

# The Implementation of Chiaroscuro Visual Characters Using Woodcut Printmaking Technique on Textile

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**Abstract** One of the characteristics in the 15<sup>th</sup> century Renaissance that there was a dramatic visual expression in the works of art, especially painting. It's usually visualized by the artists at that time with the use of the light-dark principle on the objects presented in the artwork. This light-dark principle is known as chiaroscuro, and in the history of its development this chiaroscuro principle was applied also in printmaking by several artists in Europe. The chiaroscuro character can be built with the composition of color values with different intensities through the process of printing a matrix on the print media. There are two methods that can be used to produce color printmaking work, multi-block and reduction method that have their own advantages and disadvantages in visualizing the chiaroscuro principle. In addition to paper materials, the application of woodcut printmaking is also carried out on textile materials known as block-printing. However, there are not many works on textile materials that use the chiaroscuro principle because in general the coloring character in the visual image or design used tends to be solid color. Based on the explanation, there is an opportunity to apply the visual chiaroscuro character to the textile materials by using woodcut printmaking technique. The use of woodcut printmaking technique allows artist to produce a number of different color values by referring to the light layer falling on the object, so that the impression of volume and depth created in the artwork will be more visible. In this study, researcher conducted a literature study and observations to analyze chiaroscuro visual characters which were then tested in the experimental process of creating works to show the potential application of the chiaroscuro character by using woodcut printmaking on textile materials. The results of this study produce data on the analysis of technical aspects and visual characteristics of chiaroscuro by using woodcut printmaking technique on textiles. It can be used as material for the development of art making and learning process to be conveyed to the artists, textile designers and academic community.

**Keywords** chiaroscuro, visual character, color value, woodcut printmaking, textile

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## 1. Introduction

One of the characteristics in the 15<sup>th</sup> century Renaissance that there was a dramatic visual expression in the works of art, especially painting. Some Old Master artists such as Caravaggio, Leonardo da Vinci, and Rembrandt van Rijn applied this chiaroscuro principle to most of his paintings. In addition, Caravaggio applied this lighting principle to printmaking. The development of chiaroscuro printmaking was quite significant at the beginning of the 16<sup>th</sup> century in Germany and Italy especially in relief print woodcut and engraving on wood materials [1].

Lucas Cranach and Hans Burgkmair began their development in Germany through a chiaroscuro woodcut work titled '*St. George and the Dragon*'. Even though they have the same title and main object, the visuals of the two works tend to be different because the material, especially technical of the two artists has their own particular characteristics. In Italy the chiaroscuro woodcut printmaking was popularized by Ugo da Carpi through a work titled '*St. Jerome*' in 1516. Visually, the principle of chiaroscuro lighting in the works of Ugo da Carpi is more clearly visible than Cranach and

Burgkmair works. The use of color values is one of the factors that stands out in addition to the image gestures of the work objects which are more dynamic than the works of the two German artists [2].

Color has a value which is the level or brightness of a color [3]. This value will distinguish the quality of the brightness of a color, so it is obtained for example maroon which is darker and vermilion which is brighter than pure red. The color value indicates the amount of light intensity that affects a color. This has become one of the guidelines of the Renaissance artists who made many works with chiaroscuro principles. Chiaroscuro strongly considers light-dark to give the impression of the volume and depth of an object in a work, so that in other words artists need to have sensitivity to the color values contained in the object to be visualized in the work he made. Color values has become one of the visual elements that was quite important for the works in the Renaissance, because the light-dark composition strengthened the dramatic impression that became the visual intentions of artists as well as the exploration of human figure gestures which were the object of the artwork in that era.

In addition to paper materials, the application of woodcut printmaking is also carried out on textile materials known

as block-printing. However, there are not many works on textile materials that use the chiaroscuro principle because in general the coloring character in the visual image or design used tends to be solid color. Based on the explanation, there is an opportunity to apply the visual chiaroscuro character to the textile materials by using woodcut printmaking technique. The purpose of this study is to obtain data on the analysis of visual characteristics and technical aspects of chiaroscuro implementation by using woodcut printmaking technique on textiles. Furthermore, hopefully it can be used as material for the development of art making and learning process to be conveyed to the artists, textile designers and academic community.

## 2. Literature Review

### 2.1. Chiaroscuro Woodcut Printmaking

Chiaroscuro comes from the Italian *chiaro* (light) and *oscuro* (dark), it can also be interpreted to be a very strong contrast between light and shadow in a work of art. Chiaroscuro considers the falling of light on the object of work which gives a very clear tridimensional impression due to the application of highlights and shades. In addition to being applied to works of painting, during the 16<sup>th</sup> century Renaissance, the principle of lighting was also widely applied to printmaking by artists at that time.



