



Faculty of Applied & Creative Arts

**COLOR PSYCHOLOGY IN CHARACTER DESIGN:
A CASE STUDY OF THE SECRET OF KELLS**

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Bachelor of Applied Arts with Honours

(Design Technology)

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**Color Psychology in Character Design:
A Case Study of The Secret of Kells**

SU ZHU HUI

A thesis submitted

In fulfillment of the requirements for the degree of Bachelor of Applied Arts with Honours
(Design Technology)

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Abstract

Color plays a very crucial role in our life. It able gives effect on our emotions and moods. The study focuses on identify the relationship between the color and characteristic of the character. All the findings will be applied on the final output, animation. The case study of the research is The Secret of Kells. The researcher will analyze about how the artists use the color to tell the characteristic of the characters in the film. Each color type has its' own meanings. The purpose of the research is to arouse the audience's emotion who watch the animation and at the same time give some cues of the meaning towards the characters' characteristic.

Abstrak

Warna memainkan peranan yang amat penting dalam kehidupan kita. Ia dapat mempengaruhi emosi dan mood kami. Kajian ini akan memberi fokus pada mengenalpasti hubungan antara warna yang digunakan dan ciri-ciri watak. Semua hasil dapatan akan diaplikasikan pada animasi penyelidikan. Kajian penyelidikan ialah filem “The Secret of Kells”. Penyelidik menganalisis tentang cara artis filem tersebut menyampaikan ciri-ciri watak melalui warna yang digunakan. Setiap warna mempunyai maksud yang tersendiri. Tujuan kajian ini adalah untuk membangkitkan emosi penonton animasi. Pada masa yang sama, memberi beberapa isyarat makna warna tersebut terhadap ciri-ciri watak itu.

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Chapter 1:

Background of the Study

1.0 Introduction

Effect of light enable us differentiate one object from another. Light reaches the optical nerve system of our eyes directly and indirectly. This directly and indirectly light is interpreted by our brain as color (Wucius Wong, 1997). Color plays an important role in our life. It able to affect our moods and emotions. According to Ali Talaei et al. (2014), color psychology means study of color as a determinant of human behavior. Color has the power to evoke emotion and stimulate appetite (Samantha Olson, 2014). Whether you notice it or not, many restaurants or famous fast food outlets such as Pizza Hut, KFC, Burger King and McDonald. They used red and yellow color to design their logo and flyers. Why these two colors had been chosen for these brands? This is not an accident. Every color has its own meaning. Red color prompts appetite, hunger and stimulation. It also has ability to attract attention. While yellow color triggers the friendliness and happiness feelings. Combination of these two colors mean fast and speed (Karen Haller, 2011). This is the reason why many restaurants chose these two colors for their logo design.

Psychology of color can be applied on our daily life to evoke someone's emotion and feeling. Of cause also in animation. Frozen, a 3D animation produced by Walt Disney Animation Studios in 2013. Queen Elsa of Arendelle always dress in blue color. Blue color which represent cold had been chosen because it matched to Queen Elsa who has cryokinetic magic. Not only on the dressing. Some of the background design especially when Arendelle turned to snow also used blue color to evoke audience's

feeling and mood. Another 3D animation, Inside Out produced by Pixar Animation Studios in 2015 best presented the relationship between color and emotion. In this animation, there are five personified emotions which are Joy, Sadness, Disgust, Fear and Anger. Yellow color is used to design the Joy because yellow color represent optimism which matched to Joy's personality. Sadness designed in blue as blue color means depress. Same to other three characters, the color used is to match the personalities of the characters in other hand to arouse audience's emotion. Therefore, color also play an important role in produce a good animation.

In this research, the researcher will focus on investigate the color meaning and how color psychology affect people's mood. All the finding and result will be applied on my animation. My final output will be a 2D animation short film. The research on color psychology will help me in choosing a suitable color which match to characters' personality. This is also to raise a correct emotion and mood of the audience.

1.1 Research question

1. What are the relationship between color and character design?
2. How to used color to present the characteristic of characters?

