

Study of The Malangan Batik through Motifs Composition with Shape Grammar Technique and Color Composition Selection (Case Study: *The Druju Batik*)

Titi Ayu Pawestri

Interior Design Lab. Of Graphic Design,
Vocational Programme
University of Brawijaya
Malang, Indonesia titipawestri@ub.ac.id

Debri Haryndia Putri

Interior Design Lab. Of Graphic Design,
Vocational Programme
University of Brawijaya
Malang, Indonesia debriputri@ub.ac.id

Abstract The Malangan Batik is a batik art with unique motif of Malang. There are some central of batik producer in Malang, one of them is The Druju Batik. This batik was produced since 1996 in The Druju Village, Sumbermanjing Wetan District, Malang Regency. The Druju motif inspired by natural environment around The Druju Village which surrounded with limestone mountains, and some earth resources while for the selection of color, this batik is dominated by black color for backgrounds with white color on its motif. As a work of art, the design of motifs and color selection of The Druju Batik can be developed by development of alternative motif design that more variative that can increase selling value. The modern motif become alternative motif design except the konvensional motif. The shape grammar technique is a method of analyzing forms to obtain basic formulations that can be developed as a "form grammar". The basic formula of the composition will be the base for developing visual alternative of The Druju Batik experimentally with the help of CAD (computer aided design) based on software. The results showed that the re-composition of motifs using shape grammar technique can produce various designs of The Druju Batik motifs that keeps its original alignment without having to repeat the same old form.

Keywords: *The Druju Batik, Shape Grammar, Composition*

INTRODUCTION

The wealth potential of archipelago ornaments is very diverse, the wealth is found in various product objects, in weaving, embroidery, woven, carving, architectural works, and so on. The word ornament comes from Latin, *ornare* which means decorate. The ornamental shapes that become ornaments are the main function is to beautify items or items that are decorated. While the motif is the main element of an ornament. Through motifs, themes or basic ideas, an ornament can be recognized as the embodiment of a motif generally constituting a composition of forms in nature or as a visible representation of nature. There are also those which are merely imaginary results, because they are imaginative, even because they cannot be recognized again, the compositions of a motif are then called abstract forms. The types of Nusantara ornaments based on ornamental motifs can be grouped into geometric motifs, human motifs, animal motifs, plant motifs, natural objects, technological objects and calligraphy. Batik is one of the embodiments of archipelago ornaments that are well known by the people of Indonesia and internationally. Indonesian Batik was officially recognized by UNESCO on October 2, 2009 by being included in the Representative List as a Human Heritage Culture (Representative List of the Intangible Cultural Heritage of Humanity) in the 4th Session of the Intergovernmental Committee (Fourth Session of the Intergovernmental Committee) on the Intangible Cultural Heritage in Abu Dhabi. According to Hanggopuro [4] in the *Batik* book as *Clothing Order and Guide* wrote that, the previous writers used the term batik which was actually not written with the word "Batik" but it should be "Bathik". This refers to the Java letter "tha" instead of "ta". Based on these etymologies, identical batik is actually associated with a technique (process) from the depiction of motifs to

pelorodan. One of the characteristics of batik is the way of depicting motifs on cloth, namely through the process of deepening with a wax liquid through a tool called canting or stamp. At present, Batik is one of the drivers of Indonesia's Creative Economy. Every region in Indonesia, especially Java, has its own batik cloth motif which displays the identity and distinctiveness of the area. Like other regions in Indonesia, Malang also has a distinctive batik motif. Malangan Batik is a designation for batik artwork with typical Malang motifs. One of the well-known Batik

Malangan centres was established in 1996, located in Druju Village, Sumbermanjing Wetan District, and Malang Regency. Batik Druju comes with natural motifs inspired by the natural environment around Druju Village which is a limestone mountain that grows a lot of ferns. Besides that, Sumbermanjing Wetan is also known for its earth produce in the form of coffee and cloves [7]. The potential of marine wealth along with its beaches is also not too far away, some of the southern beaches are famous for their beauty. So that this natural situation will influence the selection of the colors of Batik Druju, which is dominated by a solid black colour with a white colour on the motif. In the research that has been carried out on coastal batik producing areas, namely Pekalongan batik, formulates that product innovation and Coastal Batik motifs are developing in line with the growth of the national economy. Like the batik-producing regions that are inspired by nature, this can trigger the creativity of Druju batik craftsmen to always make innovations and alternative motives to increase sales. Currently Batik Druju is widely marketed in certain circles at the top social level. With more variants, of course customers will have many choices of motifs that are rarely found or have never even existed. So this attraction will be the first step in getting more and wider consumers than before. One