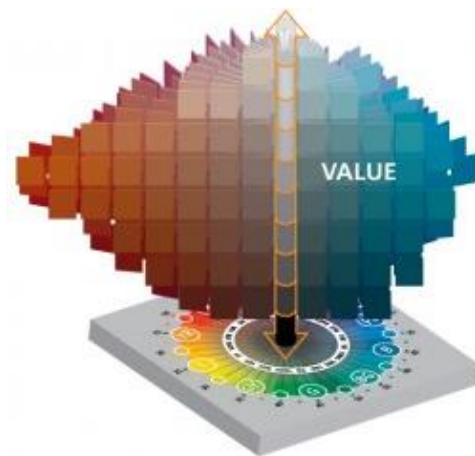
**Figure 1.** 'St. George and the Dragon' chiaroscuro woodcut printmaking by Hans Burgkmair in 1508 [1]

Chiaroscuro woodcut is a color woodcut in which gradations of tone are used to suggest volume and depth. It is produced by printing two or more woodblocks on top of each other [1]. In general, looking from its history up to now widely used, the process of making chiaroscuro woodcut printmaking is made with a multi-block method which artists use two or more woodblocks as matrix to produce different levels of color in the work. Giorgio Vasari, is an artist who is also the first Italian art historian to de-

scribe this multi-block method in detail [1]. In its technical discussion, Vasari recommends that the first woodblock made as a matrix are the 'line blocks' first, then the prints of the 'line blocks' are placed on the second woodblock to reproduce the lines in order to help produce a 'tone block'. Vasari continued, white paint can be used on the second woodblock bar to mark areas of highlight. This area is then gouged and will remain white after printing. These steps can be used to produce the next 'tone blocks'. In the printing process the planks are printed in reverse order with the cutting process. The brightest color matrix, which is the board has been cut to produce the highlights are printed first, then the matrix that produces the darker color, and finally the 'line block' which produces the outline of the resulting image. Each matrix must be printed in aligned position to avoid the final blurred image or distortion.

### 2.2. Color Value

Albert Munsell defines color dimensions are composed of a mixture of black and white as the axis, the color circle around the shaft, and the color scale moves towards the shaft [3]. Albert Munsell in 1912 invented a systematic color organizing system through his terminology, which was later called the Munsell System. The Munsell system can provide guidance for color quality scales with intervals for complete schematic design purposes.



**Figure 2.** Munsell system color values diagram [4]

The color value is the second dimension of the three dimensions of color Munsell System, where the first dimension is color name and the third dimension is color intensity. Color value is the brightness degree or sequence of a color where the value will distinguish, for example red, with maroon which is darker red or scarlet which is brighter red. Theoretically, the color level diagram is divided into nine levels, with darkest black at the bottom, through a series of gray shades to white that have the brightest colors. White has the highest color value, while black has the lowest color value. In mixing colors if we want to make the colors brighter you can add white, whereas if you want to make the colors darker you can add black, in other words each color can be changed in their value.

Faber Birren produces three color levels that map the color produced based on the relationship of the three main elements that produce color values. These three main notions are pure colors (hue) placed on the left, white on the upper right and black on the lower right.

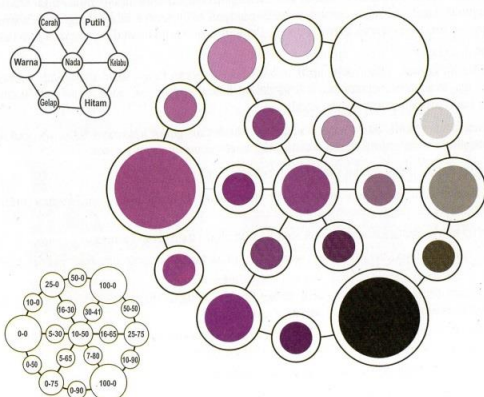


Figure 3. Color value scheme by Faber Birren [3]

Mixing pure colors with white, gray and black will produce three different levels of brightness or color values, namely what is called a row of bright colors or tints, a row of tone colors or tones, and a row of dark colors or shades.

### 2.3. Textile

Textile is any filament, yarn or fiber that can be made into fabric or cloth and resulting material itself. The textile term is derived from the Latin *textilis* and the French *texere*, meaning 'to weave', and it originally referred only to woven fabrics. It has come to include fabrics produced by other methods. Thus threads, cords, ropes, braids, lace, embroidery, nets, and fabrics made by weaving, knitting, bonding, felting, or tufting are textile [5].

Fabric is made from yarn, and yarn is made from fibres. These fibres can be either natural or man-made. Natural fibres include animal fibres (e.g. wool and silk), vegetable fibres (e.g. jute and cotton) and mineral fibres (e.g. asbestos). Man-made fibres are either regenerated or synthetic; viscose rayon, based on regenerated cellulose, is man-made but not synthetic while polyester, polypropylene and nylon are all synthetic fibres [6].

