda; L19-L20=sunan kalijaga; L21-L22=astana mantingan; L23=sendang duwur; L24=kanoman semarang; L25-L26=kanari; L27=jami kanoman; L28, L50=al mansyur sawah lio; L29=hidayatullah; L30=agung solo; L31=tambora; L32-L33=al anwar angke; L34=jami al-islam; L35=agung yogya; L36=menar kp. melayu; L37=kampung nembol; L38=caringin labuan; L39=raya cipaganti; L40=al azhar; L41=sunda kelapa; L42-L43=sabilliah malang; L44-L45=pusdai jaber; L46=merah panjunan; L48=menara kudus; L49=al makmur jipang

All findings inform us that continuity of pre-Islamic lotus buds in Javanese mosque ornamentation took place in five aspects. Influence appears to be significant, due to symbolic representation. Various forms can testify to 'diversity in unity' in Javanese culture. Lotus bud, emerged from Egyptian and Indian civilisations in the ancient world, had an absolute reason to be the most powerful ornament in Javanese temples and mosques, beyond time and space. They had a priceless prestige in imaginations of Hindu-Buddhist gods and goddesses. This splendour was again prolonged by Allah and his people. Lotus bud is the greatest mediator for Javanese syncretic ornamentation. Surely, Javanese Muslims knew the magic and holiness of lotus bud, learned from their indebted ancestors.

CHAPTER X

Harmony of Pre-Islamic Scrolls with Islamic Arabesques in Javanese Mosques

Javanese people are syncretic, called Indonesian tolerance and flexibility… One is Agami Jawi (Javanese Religion) which adapted mystically inclined Hindu-Buddhist beliefs and concepts and integrated within an Islamic frame of reference. The other is the Agami Islam Santri (Islam of the Religious People), a variant of Javanese Islam, which is much closer to the formal dogma of Islam.

This chapter is the last part of four analyses, focusing on scrolls, in order to answer sub-question 4: What if any was the influence of Hindu-Buddhist scrolls on Javanese mosque scroll designs?

Syncretic Javanese scrolls in combination of Hindu-Buddhist and Islamic ideas and forms in many occasions are ready to prove Java, Indonesia, as a melting pot. A preliminary visual presentation and background of 50 scrolls cast a glimpse of continuity of pre-Islamic scrolls in Javanese mosque ornamentation. And the main research lies in two analyses by basic type of rhythm and its five further characteristics, using indicator from principles, instead from elements of design. Moreover, texture and proportion trace potential contribution to continuity. Finally, scrolls on mihrabs reveal own development, accompanying a summary and conclusions. Specifically, in this chapter, all scrolls in mosques are recognised as Hindu-Buddhist either in idea or in form, according to the identification of their origins. A term 'pre-Islamic' still means 'Hindu-Buddhist'.

The 50 Scrolls: 1.borobodur (8c), 2-3. mendut (8C), 4-5. kalasan (9C), 6. panataran (1147-1454), 7-8. panataran (1147-1454), 9-10. djago (1268), 11. jawi (13C), 12. tralaja grave (15C), 13-14. pajlagrahan (1452), 15. agung demak (1478), 16-17. sunan giri (1485), 18. agung kasepuhan (1498), 19. al marunda (1527), 20-22. sunan kalijaga (1533), 23-24. astana mantingan (1559), 25-27. sendang duwur (1561), 28. agung mataram (1568-1601), 29. agung solo (1557), 30. al anwar angke (1761), 31-32. agung yogya (1773), 33. mukarmah banding (1789-1809), 34. agung malang (1853-90), 35. al wustho mangkunegara (1878-1918), 36. kampong nembol (1880), 37. carita labuan (1883-93), 38. cut meutia (1920), 39. raya cipaganti (1933), 40. sunda kelapa (1969-71), soko tunggal (1973), 42-43. sabilliah malang (1974), 44. al ukwah balai kota (1974), 45. astana mantingan* (1559) , 46-47. agung jepara* (1561-77), 48. agung mataram* (1568-1601), 49. kauman semarang* (1575), 50. hidayatullah* (1750) *mosques built before the contemporary period

HINDU-BUDDHIST SCROLLS IN JAVANESE TEMPLES AND MOSQUES

50 scrolls out of the 60 surveyed were chosen and arranged by chronology and geographical area. All Hindu-Buddhist and Islamic scrolls were directly taken from temples, a grave, and mosques in Java. Only similar scrolls during the same period were rejected. Hindu-Buddhist scrolls often occur in the shape of a recalcitrant spiral. Although there are various adaptations to lotus scrolls in temples as a decorative motif, the importance of Hindu-Buddhist scrolls is the symbol of 'the Golden Germ', start of life.

