

Form Implementation of Seating Behaviour based on Kuda Kepang Cultural Dance Movements

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Abstract: To understand the place of seating in modern societies, it is useful to understand how it derives its concepts from relevant elements. Therefore, this research will look into Kuda Kepang dance movements and notations; how they can be developed and used in creating new seating design and seating posture. The research therefore aims to provide a study on how to use its movements in developing seating designs. Semiotics is used in this study as semiotics describe a triangular relationship between “sign”, “object” and “interpretant”. The sign is the actual thing being viewed. The object is the article referred to by the sign and the interpretant is the viewer’s individual concept of the sign. To understand the sign, a review of the related literature and research of other researcher regarding seating was made. To study the object, several seating prototypes are made, developed and tested using real materials.

1 INTRODUCTION

The beginning of the twentieth century was a time of revolt against the patent seating movement. Seating design was becoming an integral part of the house and office setting. However, its role today has been constrained. It is designed as a place to situate oneself, not for comfort, but to take the strain off one’s leg and back. Specifically, most mass-produced chairs have a minimal concern for ergonomics (Akintilo, 2001; Saul G, 2011). Seating design focuses on the way it is dissected into a stool, backrest and the need for elevation. Changes in these three elements can result in a pleasing or unpleasing effects, depending on the design intended function (Carstensdottir et al. 2011). To date, numerous studies have been carried out to look into seating design over the years. However, there is lack of specific studies on seating design based on human movements and behaviors. This research, therefore, aims to provide a study on how to use human movements and behaviors in developing seating design.

The next section presents the *Kuda Kepang* and its element, it also reviews previous work done by the Western designers and architects in relation to semiotics approach and also describes its influences on the seating behaviour and furniture design.

1.1 Kuda Kepang

Kuda Kepang is a traditional dance that is very popular in Malaysia especially in the state of Johor. It is originated from the Indonesian Island of Jawa and was introduced to this part of this country by Javanese immigrants in early 20th century (Ahmad, 2017; Foley, 1985). The dance dramatises tales of holy wars fought in the name of Islam during the time of Prophet Muhammad and his followers. Generally it is performed by 9 to 15 dancers, though the actual number depends on each group of performers. Likewise, the attire of the dancers is also up to the preference of each group performers. However, many still opt for the traditional Javanese clothes. The dancers are all males but on certain occasions like the Malay weddings and cultural events, female dancers are also featured. When there are both male and female performers, they will dance separately and give different presentations of the dance. In the *Kuda Kepang* performance each dancer is astride a two dimensional ‘horse’ made of hide or pleated bamboo and painted to make it look more attractive (Figure 1). One of the dancers will act as the leader and is known as *Dayang*. He will lead and direct the other dancers by using a whip. Each performer ‘rides on the horse’ and dances to the beat of traditional music, which accompanies the dance. The musical instruments used

include gongs, tambourines and angklungs (a percussion instrument made from bamboo). The dance is believed to have strong links to the spirit world. It is not uncommon to see a *Kuda Kepang* dancer entering a trance during a performance.



Figure 1: Dancers garbed in traditional Javanese clothes with the two-dimensional mock horse.

1.2 Oskar Schlemmer Influences on Movement

The most characterized artistic quality in Oskar Schlemmer’s work is his interpretation of space. He experienced space not only through mere vision but with the whole body, with the sense of touch of the dancer and the actor. He transformed human figure into abstract terms of geometry or mechanics his observation of the human figure moving in space. His figures and forms are pure creations of imagination, symbolizing eternal types of human character and their different moods; serene or tragic, funny or serious. The following Figure 2 can be considered fundamentally decisive in the transformation of the human body in terms of this stage costume (Gropius, 1979).

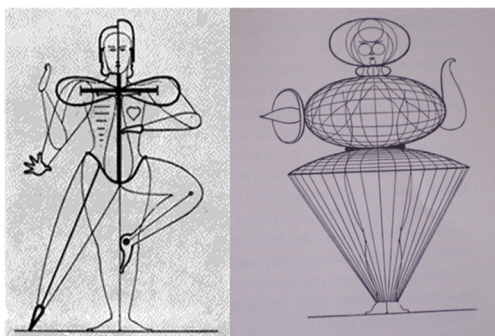


Figure 2: The Metaphysical forms of expression (left) and The Laws of motion of the human body in space (right).

