

FROM CULTURE TO INNOVATIVE PRODUCT: BATIK DESIGN IN PORCELAIN WARES

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ABSTRACT

In this paper, the Batik Merbok motifs are proposed to be used in porcelain wares using 3D (CAD) software. The natural motifs developed are seen to have potential to be incorporated in tableware collections or as a daily home-product usage. It is a conceptual paper which explaining the motifs developed by Batik Merbok and discussing the 3D (CAD) design developments. The motifs were developed with a combination of flora, fauna and the humanmade historical artefacts which were inspired from the surrounding areas of Merbok, Kedah. A detail research results are not yet conclusive; therefore, the researchers will continue to develop the porcelain wares further and investigate the consumer perceptions towards the incorporation of the batik motifs. It is one of the sole efforts of bringing Batik Merbok into exploring another genre of designs.

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Keywords: *Batik motifs, Natural patterns, Porcelain wares, 3D (CAD)*

INTRODUCTION

Batik Merbok is a cultural textile product produced by researchers and academicians of Universiti Teknologi MARA, Kedah (UiTM Kedah). Each motif was developed based on the documentation and interviews with the residents of Merbok. The dominant flora and fauna motifs (paddy, mangrove and the bird) were identified and documented from the surrounding area of Merbok. Moreover, the historical artefacts of Merbok were explored and proposed to be another potential human-made motif that can also be applied to batik designs. The main aim of the creation of Batik Merbok is to enhance the economic standard of the Merbok local community (Husin et al., 2008). UiTM Kedah is the organisation that is responsible in carrying out the study, developing designs, documenting, strategising the market plan and providing consultancy advice as well as becoming the organisation that ensures high-quality contemporary batik designs are produced for the potential consumers. The name Batik Merbok was inspired from the name Merbok district itself, which was associated with one particular bird known as Burung Merbok or its scientific name is *Geopelia striata* (Husin et al., 2008). Burung Merbok, a small bird which is commonly found in Merbok and up till the present has become a favourite pet for the locals because of its beautiful singsong voice (Husin et al., 2008).

This paper will discuss the relation of applying the natural motifs of batik into the built environment, the development of Batik Merbok and batik designs in Malaysia in brief. The development of ceramic and porcelain ware in Malaysia and the proposal of the incorporation of batik motifs in porcelain wares as the 3D designs will also be discussed further. It is hoped that this study can be a platform for Batik Merbok to explore another genre of product innovations in the future.

NATURAL ELEMENTS: THE APPLICATION IN BUILD ENVIRONMENT AND THE AWARENESS TOWARDS DESIGN SUSTAINABILITY

Lots have been learned and benefitted from just by looking, applying or adopting nature (Benyus, 1997; Orr, 2002; Thorpe, 2007; Helms et al., 2009; Heerwagen, 2003; Montana-Hoyos, 2010; Gruber et al., 2011; Gray and

Birrell, 2014). Yeler (2015) stated that nature has the capacity to change the life of humanity for the better, by applying nature to design disciplines using the approach of observation of events and processes. Normal beings will always want to be connected or associated with nature (Wilson, 1984). Biophilia (Wilson, 1984) and biophilic design (Kellert et al., 2008) explained the importance of having nature nearby, and it can be seen by the adaptation of the natural elements (living, non-living or imitation) into the built environment (Ryan, 2014; Sayuti, 2016; Sayuti et al., 2018). This study can be associated with natural shapes and forms element, one of the six biophilic design elements by Kellert et al., (2008) which focus more on the patterns of nature in human-made designs that include the natural traits, motifs, forms or structures.

One of the key points of the application of the natural motifs is to show the abundant natural elements in Merbok, Kedah which are the primary sources of the inspiration. The application of the natural motifs is important as it can help to create awareness towards sustainability and environment conservation for the next generation. Although “sustainability” as a concept is not new, the vast usage and over-consumption of natural resources due to human activities in the industrial world caused a tremendous impact and posed a significant threat towards the environment (Montana-Hoyos, 2010). Thorpe (2007) has divided the sustainable design into three primary focuses of ecology, economy and culture in the demanding state of developments and globalisation from the revolution of the industrial era till today’s design world. Therefore, this project incorporated the natural elements of Merbok’s flora and fauna into designs within built environment (in industrial design perspective - daily use products). It is aligned with the biophilic design principles and hopefully could trigger the awareness towards the ecology conservation with the use of proper materials which create no or less impact to the environment.