Hindu-Buddhist scrolls in Central Java have naturalistic and luxurious decoration, influenced from India. They run vertically in a narrow panel beside arched gated. Scrolls in East Java are simple and stylised, revealing an indigenous character. They undulate horizontally in a narrow frame or sometimes shape a medallion. Both scrolls are occasionally combined with animals, humans, and circular objects. Scrolls in Javanese mosques are amalgamation of Hindu-Buddhist and Islamic ideas[49] and forms, created by local genius. Accordingly, those in the Islamic transitory have difficulty to be called 'scrolls', because different rhythms occur simultaneously without repetition. If they followed geometrical arabesque, their rhythms could be easily traced, especially on arched mihrabs where vertical, horizontal, and diagonal rhythms occur.

Whatever the case was, most scrolls have commonness in: (i) symbolic connotation (S1/S15/S35) and (ii) aesthetic beauty (S8/S12/S47). They appeared all the time, scattered over the whole of Indonesia in temples and mosques. They are made of different materials, and sometimes are coloured. A few are adorned with kala-makaras, Arabic calligraphy, etc.

Scrolls in temples and mosques are balanced in symmetry, and undulate regularly, repetitively, and continuously. They tend to represent 'the start of life' in Hindu-Buddhism and 'the vision of paradise' in Islam. Therefore, Islamic scrolls can be symbolic in syncretic Javanese mosques, although Islamic art is essentially decorative. Considering these facts, scroll is the most universal motif in religious ornamentation.

G1	S1-Borobodur temple	S35-Al Wustho Mangkunegara		
G2	S4-Kalasan temple	S38-Cut Meutia	S42-Sabilliah Malang	S50-Hidayatullah
G3	S6-Panataran temple	S15-Agung Demak	S23-Astana Mantingan	
G4	S5-Kalasan temple	S31-Agung Yogya	S40-Sunda Kelapa	

For continuity, four groups of visual presentation are chosen. The first (S1/ S35) shares 'the Golden Germ' through makara and vertical rhythms in common. The second (S4/S38/S42/S50) has a vase as 'life giver', while the third (S6/ S15/S23) has disharmonious rhythms. As Islamic S15 (Agung Demak) is made by Hindu Majapahit architects, it is named 'Majapahit scroll'. The last (S5/S31/S40) shows continuous rhythms with the same symbolism. Mataram practised syncretic ornaments in S31 (Agung Yogya). S40 (Sunda Kelapa) has Hindu-Buddhist in idea and Islamic arabesque in form, revealing continuous syncretism in renovated/reproduced scrolls.

[49] A stylised form of the vegetal: geometrical, abstract, repetitive, continuous rhythms.

BACKGROUND

Between the Pre-Islamic and Islamic

Of the 50 scrolls in the sample, 11 (S1-S11) are Hindu-Buddhist, and 39 (S12-S50) Islamic. By geographical area, 13 came from West Java, 22 from Central Java, and 15 from East Java. Hindu-Buddhist scrolls were not shown in West Java, but five are in Central Java and the rest in East Java. Of Islamic scrolls, 13 are from West Java, 16 from Central Java, and nine from East Java. Central Java is the most common area for scrolls, likely due to the foundation of three Islamic kingdoms of Demak, Pajang, and Mataram. All Hindu-Buddhist scrolls are made of natural stone, compared to four Islamic. Among the remains, 33 are made of wood, and two of other material, such as plaster. Eight Hindu-Buddhist and 16 Islamic scrolls are decorated with animal, humans, geometry, and Arabic calligraphy.