## 3. Methods

The research refers to the qualitative method base on the analysis of the literature review and the results of observations and experiments related. Literature studies were carried out on several sources of book that discuss the object of research which are "*CHIAROSCURO: Renaissance Woodcuts from Collections of Georg Baselitz and The Albertina, Vienna*" to obtain data about visual analysis of chiaroscuro characteristics on printmaking. In addition, the researcher conducted a study from journal "*Penerapan Metode Reduksi pada Penciptaan Karya Seni Grafis Cetak Tinggi Cukil Kayu Chiaroscuro*" to obtain data on the potential use of woodcut printmaking as an aesthetic element in textile

materials. Direct observations were made on several works of art that used woodcut printmaking technique to observe the potential for their application to various textile materials that would be used in the experimentation process. Experiment process carried out using various textile materials such as cotton, linen and rayon. The final result is a visual analysis of the research object based on visual elements in the series of experimentation process that have been made by researcher.

## 4. Results and Discussion

This research consists of several stages to obtain a significant research base and input in order to obtain objective and optimal results. The following is a working scheme of the research

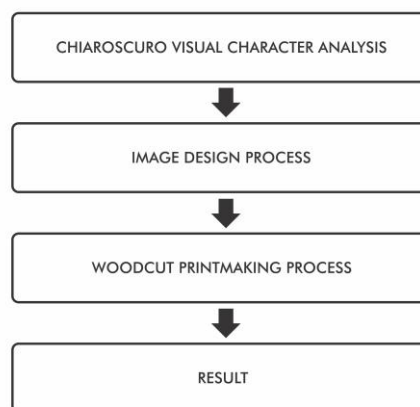


Figure 4. Working scheme of the research

### 4.1. Chiaroscuro Visual Character Analysis

The first stage in this research is to do a visual analysis of chiaroscuro to get a significant character from this lighting principle. The researcher analyzes woodcut printmaking from the Renaissance era as one of the samples taken in this study. The work was titled '*Diogenes*' made by Ugo da Carpi in 1527. The selection of the work was based on a literature study that Ugo da Carpi was one of the significant Italian woodcut printmaking artists of that time.

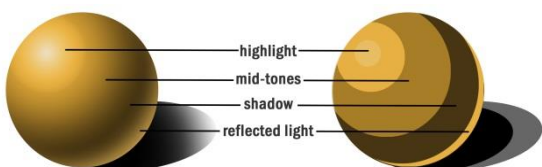


Figure 5. '*Diogenes*' woodcut printmaking by Ugo da Carpi 1527 [1]

Chiaroscuro strongly considers dark-light to give an impression of the volume and depth of an object in the artwork, so that in other words the artists need to have sensitivity to the color values in objects to be visualized in the work they made. The color value is one of the elements that is quite significant for works in the Renaissance period, because the dark-light variant is a reinforcement of the dramatic impression that became the visual intention of artists in addition to the gesture exploration of human figures that became the object of the work of that time. The difference in color values are influenced by the amount of light intensity that falls on the surface of the object which becomes the image of the work.

There are at least four sections of color values caused by light falls on the objects. Light with high intensity (highlight) that falls on the object causes this section to be visualized with high value color even tend to be white in the field of work. The second section is mid-tones which is a part where the color that appears on an object has a medium value because the intensity of light falls on this part is not too high or low, in the other words the color that appears in this section is the original color (hue) of the object creation.

The third section is called shadow, where in this section has a lower color value so that the color visualized in the artwork are made darker than the previous two sections. The smaller of light intensity fall into the object, the lower color value, so the visualization of the color will become darker. The fourth section is reflected light, this part is where object get some light exposure comes from the reflection of other objects around [2].



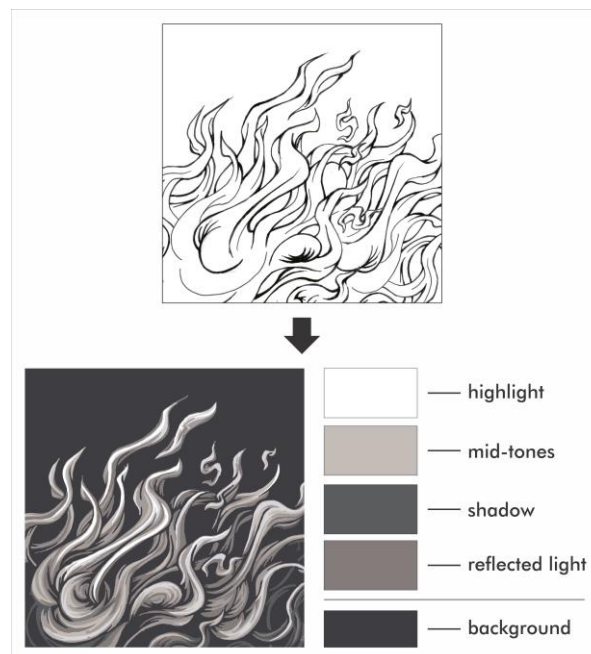
**Figure 6.** Illustration of four sections separation based on the object's color value [2]

The four sections separation of color values became a reference for the distribution of color layers which were printed on the process of making chiaroscuro woodcut print. Referring to the four sections with different color values, the number of printed layers will be four, it means that the artist need four times printing gradually the matrix from four different wood block if used multi-block method or only one wood block if used reduction method.