1.2 Problem statement

The research is about color psychology in character design. There are some problem encountered by the researcher when doing this research. This topic seldom discuss or less focus by the previous researcher. Besides that, culture difference also affect the perception towards color. For example, white color has different meaning for Western

and China. For Western, white means angels, brides and wedding while white represent death and mourning for China. In addition, gender difference also will affect the view to the color. , women are more prefer soft color and men prefer bright color. Hence, the difference of gender also affects the perception of color. (Mario De Bortoli, 2001)

1.3 Objectives

1. To identify the relationship between color and character characteristic.
2. To develop the character design based on the color application recommendation by prior researchers.
3. To produce an animation by applied the knowledge of color in the character design.

1.4 Significant of study

This study is important to help researcher apply the knowledge of colors on my animation and other projects in my future. It helps me to understand about the colors. It can also assist me in choosing a suitable color to evoke the exact feeling of audience. This study also crucial to let other artists or researchers apply the knowledge on their projects or studies.

Chapter 2:

Literature Review

2.0 Introduction

In this chapter, the researcher will investigate the meaning of color and the relationship between color and emotion from previous researcher. The purpose of this investigation is to produce an animation which applied the correct color.

2.1 Color and meaning

Every color has its own meaning. From the earlier research on the aim and method of the color image scale by Shigenobu Kobayashi (1981). Every color has three attributes which are warm or cool, soft or hard and clear or grayish in Color Image Scale. These three criteria characterize the colors. From some methods used by researcher, colors and color combinations are semantically examined. In the image scale, colors are organized according to their individual images. Words are used in place to represent the images. According to Image Scale, warm colors give the meaning such as festive, warm, pretty, joyful, active, strong and charming. While cool colors mean mysterious, calm, neat, smart, noble, refined and intellectual. Image Scale also explained the meaning of soft and hard color. Based on the scale, soft colors mean romantic, kind, feminine, tidy, cool, hopeful and innocent. In the other hand, hard colors mean sporty, dark, heavy, stable, authoritative, steady and reliable.

Colors in term of 'warm' and 'cold' only metaphorically. The high frequency energy, short wave of blue-violet end of the spectrum identified as the highest capacity to heat. The low frequency, long wave of red end as the lowest capacity of heat. But, in nowadays, gas companies keep on in showing the warming effect of red-orange flames. Most people think that reds, yellows and oranges as warm color while blues and greens as cool end of spectrum. Answers for color is argued. In 1990, A. Wierzbicka proposed that yellow as warm color because it's related with the sun. Red is thought as 'warm' because it's related with fire. People do not require to think that color of sun as yellow, yet they will think yellow as sunny color. (John Gage, 1999)

2.2 Psychological properties of color

The color psychology can be defined as mental and emotional effects based on the colors that people see. A paper "Relationship between color and emotion: A study of college students" by Dr. Naz Kaya and Dr. Helen H. Epps (2004) was carried on. 98 volunteered college students included 44 male and 54 female at a public institution was called to participant in this research. The mean age for this particular group was 21 years. None of them had defective color vision. From the Munsell Color System, ten chromatic colors which are fully saturated such as red, yellow, green, blue, purple, yellow-red, green-yellow, blue-green, purple-blue and red-purple were chosen. Participants were tested individually in an office space where they were seated at a personal computer. The Munsell Colour System displayed each color sample one at a time on the middle of the screen. Participants were asked, "What emotional response do you associate with this color?", "How does this color make you feel?" and "Why do you feel this way?" And their answers were recorded. The result showed 62.2% of

students expressed positive toward the color, 34.2% were negative and the rest 3.6% had no response. For color red, yellow, blue, green and purple, 80% of participants responded positive while 17.8% responded negative. For those who responded positively towards the color, they said the colors made them feel comfort and soothing moods. For achromatic colors which included black and gray, 68.4% responded negative because they felt sadness, anger, fear, depress, death and nightmare. However, white color received positive response because it lets them felt hope, purity, snow, innocence and cotton.