Scrolls: 50		HB: 11	I: 39		
			IT: 17	ID: 10	IR: 12
Area	West 13/ **Central 22/** East15	0/5/6	4/7/6	5/4/1	4/6/2
Location	**Prayer hall 20/** Serambi 12/ Outside 7		6/6/5	6/4/0	8/2/2
Material	**Wood 33**/ Stone 15/ Other 2	0/11/0	12/4/1	10/0/0	11/0/1
Attachment	Decorated 24/ **Not-decorated 26**	8/3	6/11	4/6	6/6

Scrolls within the Islamic

Of the 39 Islamic scrolls, 17 are transitory, 10 are from Dutch colonisation, and 12 are renovated/reproduced. In the transitory, four scrolls appeared in West Java, seven in Central Java, and six in East Java. Each of six scrolls was shown in the prayer hall and in the serambi, and five outside a mosque building. Wood is predominant in 12, but stone was used in four scrolls. One had other material. 11 scrolls are not adorned. During the Dutch colonisation era, five scrolls were from West Java, four from Central Java, and one from East Java. Six are shown in the prayer hall, and four in the serambi. Scrolls are not present outside. All are made of wood, and six are not embellished. Of renovated/reproduced scrolls, four appeared in West Java, six in Central Java, and two in East Java. Eight scrolls are shown in the prayer hall, and each of two is present in the serambi or outside. All are made of wood, except for one. Half of 12 scrolls are decorated. Interestingly, S47 (Agung Jepara) and S48 (Agung Mataram) are originated from the transitory, and S50 (Hidayatullah) from Dutch colonisation. S47 combines of Hindu-Buddhist scroll in idea and Islamic arabesque in form. Their rhythms resemble those of Islamic arabesque, but careful observation reveals a root as notion of life, which defines S47 as Hindu-Buddhist. S48, S50 are likely to be influenced by temples, due to naturalistic style and a vase for possessing water, symbolising 'life giver'. These three examples can provide sufficient evidence on Javanese Muslims' syncretic philosophy of Javanese as a cultural root and Muslim as accepting Islam religion.

Summary and Conclusion

Preferred background	Pre-Islamic & Islamic		Islamic		
	HB	I	IT	ID	IR
Area	East Java	Central Java	Central Java	West Java	Central Java
Location		Prayer Hall	Prayer hall=Serambi	Prayer hall	Prayer hall
Material	Stone	Wood	Wood	Wood	Wood
Attachment	Decorated	Not-decorated	Not-decorated	Not-decorated	Decorated=Not-decorated

Geographical area: Hindu-Buddhist scrolls in East Java continued mainly to Islamic ones in Central Java, due to inheritance of Hindu Majapahit culture to Islamic Demak and development during Pajang and Mataram.

Location in a mosque building: Prayer hall was the most common place for scrolls, although serambi was equally shared in the transitory. Beautifying the prayer hall can create metaphorical 'vision of paradise' which Sufi Islam underlined. Or it could endow Muslims visual pleasure during their visits to mosques.

Material: Stone was the chief material of scrolls in temples, the same as tumpals, kala-makaras, and lotus buds. This trend continued to the Islamic transitory, but unlike other motifs, scrolls preferred wood than stone. Pragmatically, stone material is too heavy to stand on mihrabs, minbars, and pillars in mosques.

Attachment: Tradition of not adorning scrolls was shown in the Islamic period, compared to the preference of decoration in Hindu-Buddhist scrolls. An explanation can be pursued. Hindu-Buddhist scrolls produce new branches, coexisting with animals, human beings, and jars, to provide a paradisiacal and abundant atmosphere where gods reside. By contrast, mosque ornaments need to be stylised in accordance with principles of Islamic ornament. The *hadith* warned extravagant decoration, for fear of disturbing concentration among prayers. Moreover, limited space in mosque buildings should be considered to embellishment.

In short, Islamic scrolls in Central Java continued from Hindu-Buddhist ones in East Java, changing from stone to wood. Despite no commonality between two periods, the frequent appearance of scrolls in contemporary mosques gives evidence of their continuity in Javanese mosque ornamentation symbolically and aesthetically.

ANALYSED BY BASIC TYPE OF RHYTHM AND ITS SUBDIVISIONS

This section tests the continuity of scrolls by rhythm. In order to answer sub-question 4 (What if any was the influence of Hindu-Buddhist scrolls on Javanese mosque scroll designs?), the 50 scrolls were perceived several times at regular intervals.