1.3 Influences on the Seating Behaviour and Furniture Design

Peter Opsvik is one of the greatest influences to this research for developing a new way kind of seating because of his unique furniture designs. He makes objects desirable beyond their function and it is creating the basics for personal preference and taste (Mengshoel, & Opsvik, 1982). In the following Figure 3, Opsvik designed a system that provides support for different body parts while standing. The support members that one might need are plugged into a base as required. And they are all adjustable to the desired heights.



Figure 3 : Supporter prototypes developed during the Studio Håg period

2 STATEMENT OF PROBLEM

There are many researches and works being done regarding culture in the western country. However, their theories regarding product and culture is less adapted to Malaysia case. Therefore, a study regarding product and culture should be done to establish a theory of product and culture that can be further developed to promote creative and cultural industry in Malaysia especially the furniture industry. Since not many sources can be referred to for further research and the researcher is not able to gather detailed furniture design from other literatures and designers in Malaysia and also due to lack of information on seating design and implementation in relation to culture, this study would only give attention to the context relationship between “sign”, “object” and “interpretant”.

3 AIM & OBJECTIVES

The aim of this study is to transform Malaysian Culture Dances with special reference to Kuda Kepang movements into seating design and the main objectives of the research are as follows:

1. To create a new kind of seating behaviour based on the movement of Kuda Kepang Dances;
2. To explore the influences of movement in dances and culture in Kuda Kepang movement towards a new furniture creation; and
3. To assess these findings and influences, and demonstrate how it can be applied in a practical design.

4 METHOD

The aim of this study is to transform culture dances with special reference to Kuda Kepang dance into a seating design therefore, the stages involved in designing are as illustrated in figure 4 . Through these research activities, several criteria for seating models are established. The concept stage uses sketches, models and existing related furniture studies besides several criteria questions were established during the research process that led to possibilities for the research direction (Goldschmidt, & Rodgers, 2013). The design stage gives a physical form in terms of how it looks, how it is to be made, what it is to be made of, how it functions and its interactivity with users (Hyland, 2010 & Bing et al. 2011). Based on the review of the related literature and research, and the study of Kuda Kepang elements, several seating prototypes are made. The prototypes of the proposed designs have been developed and tested using real materials. It is aimed to provide different notions on how the Kuda Kepang elements can be transformed into a seating design. The following sections present three different types of seating designs. Each design is to be used at a different location with different kinds of usage.

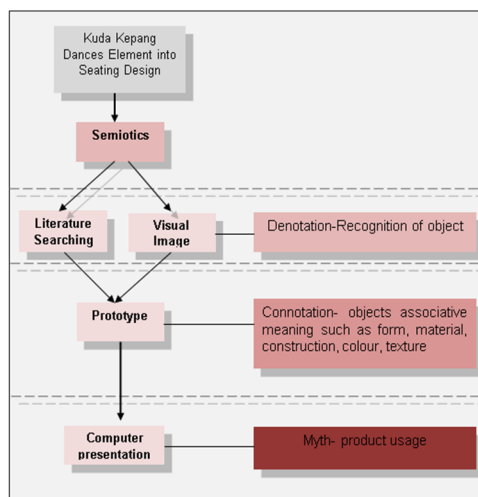


Figure 4: Research Design

Since the study is to transform the Kuda Kepang dances elements into seating design, semiotics are found to be useful to interpret the dances movement as a sign. Hjelm (2002) and Hu et al (2019) pointed out that the study of semiotics can assist us to become more aware of reality as a construction and the roles played by ourselves in constructing or designing it and semiotics provide the theoretical underpinning for art and design. Parsons (2009) cited the American father of semiotics, Charles Sanders Peirce who described that there was a triangular relationship between “sign”, ”object” and “interpretant”. The sign is the actual thing being viewed. The object is the article referred to by the sign and the “interpretant” is the viewer’s individual concept of the sign. Semiotics describe three ways by which meaning is communicated by signs. These are: (1) Denotation- covers the literal reading of it and it includes recognition of the object and literally reminds us of how it should be used. (2) Connotation- refers to an object’s associative meaning including its form, material, construction, colour and texture. (3) Myth- concerns the beliefs surrounding the object, these may include stories surrounding its creation, who may have owned it or others like it, and what it has been used for. (Hu et al , 2019; Ventura & Shvo, 2016; Umetani set al. 2012)

5 RESULTS AND DISCUSSION

5.1 Denotation: Kuda Kepang Movement 1

The first study on the first movement can be observed in Figure 5. Meanwhile, Figure 5 also shows the transformation of kuda kepong model on how the dancers move their body posture onto kneel step posture and how the posture of the movement 1 can be transformed into a kneel sit seater.