BATIK DESIGN: THE ART AND CULTURE OF MALAY ARCHIPELAGO

Batik, according to Aziz (2006) was adapted from the word ‘point’ which is an accumulation of pointillism that produced lines that can create a drawing. To be precise, batik is a hand drawing technique using wax and hand

dyeing colouring on fabrics (www.dictionary.com, 2017). The definitions can be associated with the variety of types and methods resulting from the different materials as there are various definitions of batik in Malaysia (Aziz, 2006). Batik is well known in Malaysia and also Indonesia as batik is one of the prominent Malay crafts. In Malaysia, batik industry had started in the Malay Peninsula, particularly in Kelantan and Terengganu in the early 20th century. At that time, batik was only made as a cloth cover for men and women. Later on, it became a modern costume and complementary wear for official functions. The traditional Batik Pelangi was told to be an early development of batik-making in Malaysia which started during the eighteenth and nineteenth centuries by the Malays (Redzuan and Aref, 2010). Aziz (2006) mentioned the categories of batik in Malaysia are divided into three (3) types namely block batik, screen batik and hand-drawn batik. The methods and materials employed in the batik manufacturing process can distinguish the batik design and thus, helps to classify the types of batik.

History stated that batik originated in Indonesia but, the distinctive features in the motifs and designs from both countries can still be seen. The block printing batik is believed to originate from Indonesia, and this technique uses the batik patterns made of metal, dyed with liquid wax and then applied on the cloth. The next category of batik is screen batik which is well known in Kelantan and influenced by the Siamese elements since the early 1900s (Aziz, 2006). This type of batik uses cotton cloth thread and is designed as a cloth cover. Lastly, the hand-drawn batik or known as batik canting which uses a canting, a pen-like tool filled with melted wax (Aziz, 2006). It was known as batik canting because of the usage of the hot liquid wax to sketch flowers and natural patterns on a long stretched fabric. The wax is used to hold and control the colour from spreading beyond the intended designs or patterns. The fabric is then painted with coloured dye paint using a brush.

The ideas in designs and motif patterns reflected the cultural symbol of the Malays. The Malay patterns can be seen in the shape of the motifs which are taken from the observations and experiences based on history, ideology, culture, customs and beliefs. Nevertheless, the motifs in batik designs were mainly adapted from natural motifs of flora and fauna. The animal-shaped motifs were refined as not to violate the sensitivity in Islam. Most of the batik designs were and are still using the motifs of flora and fauna whereby each

design represented is unique and different. According to Hussin (2006), the formation of the realistic natural motifs for batik designs are still prohibited in Islam. Therefore, the ideas used in the motifs development are lightened and simplified. For example, for the fauna motifs, the inspired motifs which remain to be used in batik designs are siku keluang, sisik ikan, kaki lipan, dada lipan dan sirip ikan. Hussin (2006) also added that the advent of Islam in the Malay States, particularly to Peninsular Malaysia had contributed and influenced the development of motifs and patterns in the local textile production. Batik industries nowadays have become a vast textile industry that has reached people globally. A study by Redzuan and Aref (2010) discussed the factors that contributed to the development of handicraft industries that solely focused more on batik industries in Kelantan where the batik industry is mainly situated.

From the entrepreneurial aspect, Manan and Mamat (2011) discussed the innovative behaviour and entrepreneurial capability on batik firm performance that influenced the profit and sales growth performance in batik industries. Moreover, Mokhtar and Wan-Ismail (2012) examined the marketing strategies of the high and low performances of batik Small and Medium Enterprises (SMEs). These studies have shown the development level of batik industries in Malaysia which also can be a guideline to improve and broaden the market of batik design industries. Furthermore, Batik Merbok has not only focused on the formal attires but also on other wearable fashion products such as elegant shawls which are in trend nowadays. Batik Merbok had even won awards for the entrepreneurship efforts from the central campus, UiTM Shah Alam, Malaysia.

Batik Merbok Motifs

Batik Merbok motifs can be classified into three (3) motifs which are flora, fauna and human-made historical artefacts motif (Husin et al., 2008). Firstly, the floral motif was inspired by the paddy plants and the mangrove trees that are abundant in Merbok. Kedah is synonymous with paddy fields and is known as the Negeri Jelapang Padi or Rice Plant County. Thus, the paddy or rice plant was selected to be one of the motifs which symbolised the state of Kedah in general. On the other hand, the mangrove trees can be seen from Titi Semeling; a bridge over Merbok River that connects Merbok and Sungai Petani. The Merbok River is known to have at least

30 mangrove species identified and the UNESCO recognises the river as the second largest bio-sphere ecosystem in the world because of its diverse mangrove species and wildlife.