According to the research “The use of appropriate colors in the design of children’s room: A short review” by Maryam Ajilian Abbasi, Ali Talaei, Ardeshir Talaei and Ali Rezaei (2014). The effect of color is amazing on everyone of us. Color can affect human’s mood. When we see reddish glow from fire, it lets us to feel warm, hot and excited. While when we see a deep blue sea, we will feel calm and relax. This is how the color effect our mood. Color not only affect adult, it also affected babies and children. Pastel colors like pale blues and pinks had been chosen as the color for babies’ bedrooms. Some people will think these colors are slightly boring but June McLeod, a color therapist said, the babies are far happier surrounded by these calming soothing paint colors. Red, orange and yellow are review as ‘magnetic colors’, explains June. These colors can give people a strong impact. Besides that, blue, violet and indigo are consider ‘electrical colors’ as they let us feel calm. When green color lies in the middle of the spectrum, it create balance. Using green color within decoration will help to create harmony and balance feeling.

From these results, we can conclude that the relationship between color and mood/emotions existed.

2.3 2-Dimension Animation

Based on Oxford Dictionary, animation have two meanings. First, animation defined as the state of being full of life or vigour, liveliness. Second, animation is the manipulation of electronic images by means of a computer in order to create moving images. Since 1880s, 2D animation existed as a traditional animation method. Animation is a process which one drawing followed by another drawings that slightly different pose for 24 frames per second.

Over 35,000 years ago, human painted animals on the walls of the cave. To show motion, human in that period of time will draw four pairs of legs. In 1600 BC, an Egyptian, Pharaoh Remeses II built a temple to the goddess Isis. This temple had 110 columns. Each of these columns had painted figure of the goddess. All the figures in a progressively changed position. Isis appeared to move when the charioteers and horsemen was riding past. In 1640, “Magic Lantern” was made by Athonasius Kircher. He drew every figure on separate pieces of glass which placed in his apparatus and projected on a wall. When Kircher moved the glass with strings from above, the animation will show.

The Thaumatrope is also an earlier animation method which a cardboard disc had been mounted on the top and held between two pieces of string. Two different things drew on the both sides of the cardboard. One side is a bird while another side is a birdcage. The images merge when the strings are pulled and the disc twirls. The bird seems to be in the birdcage. Phenakistoscope, an animation method that produced by using two disc mounted on the shaft. There are slits around the edge of the front disc while he rear disc has a sequence of drawings. Then, the drawings aligned with the slits.

Therefore, when people look through the openings, he/she will see the illusion of motion as the discs revolved.

In 1867, a toy appeared in the USA. This toy is called Zoetrope or other name is “Wheel of Life”. A sequence of drawings on a long strips of paper were inserted into a cylinder which had the slits in it. When the cylinder spin, the creature appears to move when look through the slits. Next, in 1877, Frenchman Emile Reynaud created the Praxinoscope. By drawing on a 30 foot strip of transparent substance named “Crystaloid”, he was the first person to create a short sequences of dramatic action.

Flipper book was created in 1868. It appeared worldwide and it remained the easiest and most popular device. It is a pad of drawings which bound together like a book along one edge. The illusion of continuous action was created when the drawings flipped. For traditional classical animation, the animators remain flips their drawings by using the same way as flipped book before testing it on video or film camera. The drawings have to place in sequence, with the high number on the top, then flips it from the bottom up. (Richard Williams, 2001)

In 1880s and the early of 1900s, a lot of popular 2D animation produced but they are all in black and white. For instant, Gertie the dinosaur by Winsor McCay. Gertie the dinosaur was the first major triumph in character animation. In 1928, Walt Disney creates Mickey Mouse character in Steamboat Willie. This was the first successful sound animated film and Mickey Mouse is still popular until nowadays. The first colored animation is Flowers and Trees also produced by Walt Disney in 1932. Walt Disney also wins his first Academy Award because of Flowers and Trees. After this film, many colored 2D animations were produced by Disney and also other animation studios (Laura Moreno, 2014).