technique that can be used to modify motifs is shape grammar method using CAD (computer aided design) based software. Shape grammar method is a formulation method that is formulated digitally with the help of computer software so that the resulting motif can appear more precise and different. [2]. Shape grammar method has often been used in traditional ornamental variety studies in other countries one example is Malaysia where the researchers used this method to develop Malaysian weaving motifs. Because of this basis, the researchers hope that the use of technological advances through this method can help the creation of the Batik Druju Malang motif which has more motif composition.

PROBLEM STATEMENT

Sentra Batik Druju requires innovation in the development of its motifs, and the shape grammar method using CAD (computer aided design) -based software is expected to be an effective and efficient solution in the development of a more varied pattern of batik Druju motifs to increase sales levels. From this basis, the formulation of the problem raised in this study is "How to develop innovative patterns of Batik Malangan motifs by using shape grammar method and color composition?"

METHODOLOGY

The research method used in this study is qualitative descriptive through an experimental approach. Descriptive qualitative method was used to process the initial data until the researchers found several samples of domination motifs on the basic form of Batik Druju, then after that the researchers used the shape grammar method experimentally to find several alternative motifs of Batik Malangan. Shape grammar method is a formulation method that is formulated digitally with the help of computer software so that the resulting motif can appear more precise and different [2]. Shape grammar method can be used to produce original new motif based on the shape and composition of the existing motif. The following are some of the shape grammar methods that can be applied in composing a motif:

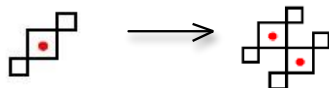


Figure. 1. repetition techniques [2]

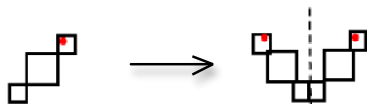


Figure. 2. vertical reflection technique [2]

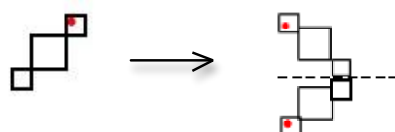


Figure. 3. horizontal reflection technique [2]

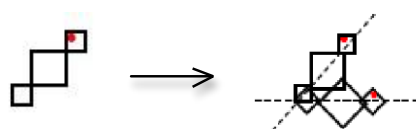


Figure. 4. rotation technique with certain angles [2]

DISCUSSION AND ANALYSIS OF RESULT

A. Description of Existing Batik Motif

In the creation of batik motifs, a designer uses design elements including points, lines, fields and colour composition selection based on design principles to achieve a visual aesthetic. So that the design work can be enjoyed and appreciated by others. A batik motif designer observes the elements around him to be used as inspiration for the design of the motif that will be created. Like the Druju batik which takes the natural richness of coffee, which is coffee and fern plants that grow in the natural village of Druju, Sumbermanjing Wetan, Malang. Sumawe Coffee motif is the name of the production motif of Andis Batik, which has acquired Intellectual Property Rights (IPR). This motif has a unique shape by processing the shape of the coffee fruit that has not broken into a dominant element and combined with fern leaves as its accent.

The point element is used to fill in some formations in the sumawe coffee motif. The line element is used as a major component in making fern motifs and some other variations. While the field element as the dominant element is used in making coffee motifs that are spread evenly. In the selection of colours, this motif uses solid black as the background colour. The colour of the coffee fruit uses a dark purple colour which is graded in white to align the dark colours of the background. As an accentuation colour, a fern motif is formed using green as the opposite colour from purple. In principle, the design of the Sumawe Coffee motif has a dynamic and asymmetrical concept. The principle is to form a whole which is shown in the coffee fruit that is evenly distributed.