Rhythm is an organized visual movement, built around repetitions of strong and weak design elements, creating repeated beats. Rhythms can be divided into regular or irregular. In this analysis, they are basic type, and vertical, horizontal, and diagonal of the regular are its subdivisions. Continuity of scrolls between the pre-Islamic and Islamic periods is assessed on the degree of regularity and constancy of rhythms: (i) verifying the presence of each characteristic of rhythm in all scrolls, and (ii) measuring their regularity

by scaled value and establishing their modes and total numbers. If scrolls undulate repetitively and constantly, making the most regular rhythms, they are categorised as much. Interrelationship was considered between the most and the least regular in scrolls.

Regular*/Irregular**

> Take any form you please, and repeat it at regular intervals, and you have, whether you want it or not, a pattern, as surely as the recurrence of sounds will produce rhythm or cadence. The distribution of the parts need not even be regular (Day 1903).

Four examples are assessed to observe regular/irregular in scrolls, and how constant these rhythms appeared. A priority was given to only one type of rhythm. Regular consist of consistence and repetition in beat, while irregular occur inconstantly without repetition, lacking rhythms. In design element, regular can be perceived when scrolls undulate in circular, oval, and spiral in the same direction, based on the similar type of line and shape. In the sample, Hindu-Buddhist S1 and Islamic S19 have regular, while Hindu-Buddhist S6 and Islamic S15 display irregular. As S1 repeats continuously and strongly, it is graded as much, compared to S19 as some due to weaker regularity than S1. S6, S15 have irregular, as little due to few beats.

S1 (Borobodur temple*) much regular	S19 (Al Marunda*) some regular
S6 (Panataran temple**) little irregular	S15 (Agung Demak**) little irregular

PRESENCE: Of the 50 scrolls, 24 have regular and 26 irregular. Of the regular, eight are Hindu-Buddhist and 16 Islamic. Three Hindu-Buddhist and 23 Islamic scrolls display irregular. Both types were fairly used between two periods. Chronologically, regular were more favoured in the Hindu-Buddhist period, but irregular suddenly became vogue in the Islamic transitory, making radical transfer from temples to mosques. But gradual syncretism of Hindu-Buddhist and Islamic ideas and forms is expected from the next era.

Scrolls: 50		HB: 11	I: 39		
			IT: 17	ID: 10	IR: 12
Basic	**Regular 24/** Irregular 26	8/3	3/14	6/4	7/5

FREQUENCY: Regular were more used than irregular. They were very popular in the Hindu-Buddhist period, but this trend shifted in the next period, almost evolving out. Recovery was partially seen in S31-S32 (Agung Yogya). In this royal mosque, rather stylised S31 and naturalised S32 expose the Hindu-Buddhist 'Golden Germ' and prove syncretic Islam. By contrast, rarely used irregular in Hindu-Buddhist scrolls became dominant only in the transitory, despite less use in S45-S46. S46 (Agung Jepara) has refined quality, due to the famous woodcraft in this area. Resembling arabesque in form, it has Hindu-Buddhist idea.

Modes and total numbers+: regular/irregular[50]

Hindu-Buddhist: Regular (mode: much). Total numbers indicate the use of regular almost double than irregular in the sample. Islamic: Regular (mode: none). Total numbers indicate almost the same use of two types, but reveal a very big difference between them in the transitory.

CONTINUITY/INFLUENCE: Regular in Hindu-Buddhist scrolls were echoed in the Islamic period, but their influence tended to be weak. When Hindu-Buddhist scrolls and Islamic arabesques encountered in Javanese mosques in the Islamic transitory, how was their assimilation, so that regular in Hindu-Buddhist scrolls could not influence Islamic ones?

Vertical/Horizontal/Diagonal of the Regular

Regular rhythms can be divided into vertical, horizontal, and diagonal. Three types were examined in the 24 regular. Hindu-Buddhist scrolls undulate vertically and horizontally. Central Java has upward rising scrolls or rectangular panels with scrolls. In East Java, motifs are concentrated in horizontal bands. This was confirmed during the researcher's fieldwork too. In addition to two types of rhythm, the researcher often observed diagonal in temples and mosques, especially in contemporary mosques where Islamic arabesque is often present. According to literature, a term 'diagonal' was neither discussed in scrolls nor in arabesques. Were 'diagonal' neglected, due to a few examples in temple and mosque ornamentation, seen in S2 (Mendut temple), S4 (Kalasan temple), S37 (Caringin Labuan), and S40 (Sunda Kelapa)? A challenge of analysing scrolls by rhythm is waiting for us.