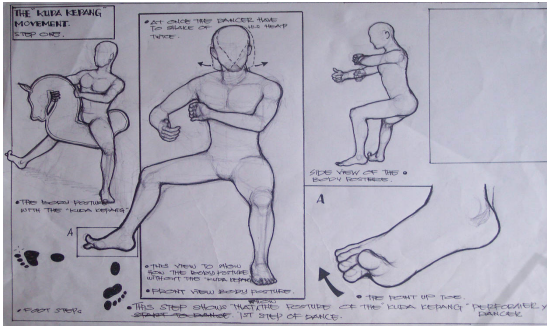


Figure 5: Transformation of the Kuda Kepang Dance Movement 1.

Meanwhile, a proposed study of a new way of seating is shown in Figure 6. This research has also found similar existing furniture that can be used for further research. The following Figure 7 shows the existing furniture that is already in the market.

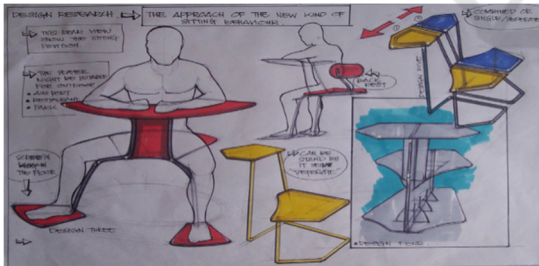


Figure 6 : A new way of seating derived from kuda kepong dance movement 1.

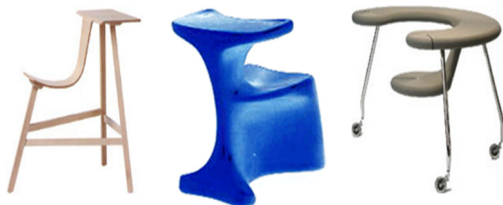


Figure 7 : Zocker (left), Allievo E Scolaro (middle) Easy ride (right)

5.2 Connotation: Proposed Dual sit Furniture from Movement 1

An ergonomic testing is carried out with two ways of seating. The two ways of seating are tested by several testers with different weights and heights. The prototype dual seat furniture has some characteristics as the existing furniture is designed by the existing designers. The proposed prototype can provide a cross-culture of seating behaviour. Users will be able to sit in different kinds of ways as per their sitting preferences (Figure 8). The proposed prototype chair can be used at restaurants and public waiting areas such as airport and train station.



Figure 8 : A new way of seating derived from kuda kepong dance movement 1.

5.3 Denotation: Kuda Kepang Movement 2

The second study on the second movement can be observed as the transformation of the movement into sketch in Figure 9. The figures show the dancers move their body posture onto right leg kneel step posture and how the posture from the step 2 dances can be transformed into a kneel sit seater as shown in figure 9. A proposed study of a new way of seating and seater is shown in Figure 10. The paper also shows several existing furniture that are already in the market for further study. See Figure 11.

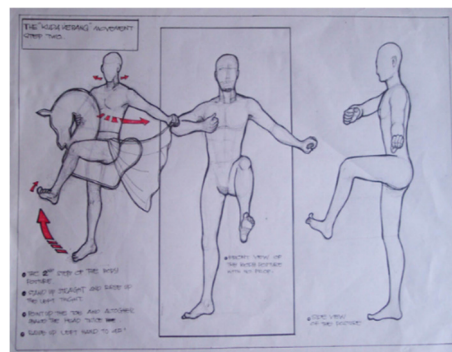


Figure 9: Study on Kuda Kepang Movement 2

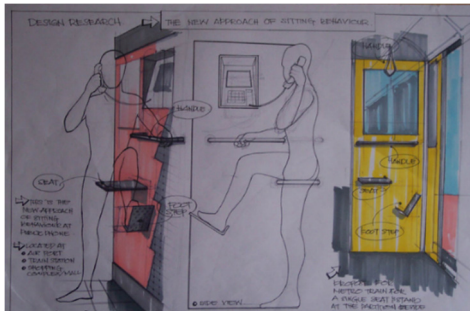


Figure 10: Study form from step 2 Kuda Kepang dance.



Figure 11 : Garden Stokke (left) and Supporter Hag (right)

5.4 Connotation: Proposed Prototype Outdoor Furniture from Movement 2

The furniture uses a combination of wood and metal that can produce a strong and long lasting seat. It can be used at a railway station, airport, bus station or public waiting area. The researcher has carried out several testings prior to developing the final product to ensure its effectiveness as shown in Figure 12. Based on the final product as shown in Figure 12, some kuda kepong elements can be seen from its design and structure.