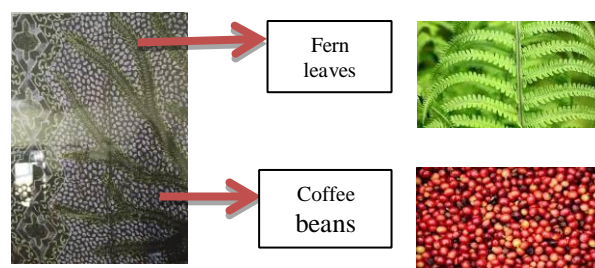


Figure. 5. "kopi sumawe" motif

B. Alternative Experiment of Existing Batik Motifs 1) Shape Grammar Method

In the shape grammar method, the design principles used are unity, repetition and balance. Existing motives are treated as components to be tested in the making of new motives by being rotated and accurately mirrored using Autocad software. When experimenting with shape grammar method, the existing motifs will be extracted in several parts to make it easier to process reflection, rotation and repetition. This master motif will be used as a module in the recomposition process. The trial process using the shape grammar method, the existing motif from the form of Sumawe Coffee experienced some changes in its composition without changing the original form from the existing.

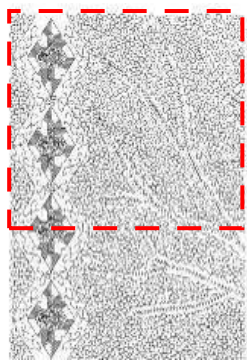
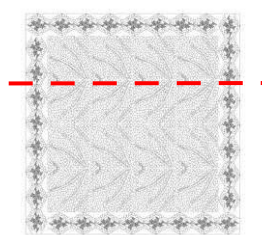


Figure 6. tracing and cropping of “kopi sumawe” motif

a) In the horizontal reflection test, the composition of the motif has a rhythmic principle. The master motif is reflected by a horizontal line as a whole. Furthermore, there is a direct and parallel loop with a certain distance up and down. So that a new motif will be formed from the meeting of some fern elements that blend together at the top and bottom to create a rhythmic shape.



Reflection line

Figure 7. horizontal reflection

b) When testing the vertical reflection, the composition of the motif has the principle of balance. The master motif is mirrored by a vertical line as a whole. Furthermore, there is a direct and parallel loop with a certain distance to the side. Fern elements will meet in a line of vertical reflection so as to form a new symmetrical motif.

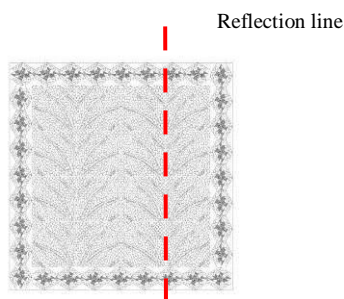
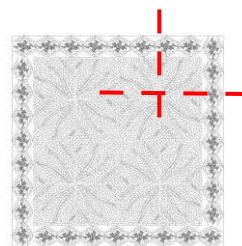


Figure 8. vertical reflection

c) In the rotary reflection test, the composition of the motive has the principle of balance. What happens is that the master motif is rotated with a 90° angle repeatedly on all sides, so that there are four repetitions of the motif with a rotating configuration. Then it is repeated in the same direction and parallel to a certain distance to the side, top and bottom. Fern elements will be a new motive rotating at one point of intersection of the nodes.



Swivel line 90°

Figure 9. direction of 90° rotation

d) When testing the reflection of a mixture of vertical and horizontal down one grid/box, the composition of the motive leads to a proportional principle. The method applied is to reflect on the horizontal and vertical lines at one symmetrical intersection point. Then it is repeated sideways down one grid or box with the same distance. So that the formation of fern elements is more dynamic.

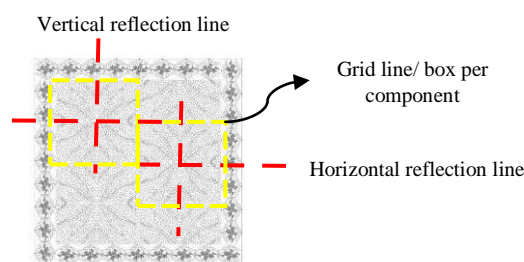


Figure 10. Reflection of a mixture of vertical and horizontal down one grid

e) In the experiment the reflection turns the angle 90° down one grid, the composition that occurs is to use the principle of rhythmic proportions. The method applied is by the result of the reflection turning the angle 90° , reflected sideways down one grid or box. Fern elements form dynamic wave patterns.