In this analysis, any sloped rhythms are regarded as diagonal. As some scrolls have more than one type of rhythm, multiple options were allowed. Hindu-Buddhist S5 and Islamic S31 display vertical, Hindu-Buddhist S8 and Islamic S32 horizontal, and Hindu-Buddhist S4 and Islamic S37 have both horizontal and diagonal. S5, S31 are graded as much, due to their continuous vertical undulation. S8, S32 undulate regularly in horizon, marked as much, S4, S37 as some in both, due to a few beats.

PRESENCE: Of the 24 regular, 12 have vertical, 13 horizontal, and 11 diagonal. Of the vertical, three scrolls are Hindu-Buddhist, and nine Islamic. Six Hindu-Buddhist and seven Islamic scrolls have horizontal, two Hindu-Buddhist and nine Islamic diagonal.

FREQUENCY: Horizontal were the most common between two periods, particularly in Hindu-Buddhist scrolls. Stylised S8 (Panataran temple), S9-S10 (Djago temple) in East Java differ from natural S2-S3 (Mendut temple), S4 (Kalasan temple) in Central Java. The same type of horizontal in S4, S9 reappeared in S32, S24 respectively, indicating continuity. Interestingly, S2 (Mendut temple) used freely three types of rhythm in a square panel, but S40 (Sunda Kelapa) had to be fitted them in the corner of the gate. Both can signify 'the start of life' in Hindu-Buddhism and 'the vision of paradise' in Islam. All types in Hindu-Buddhist scrolls continued in the Islamic period more or less.

CONTINUITY/INFLUENCE: Continuity of Hindu-Buddhist scrolls in Javanese mosques is not constant by subdivisions of regular. If there was, horizontal connected two periods.

[50] S1=borobodur; S2-S3=mendut; S4-S5=kalasan; S6-S7=panataran; S9-S10=djago; S11=jawi; S12=tralaja Muslim grave; S13-S14=pajlagrahan; S15=agung demak; S16-S17=sunan giri; S18=agung kasepuhan; S19=al marunda; S20-S22=sunan kalijaga; S23-S24=astana mantingan; S25-S27=sendang duwur; S28, S48=agung mataram; S29=agung solo; S30=al anwar angke; S31-S32=agung yogya; S33=mukarmah bandan; S34=agung malang; S35=al wustho mangkunegara; S36=kampung nembol; S37=caringin labuan; S38=cut meutia; S39=raya cipaganti; S40=sunda kelapa; S41=soko tunggal; S42-S43=sabilliah malang; S44=al ukhuwah balai kota; S45=astana mantingan; S46-S47=agung jepara; S49=kauman semarang; S50=hidayatullah

Conclusion

Preferred rhythms (50 S)	HB	I		
		IT	ID	IR
Regular/Irregular	Regular	Irregular	Regular	Regular
Regular: Vertical/Horizontal/Diagonal	Horizontal	Diagonal	Vertical	Diagonal

Regular/Irregular: Continuity between the Hindu-Buddhist and Islamic periods occurred by regular with insignificant influence.
Vertical/Horizontal/Diagonal: Horizontal were the most common, especially in Hindu-Buddhist scrolls, and vertical and diagonal in the Islamic period. Within the Islamic period, inconsistent relationship developed across different eras. Diagonal in the transitory reappeared in renovated/reproduced scrolls, while vertical favoured in Dutch colonisation. Any particular rhythms neither continued fully to the next period nor affected each other.
No rhythms continued strongly between two periods by basic type of rhythm and its subdivisions. Any rhythm was allowed to temple and mosque ornamentation, giving freedom to local genius who beautifies their sanctuaries, according to the concept of 'the start of life' and 'the vision of paradise'. It also meant that arbitrary and chaotic syncretism between Hindu-Buddhist scrolls and incoming Islamic arabesque took place in the Islamic transitory. Hindu-Buddhist scrolls had a revival later.