Figure 12 : A testing is carried out on ergonomic aspects.

The testing is carried out using weaving techniques. Based on the testing feedback from the tester, they revealed that the design is really user friendly. It is really convenient to use by people. It also changes people’s behaviour towards non conservative design. The designs are not just about its function or object’s sculptural quality. In fact, it can make people realize the way it is being used as compared to the existing designs. The design is part of popular arts or performing arts where people can enjoy using it and appreciate its design.

5.5 Denotation: Kuda Kepang Movement 3

The third study on the third movement can be observed in Figure 13 and the transformation of the movement into sketch can be seen in the figure. The figures show the dancer move the body posture onto seating step posture and how the posture from the step 3 dances can be transformed into a seater. A proposed study of a new way of seating and seater is shown in Figure 14.

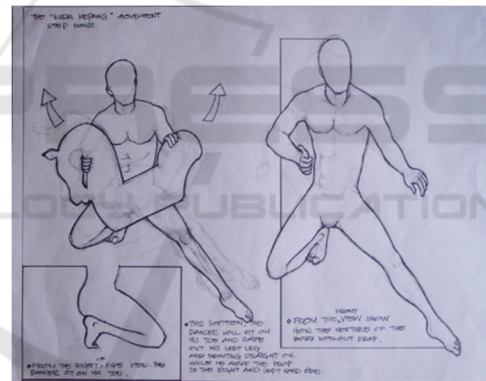


Figure 13: Study on Kuda kepong Movement 3

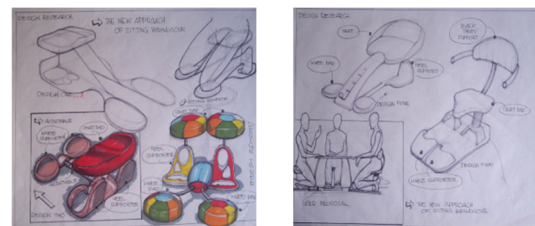


Figure 14: Study from Kuda kepong Movement 3

5.6 Connotation: Seating Design Approach and Height from Movement 3.

The prototype furniture consists of a combination of wood and aluminium frame. The furniture uses welded stands steel forms a curved surface, supported by a base. The chair is remarkably light; both visually and physically. This chair is appropriate for informal seating in cafeterias, reception areas, lecture rooms, and other domestic settings. (see Figure 15)



Figure 15 : testing on the ergonomic kneel sit for the level of seating

Based on the findings and the prototype product, the paper finds the design concept provided by the seaterseaters can make the user feels most comfortable when moving on the seaterseater or even when sitting down. The seaterseaters are designed to encourage movement and frequent changes in sitting position. It allows the body to find its natural point of balance - both in a forward working position and in reclining, relaxed position. Also, when sitting on the seaterseaters, users will be able to use it to distribute their body weights. This automatically straightens up and balances the spine properly over the pelvis.

However , the setback of the prototype seaterseater is it will not be able to provide a long term sitting comfort as compared to the existing kneeling seaterseaters. The prototype seaterseater does not provide a stable sitting position for the user. The sitting base has 30 degrees angle where users need to constantly force their legs to support their body from sliding forward.

5.7 Myth : Combination Series of Kuda Kepang Dance Movements as Wall Sit Furniture

This section shows a series of every Kuda Kepang dance movement as discussed in the previous section. It is combination of the whole kuda kepang dance movements. This final furniture design uses a combination of metal / aluminium and composite. The use of the materials can last long for outdoor use. The furniture can be used as a phone booth or kiosk at railway station, airport, bus station or public waiting area. The seaterseater will be able to change people’s behaviour towards sitting methods. This design also provides multi-functions. It is not only about the function or the objects’ sculptural quality. It can also produce a performing art of exhibiting the furniture. Different user who uses the furniture may have a different kind of sitting style. This indirectly creates the furniture to look unique like a small puppet theatre or one kind of a dance movement. Besides, the furniture can be seen as a rock climbing concept as shown in Figure 16. The combination of all kuda kepang movements is transformed into the series of seating. (See Figure 16.)