Secondly, the fauna motif was taken from one of the dominant species of bird which is known as Burung Merbok, or its scientific name is *Geopelia Striata* which can be found in Merbok. This small bird is well-known for its beautiful singsong voice and the uniqueness of the dotted patterns on its feathers which becomes the main feature of the fauna motif in Batik Merbok.

Lastly, the human-made motifs were developed from the historical artefacts in the Merbok area such as brick remains with Sanskrit writing which was found on the tombstones and carving motifs which can be observed on old traditional houses around Merbok and Lembah Bujang districts. The brick motif was identified from the remnant of temples (Candi or historical sites from the ancient civilisation) and other historical buildings that still exist in Merbok, Semeling and Pengkalan Kakap. The Pengkalan Kakap Mosque, the tomb of Sultan Muzaffar Shah 1, the vestige of Pulau Tiga Castle and Lubuk Pusing Palace are a few historical remains which also have become the tourist attractions in the Bujang Valley districts (Husin et al., 2008). These historical remains inspire the creation of human-made motifs on Batik Merbok designs. However, the original features can still be seen in all Batik Merbok designs. Table 1 below illustrates the examples of six (6) motifs of Batik Merbok.

Table 1: Six Batik Merbok motifs

	Motif
Flora motif	
Mangroves	

<p>Paddy/ Rice plant</p>	
<p>Fauna Motif The Merbok Bird or Geopelia Striata</p>	
<p>Manmade Historical Artefact Motifs The Bricks</p>	
<p>Wood Carving</p>	
<p>The Sanskrit language/ writing</p>	

THE HISTORY OF CERAMIC AND PORCELAIN DESIGN

It is crucial to explain the history of ceramic and the art of porcelain design in brief in relation to this project. Ceramic is the earliest crafts done by man. Pots were made to fulfil the needs of everyday life and spiritual purposes. The early usage of ceramic was mainly used to store food and water. Besides created for domestic functions ceramics were also used for decoration, and its shapes and patterns measured the uniqueness of ceramic. Traditionally, natural elements which comprise of earth, water, wind and sun always inspired the pot makers, while the motifs of flora, fauna and geometrics are the adorning attraction that changes with the flow of time and era (Kendut, 2006). Ceramic existed since a long time ago and had evolved through the process and changes according to particular periods from the Neolithic to the Metal age, Islamic age, the Colonial age and Modern and until recently. Time has shown the continuity of art ceramic productions in Asia. According to Bertolissi, (2017), ceramic is defined as products that are produced from pure clay which is blended with a range of formula-based mixture with a quantity of water and other essential materials. The result of the mixture is then created, and then aesthetically stylised before the glaze is applied to strengthen its form. The ceramic then will go through a combustion process in certain temperatures.

Traditional ceramics were divided into four (4) types by the history of its artwork, which are Terenang, Mambong, Pasu Sarawak and Labu Sayong. Arifin, Abdul Rahman and Masron (2010) did a study on the history and the development of Labu Sayong in Kuala Kangsar, Perak where they claimed there is a need to preserve the legacy of Labu Sayong making and designs. According to Nasir (1981), prehistoric age has its own culture that represented the human activities during that period. Although the prehistoric people had no writing skills, they had competent skills in using stone tools, ceramic and cave painting. Prehistoric ceramic had represented their abilities and wisdom to create various items out of clay as a tool for physical and spiritual needs. These claims were proven by the discovery of prehistoric artefacts in Neolithic ceramics. Among the Neolithic sites found in Malaysia are a few sites in Upper Perak, Complex Nenggiri in Kelantan, Pahang Small Cave, Niah Caves in Sarawak and the Hill Skull and Tingkayu Valley in Sabah (Majid, 2003). As for porcelain, it uses a white clay as the main

ingredient and has a very smooth and delicate surface (Bertolissi, 2017). The opacity and translucency of the porcelain determine the best quality in porcelain design. Porcelain also has high endurance, and it is one of the most durable materials in ceramic making that makes it valuable. Fine china and bone china are among popular forms of porcelain. The porcelain ware originated from China in the fourteenth century and became a leading producer and exporter of porcelain, apart from silk and other luxury goods in the Ming Dynasty, in the sixteenth century (Metropolitan Museum of Art, 2017).