This show the importance of color in animation. People are more attracted by colored animations. According to Global Animation Industry Report 2016, the rapid advancement of technology has made computer animation available to the masses and the animation industry is the one of the fastest growing industries. The demand for animation or other animated entertainment has developed with the raise in broadcasting hours by satellite TV and cable along with the increasing of popularity of the Internet.

2.4 Character design

To design a character in a film, research must be done at first. Once the research is all done, character and background design can begin. Basically, in an animation studio, everyone will contribute with their ideas in character design. Every animator starts sketching their idea for the character over and over again. To choose the final ones, it goes through a hundreds or a thousands of different design. The character must be appealing to the audience. To accomplish that, there are many different techniques that can be used. Some artists will choose round forms to design the character in order to show warmer and look more childish such as Stitch and Mickey Mouse from Disney. Sometimes, the character that is created is based on the people from real life. When designing a character, the artist also has to consider the country the movie is settled on. Besides that, the artist also has to design the character according to the race of the specific country. Animators will have to create the character's model sheet when the final design is chosen. Different views of the character will be drawn on that character's model sheet. Character's face expressions also will be drawn to let every animator know how they look from every angle. The animator will also create a size comparison sheet to show the height and size difference between all characters in the specific film (Laura Moreno,

2014).

According to David Colman, a character designer, a character should not only focus on what the character is but also focus on the actual design of the subject. For example, It is vital to combine the narrative and the physical traits to show the audience who the character is. In all elements of art, visual stereotypes existed. Many people shared a similar visual vocabulary when it comes to ideas and references such as red means blood, green means nature, sky is blue and so on. Sometimes, it can be very useful for a designer to rely on these kind of concept that already existing when designing a new thing. However, as long as the idea is properly established for the audience, it is possible to give any visual cue and meaning (Bruce Block, 2008).

Character design is a crucial component in an animation. Character is driving the story and breaths life in a film. The design of characters typically will start during pre-production stage of the development of the film. A character should design with humanity. It's is important to focus on their humanity to create a connection of the audience to the character. A character designer normally does hundreds or thousands of sketches before they satisfied with their design. To create the look, feel and personality of the character, this design process always take much time. Colors able in helping communicate a character's personality. Dark color such as purple, black and grey express baddies with malevolent intentions while light color such as blue, pink and white depict innocence, purity and good. Besides that, characters that aimed at young children will typically designed in bright colors (John Lasseter, 2017).

2.4.1 Color used on character design

The way to create a firm identity character design is to focus on the key graphic or color

element (Francis Tsai, 2007). Color is important for create a memorable character. Sadamoto Yoshiyuki is a Japanese character designer. He has a recognizable style of character design. In an interview with Sadamoto Yoshiyuki in 1999, he said, “ A simple recognizable silhouette is also important, but I created the characters so that their personalities could be understood at a glance. For instant, even color and length of hair also portray personality.” (Thomas Lamarre, 2009). Color can used to tell the character’s personality in the film.

The visual design of the character can be separated into two which is clothes worn and physiological form. Color of clothing that worn by the character will help in telling the personality and characteristic of the character (Toby Gard Gamasutra, 2000). However, the personality of the character can be changed along the movie. For example, Stitch, the main protagonist in Lilo & Stitch in 2002. In the beginning of the movie, Stitch shows his evil side and the main color of him also a fierce red. After that, Stitch shows his kindness and the main color used is more calm blue (Hanna Ekström, 2013).

According to Toby Gard Gamasutra, besides clothes worn, physiological form is another aspect of visual design. Physiological form can be a difference between one character and another in weight, skin tone, build, hair and size. A character must be admirable and likeable, this is a fundamental rule to let people respond positively to the character. The costume of the character should be simple and consistent. This is a good way to help the audience more easy to remember the character. A lot of detail and overuse of color will make the audience confused. Therefore, color scheme that used on the character should keep bold and within a limited palette.