#### 4.2. Image Design Process

The image design process considers the characteristics of the chiaroscuro principle that has been analyzed previously. One of them is sections separation of color values which became a reference for the distribution of color layers will be printed on the process of making chiaroscuro woodcut print. But before entering the cut and print process, it's necessary to create an image that can strengthen the presence of these characteristics.

Researcher took the image of fire which became a fixed variable in this experiment. The image of fire is chosen by considering visually the flame has quite a different color value that can be seen clearly, from the lowest shade to the highest highlight. So that visibility becomes a reference in the process of coloring and making matrix at a later stage. Start from making an outline of the fire object, researcher continues at the coloring. The sketch coloring process refers to the partition of fields based on the level of color values.



**Figure 7.** Image design coloring process refer to four sections separation color values

#### 4.3. Woodcut Printmaking Process

Woodcut or xylography is relief print on the art of printmaking, where the images are produced by print process results of left over wood block after the process of cutting. In the history of its development, woodcut printmaking work which use chiaroscuro principle were made using a multi-block method. Multi-block are related to the number of wooden blocks used to make the work which are more than one block. One other method studied in this research is the reduction method who needed to make the process more effective and efficient in terms of the use of materials and printing process.

##### 4.3.1. Multi-block method

Multi-block is commonly used method of woodcut printmaking technique where artists use two or more woodblocks as matrix (printing plate) to produce different levels of color in the artwork. There are two terms to name a woodblocks used in the printing process. The first is 'line block', a print matrix that contains the outline of the image. The second term, 'tone block' or 'color block', is a printed matrix containing the color fields of the image. Usually more than one 'tone block' are used to print color fields with different levels.

#### 4.3.2. Reduction method

Reduction is one method of woodcut cut printmaking techniques where artists produce several colors in one printed work using only one matrix (printing plate). It usually starts by cutting the wooden block which is the brightest color when it's printed. Then printing it onto a number of papers as a print edition before the wooden block cleaned from ink and then re-cut for the next printing section above the last color. One of the advantages of this method is that the print results of each color tend to stack more perfect, even with the complexity of different cuts in each layer. It because only one matrix used so that it makes mounting in the printing process easier. On the other hand this reduction method causes the print matrix cannot be reused to print previous colors because the surface of the matrix has been reduced by the cutting process, but this has implications for the value of the exclusivity of printmaking created in a limited way.

In order to gain an understanding and dig deeper into its potential application in textile, researcher conducted an experiment by making a series of chiaroscuro woodcut printmaking using the reduction method. The same sketches from previous experiment will be made into printmaking work using the reduction method. The sketch of the work made was then transferred to the coated wood block by using gasoline liquid as transfer medium.

In the process by using reduction method, the steps of cut and printing are carried out several times using the same wood block to produce colors as it desired. To produce printmaking works that use chiaroscuro lighting method, the process of cutting the matrix are carried out in order to produce colors with varying brightness or values after printing on textile. After cutting process, before entering the printing step, researcher determines the color scheme that will be applied by referring to the color value theory that has been analyzed previously.

## 5. Conclusion

The color value is one of the elements that is quite significant for chiaroscuro printmaking works in the Renaissance period, because the light-dark variant is a reinforcement of the dramatic impression that became the visual intention of artists in addition to the gesture exploration of human figures that became the object of the work of that time.

The difference in color values are influenced by the amount of light intensity that falls on the surface of the object which becomes the image of the work. There are at least four sections of color values caused by light falls on the objects: highlight, mid-tones, shadow, and reflected light. Four sections separation of color values became a reference for the distribution of color layers which were printed on the process of making chiaroscuro woodcut print. Referring to the four sections with different color values, the number of printed layers will be four, it means that the artist need four times printing gradually the matrix from four different woodblock

if used multi-block method or one woodblock if used reduction method. In addition to paper materials, the application of woodcut printmaking is also carried out on textile materials known as block-printing. However, there are not many works on textile materials that use the chiaroscuro principle because in general the coloring character in the visual image or design used tends to be solid color.

After going through the stages of visual analysis of characters and proceeding to the stages of experimentation, it can be concluded that the application of chiaroscuro characters can be done on textile materials. There are two woodcut printmaking methods that can be used to implement it, they are multi-block and reduction methods which both of them have their own peculiarities in technical.

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