Contemporary Ceramic Design

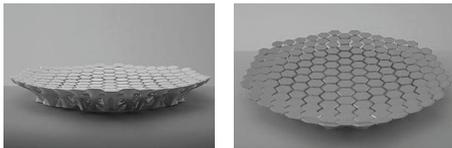
A similar study by Ayob and Jusilin (2016), is on the development of contemporary ceramic design which applied an ethnic Borneo motif, Linangkit. The Linangkit can be considered as a new innovative motif design, and which was done to preserve the national cultural heritage. A project was conducted which had taken the needlework techniques of Linangkit design and turned them into a three dimensional (3D) products. Furthermore, Zhang and Yang (2017) describes their study on two ceramic-forming technologies based on 3D printing as opposed towards traditional ceramic-forming technology. This project used a Computer Aided Design (CAD) software and a 3D printer to produce ceramic vase, which uses a different procedure from the traditional techniques. Another similar study by Lin. R.T (2007), focuses on transforming Taiwan aboriginal cultures into modern ceramic product designs which show cultures, histories and nature that are the main inspirations for the contemporary ceramic ware design. Meanwhile, Kang (2016), conducted a study to improve the ceramic productions and trade handcraft community in Cambodia through successful social design practices among the designers and the handcrafted community. More studies were conducted in emotionally durable ceramic designs which illustrated how designers could be inspired and translate the ideas to produce mass-produced ceramic objects, which were conducted by Lacey (2009) and by Xin and Xiao (2009). These studies are the breakthrough of “form follow function” concept which challenges the traditional way of ceramic making. Although these studies are different from the similar studies as deliberated above, it is shown that ceramic ware designs have developed not only to serve the functionality of daily use products, but it can also encourage emotional connection between the users and the products.

Although nowadays various techniques and processes are applied, most designs on porcelains still uses flora and fauna elements as motifs. These contemporary designs have inspired the authors to apply the unique motifs of Batik Merbok which is believed to have a potential to be marketed globally.

THE APPLICATION OF BATIK MERBOK MOTIFS IN PORCELAIN WARE DESIGN

The Batik Merbok motifs found in this research are seen to have a prospective significance that needs to be further developed and applied as homeware products. In this paper, porcelain ware was chosen not only for the contemporary usage in dining but also for its potential to be innovative decorative items. For this study, six (6) designs were developed based on the six (6) Batik Merbok motifs using the 3D CAD (Computer Aided Design) software (Rhinoceros 5.0 and 3D Studio Max) as seen in Table 2 below. The flora and fauna motifs (mangroves and burung merbok) are formed using a 3D construction where the design is constructed from the form of mangrove roots and the wings of burung merbok. Another two (2) human-made motifs which are the bricks and wood carving are also formed using the construction technique. However, other motifs are designed using the mapping technique where the motifs are embedded directly on the porcelain ware designs. Although the 3D software helps to visualise the ideas, these proposed designs can still be improved and developed further.

Table 2: Batik Merbok Motifs in Porcelain Ware Designs using the 3D Software

Motifs	Sample of Design
Flora motif Mangroves	
Paddy/ Rice plant	

<p>Fauna Motif</p> <p>The Merbok Bird or Geopelia Striata</p>		
<p>Humanmade historical artefact Motifs</p> <p>The Bricks</p>		
<p>Wood Carving</p>		
<p>The Sanskrit language/ writing</p>		

CONCLUSION AND FUTURE RESEARCH

The initial study of this project is to design porcelain wares by using the Batik Merbok motifs as proposed designs for new product innovations for home usage. The usage of the Batik Merbok motifs in the porcelain wares showed a combination of uniqueness and elegance which is worth exploring further to become luxurious decorative collections for porcelain collectors or ceramic ware enthusiasts and also as daily use products. The ideas were generated using the 3D software as it was easier to develop rather than produce the tangible porcelain wares. The designs which produced using the 3D software can be further developed and improved.

As a future project, the six (6) proposed 3D designs will be tested visually to gain feedback from the potential consumers on their preferences towards the design. The researchers will also gather feedback on which

of the six (6) Batik Merbok motifs that is most preferred. The feedback from the potential consumers may determine a new product innovation development for Batik Merbok, not only for the local market but also for the global market in the near future.

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