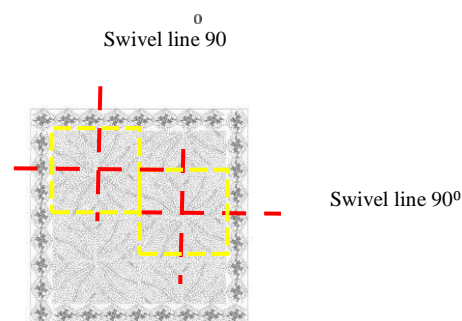


Figure 11. reflection turns the angle 90° down one grid

2) Selection of colour composition

The color composition for the Kopi Sumawe batik which has been recomposed into a new motif is formed following the colour composition of the previous motif which is using a solid black colour for the background, a purplish white coffee motif and a green fern motif.

The existing color composition remains highlighted so that the characteristics of Druju batik are still original and

strengthened. Black and white monochrome colour scheme with green and yellow green accentuation makes this batik motif seem more modern and elegant.



Figure 12. composition of color

C. Alternative Experiments in Developing Existing Batik Motives 1) Shape grammar method

Shape grammar method can also provide several new motive alternatives from the results of the development of the existing Sumawe Coffee motif. With the addition of several natural elements that have not yet entered the Druju batik motifs, the clove plant, which is also the largest commodity in Sumbermanjing Wetan, produced a new motif design, namely clove coffee.

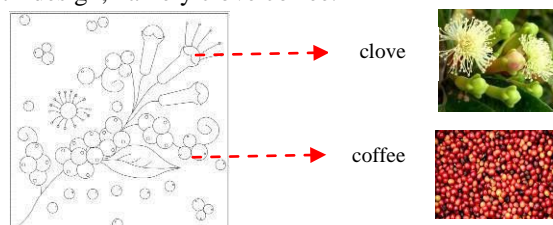


Figure 13. clove coffee motif

a) In the horizontal reflection test, the composition of the motive has the principle of balance. The master motif is reflected by a horizontal line as a whole. Furthermore, there is a direct and parallel loop with a certain distance up and down.

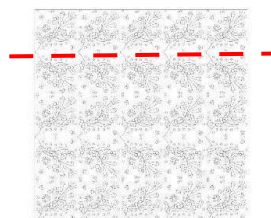


Figure 14. horizontal reflection

b) In the vertical reflection test, the composition of the motif has a rhythmic principle. The master motif is mirrored by a vertical line as a whole. Furthermore, there is a direct and parallel loop with a certain distance to the side.

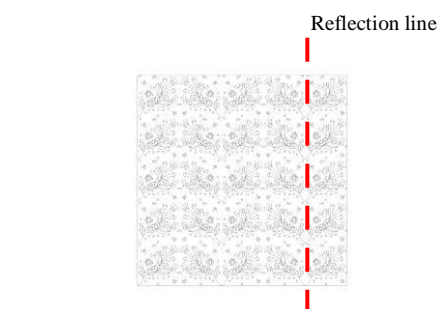


Figure 15. vertical reflection

c) In the pilot reflection test, the composition of the motive has the principle of balance. What happens is that the master motif is rotated with a 90° angle repeatedly on all sides, so that there are four repetitions of the motif with a rotating configuration. Then it is reflected in the same direction, parallel and repeated with a certain distance to the side, top and bottom.

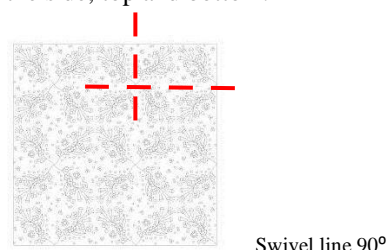


Figure 16. direction of 90° rotation

d) In the trial of the reflection of a mixture of vertical and horizontal down one grid, the composition of the motive leads to the principle of balance. The method applied is to reflect on the horizontal and vertical lines at one symmetrical intersection point. Then it is repeated sideways down one grid or box with a certain distance.

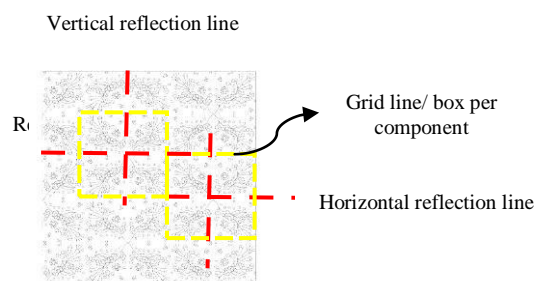


Figure 17. reflection of a mixture of vertical and horizontal down one grid

e) In the trial of reflection, turn the angle 90° down one box, the composition that occurs is to use the principle of proportion that is more dynamic. The method applied is by the result of the reflection turning the angle 90°, reflected sideways down one grid or box.