SUMMARY AND CONCLUSION

This chapter is the last analysis which aimed at answering sub-question 4: What if any was the influence of Hindu-Buddhist scrolls on Javanese mosque scroll designs?
Five aspects are tested in 50 scrolls. (1) background - period/geographical area/location/material/attachment), (2) basic type of rhythm (regular/irregular) and subdivisions (vertical/horizontal/diagonal of the regular), (3) five further characteristics (repetitive/non-repetitive, harmonious/disharmonious, single/multiple, strong/weak, continuous/
discontinuous), (4) other elements (smooth/rough in texture), and (5) principles (progressive/non-progressive in proportion) of design.

Background

Hindu-Buddhist scrolls were more found in East Java. They are made of stone and decorated. Within the Islamic period, Central Java, the prayer hall, wood, the absence of decoration were common. Islamic scrolls in Central Java are likely be influenced by Hindu-Buddhist scrolls in East Java, changing from stone to wood. However, the constant use of pre-Islamic scrolls throughout history can prove continuity in Javanese mosques.

Basic Type of Rhythm and Its Subdivisions

Regular/Irregular: Regular played a main role in connecting Hindu-Buddhist and Islamic scrolls, although their influence was not strong.
Vertical/Horizontal/Diagonal of the Regular: Horizontal were the most common overall, especially in Hindu-Buddhist scrolls. Vertical and diagonal were favoured in the Islamic period. Within the Islamic period, inconsistent relationship developed across time. Diagonal in the transitory reappeared in renovated/reproduced scrolls, while vertical predominated during the Dutch colonisation era.
No rhythms were strongly continued between two periods by basic type of rhythm and its subdivisions. Any type was allowed in temple and mosque ornamentation.

On Mihrabs

Scrolls on mihrabs are mostly located in Central Java. They are made of wood without decoration. Scrolls favoured diagonal in particular. Additionally, continuous rhythms were the most common. Smooth and non-progressive were displayed. All Islamic scrolls had equal use of vertical and diagonal, while those on mihrabs revealed diagonal.

According to all the findings, continuity of pre-Islamic scrolls in Javanese mosque ornamentation happened in five aspects. Influence was neither consistent nor strong. When Hindu-Buddhist scrolls with animals in vast temples had to yield their freedom into tiny mosques, and change to lifeless shapes, due to the *hadith*, their identity can only be preserved in symbolism. 'The start of life' in Hindu-Buddhist scrolls had to encounter 'the vision of paradise' in Islamic arabesques, to sanctify and beautify mosques, especially on mihrabs. Confronting this task, symbolic Hindu-Buddhist scrolls did not surrender, instead invited Islamic arabesques to be symbolic in sacred Javanese mosques. Consequently, geometric and mathematical Islamic arabesques had no choice of denying the invitation, due to Sufi Islam in Java. Their different principles in ornamentation became assimilated by tolerant and inventive local genius, despite momentary chaos in their first meeting in ideas and forms. Soon after, Javanese Muslims brought back heritage. Why? What they are looking for was the same Golden Fleece: 'the start of life' and 'the vision of paradise'. Scrolls in Javanese temples and mosques are the most cosmopolitan motif, sharing the characteristics of repetitive, harmonious, and continuous rhythms with Islamic arabesques in common. 'The Golden Germ', a key for Hindu-Buddhist scrolls, was still intact in Java.

SUMMARY & CONCLUSION

The English text of Summary & Concluse is found in the last part of the book written in Korean.

Islamisation	Source	Preachers	Doctrine	Communication	Decoration
Stage 1* 15c–1615 (transitory)	Local Malay	Wali songo	Sufism	Oral lecture	Pre-Islamic, Chinese
Stage II 1615-1945 (Dutch colonisation)	Mecca, Medina	Ulamas: Al Makasari, Al Bakari, Al Bantan	Shariah/ Orthodoxy	Pesantren and Kitab	European, Orthodox Islamic (calligraphy)
Stage III 1945-present (contemporary)	World	Ulamas: N. Madjid, A.Rais, etc.	Modern Scientific	Pesantren, university, prints, radio, ultimedia	Pan-Islamic (arabesque, geometry)

For Fanani, stage 1 (1000–1650), stage 2 (1650-1900), stage 3 (1900-2000).