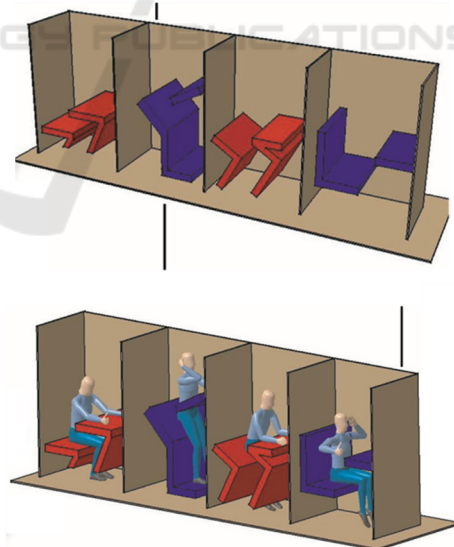


Figure 16 : each set represents a kuda kepang movement

6 CONCLUSIONS

The furniture can be used as a phone booth or kiosk at railway station, airport, bus station or public waiting area. Seating design based on Kuda Kepang dance and similar dances using horses will be able to address ergonomics issues. Although it does not produce a total comfort solution in seating posture and design, it can transform conservative seating designs into contemporary and unique seating design. It definitely improves seating behaviour and trend. The study reveals that the relationships between Kuda Kepang movements and seating design. The findings and proposed prototype seating should be viewed as preliminary and a further study is necessary to establish appropriate transformations for seating design. In the future, this research will expect original furniture and it will give people the opportunity to have unique pieces on the idea. The final furniture from this research is expectantly :

- Should fulfil the practical needs of modern life
- Should express the spirit of our times
- Should benefit by contemporary advances in the fine arts and pure sciences.
- Should take advantages of new materials and techniques and develop familiar ones.
- Should develop the forms, textures, and colours that spring from direct fulfilment of the requirement in appropriate materials and technique.

REFERENCES

- Ahmad, S. I. (2017). The practice of “Kejawen” in kuda kepeng dance. In *Proceedings of the 4th Symposium: The ICTM Study Group on Performing Arts of Southeast Asia* (pp. 160-164).
- Akintilo, A.A. (2001), *The Chair: A Study in ergonomic Design and Their application Within Society – Design for development in the Home Office*, university of Maryland, Baltimore County.
- Carstendottir, E., Gudmundsdottir, K., Valgardsson, G., & Vilhjalmsón, H. (2011, September). *Where to sit? the study and implementation of seat selection in public places*. In International Workshop on Intelligent
- Farrer, D. S. (2012). *The Performance of enchantment and the enchantment of performance in Malay Singapore*. Moussons. Recherche en sciences humaines sur l’Asie du Sud-Est, (20), 11-32.
- Foley, K. (1985). The dancer and the danced: Trance dance and theatrical performance in West Java. *Asian Theatre Journal*, 2(1), 28-49.
- Goldschmidt, G. and Rodgers, P.A.(2013). *The design thinking approaches of three different groups of designers based on self reports*. Design Studies 34. (2013). Pp 454-471
- Gropius, W. (1979) *the Theater of Bauhaus*, eye Methuen Ltd.
- Hjelm, S. I. (2002). *Semiotics in product design*. CID.
- Hu, B., Zelenko, O., Pinxit, V., & Buys, L. (2019). *A Social Semiotic Approach and a Visual Analysis Approach for Chinese Traditional Visual Language: A Case of Tea Packaging Design*. Theory and Practice in Language Studies, 9(2), 168-177.
- Hyland, T. (2016). *Craftwork as problem solving: ethnographic studies of design and making*.
- LI Bing, GUAN Hui-yuan, WU Zhi-hui (2011) *Study on Furniture Modular Design for Mass Customization*. CNKI Journal. Packaging Engineering
- Mengshoel, H. C., & Opsvik, P. (1982). *U.S. Patent No. 4,328,991*. Washington, DC: U.S. Patent and Trademark Office.
- prototypes: Introducing prototrials and prototrial-driven cultures. Design Studies, 49, 1-31.
- Pye, D.2000. *“The Nature and Aesthetics of Design”*. London: A&C Black Ltd
- Saul G. (2011) *SketchChair: An all-in-one chair design system for end users*. 5th International Conference on Tangible Embedded and Embodied Interaction, TEI’11; Madeira; 23 January 2011
- Sobel, A., & Sobel, M. (2001). *U.S. Patent No. 6,209,962*. Washington, DC: U.S. Patent and Trademark Office.
- Tim Parsons.(2009) *“Thinking: Objects Contemporary approaches to product Design”*, Switzerland: AVA Publishing
- Umetani, N., Igarashi, T., & Mitra, N. J. (2012). *Guided exploration of physically valid shapes for furniture design*. ACM Trans. Graph., 31(4), 86-1.
- Ventura, J., & Shvo, G. (2016). *Breaking the language of design: semioclastics in the world of industrial design*. International Journal of Design Creativity and Innovation, 4(3-4), 222-233.