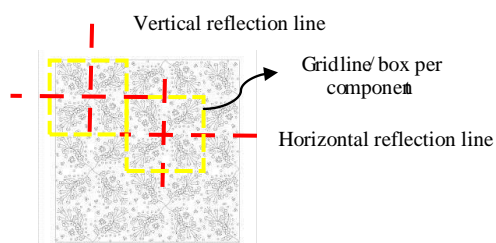


Figure. 18. reflection turns the angle 90° down one grid

2) Selection of color composition

In color selection, the experiments carried out are composed of solid black and white (as the typical colour of Druju batik) with the accent colours. As in the picture of the horizontal reflection motif using a black background with a white motif colour. As a result, using the red colour of some coffee.

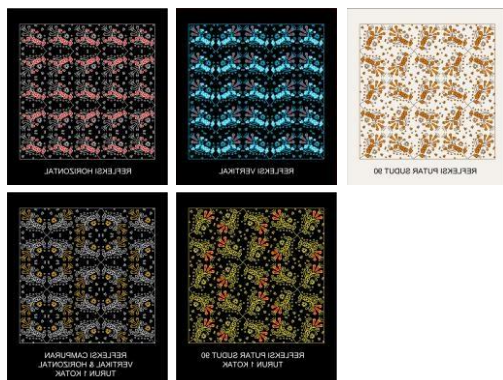


Fig. 19. color composition

CONCLUSION

This research offers a more efficient method of creating new batik motif patterns as the development of existing motifs. Digitization techniques on the shape grammar method will make it easier for batik producers in the process of large-scale batik production using stamp equipment. Because Autocad software is able to provide output plotting that can be printed on a scale at any size.

The existing master motif becomes a modular form which is then recomposed with the shape grammar method. Shape grammar method can also display visual aesthetics by still holding the design principle in each recomposition process. The selection of the typical colour composition of druju batik, namely black and white on the Sumawe Coffee motif, will strengthen the Druju batik identity that has the character as has been known by the wider community. The addition of green as an accentuation will also provide a special attraction for consumers. The development of coffee motif design by adding cloves to the master design can be used as an alternative motive that can promote South Malang agricultural commodities into batik motif designs.

ACKNOWLEDGMENT

This research was supported/partially supported by University of Brawijaya. We thank our colleagues from Andis Batik, Druju Village, Sumbermanjing Wetan, Malang, Indonesia who provided insight and expertise that greatly assisted the research. We are also immensely grateful to our partner in Vocational Programme, University of Brawijaya for their comments on an earlier versions of the manuscript, although any errors are our

own and should not tarnish the reputations of these esteemed professionals.

REFERENCES

- [1] Anas, B, Indonesia Indah "Batik", Jakarta: Yayasan Harapan Kita/BP 3 TMII, 1997.
- [2] Ismail, Nor Fuzaina, Fuziyah Ishak, Jamaliahani Tumin, Nurzayani Yusup dan Eva Elvira Ruwipin, Geometric Shapes Generation in Songket Designs Using Shape Grammar, Kuala Lumpur: Proceedings of the 12th International Conference on Applied Computer and Applied Computational Science (ACACOS'13), 2013, pp.153-157.
- [3] Kuntjoro, Jakti, R.A. Diah Resita I, Ragam Hias Nusantara, vol.1 No.2. Yogyakarta: Humaniora, 2010, pp. 246-252.
- [4] Hanggopuro, Kalinggo, Bathik sebagai Busana Tatanan dan Tuntunan, Jakarta: Yayasan Harapan Kita/BP 3 TMII, 2002.
- [5] Ramli, Mohd Adib and Embi, Mohamed Rashid, The Shape Grammar Of Rudinara Residence, al Alam Bina, Jilid 13: No.4, 2008.
- [6] Stiny, G, and J. Gips, Shape Grammars and the Generative Specification of Painting and Sculpture.In: Information Processing 71, ed. C. V. Freiman, 1972, pp.1460-1465.
- [7] sumbermanjingwetan.malangkab.go.id
- [8] www.batik-tulis.com, diakses tanggal 1 Maret 2018