RESEARCH ARTICLE

Evaluation of Carmen Herrera's Works In Terms Of Their Contribution to the Use of Color in Graphic Design

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ARTICLE INFO	ABSTRACT
    	Carmen Herrera's works mainly include color pairings. The color combinations he made with the collage technique have made very important contributions, especially in terms of providing the designer with experiences in the use of color in graphic design studies. After the 1980s, with the widespread adoption of the desktop publishing system, there has been a great development in graphic design studies. The most important dimension of this development is color design studies. Visual perception and aesthetic problems have also started to emerge along with the use of rich colors in many different types of design studies, from banner design to packaging design. In search of solutions to these problems, the works put forward by artists who have worked on the subject of color, such as Carmen Herrera, have served as a source of information about making the right choices and continue to do so.

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INTRODUCTION

Color is an auxiliary tool that reveals the essential qualities of the work of art, not only as a work of art and a part of it. Color has a certain existence (Benjamin, 2010, p. 379; Jam et al., 2014). The characteristic structures of colors, both physically and psychologically, have been used as the basic element supporting depiction in the art of painting. The physical and psychological effects of color are also taken into consideration in graphic design works. The main difference of graphic design works from painting is that they are prepared with commercial concerns. A graphic work must be able to attract the attention of the audience and take place in their subconscious. It creates a different visual perception structure with both the interactions of colors with each other and the effects that arise according to the forms they take place in.

Carmen Herrera has created different color compositions in her paintings, mostly by coloring various geometric forms. In addition to her distinctive painting style, she has unwittingly made important contributions to the graphic design infrastructure. It is an important historical coincidence

that her artistic life, which started after the 1940s, coincided with the development period of graphic design.

Cramen Herrera has used the tonal differences that separate the colors from each other and the power struggle between the geometric forms of colors very well. He placed end-to-end colorist geometric forms on the canvas in a mathematical sequence. Benefiting from the harmonic effects of geometric form and color, the artist fused science with art and made references to Itten and Goethe.

Image 1. Carmen Herrera

Accessed: 12.03.2022 https://www.elcorreo.com/culturas/muere-carmen-herrera-20220216221227-nt.html

Graphic Design

Since the main function of graphic design work is to provide visual perception interaction, the correct use of color in the design increases the perception, and vice versa, the use of wrong color in a successful design can greatly weaken the visual perception. A successful visual effect can be created with the correct use of colors that we can never think of bringing side by side. It is necessary to structure unity, interest and balance very well in the colors used. Color is the most important visual language element of graphic design. Although it differs from culture to culture, colors are an important visual semiotic symbol in the expression of emotions and thoughts. In graphic design, it is necessary to properly understand how color forms, color intensities, juxtapositions and tonality affect the design structure and our perception of color. In color preferences and usage, it is necessary to master the balance of power between colors according to the subject and content of the design. Except for innovative graphic designers with good knowledge and experience, the majority prefers to repeat the existing examples by avoiding different and new applications. Especially in terms of color, societies. it is very difficult to change the patterns formed with the influence of the cultural.background of the main element of graphic design works that differ from painting works should be simplicity that will accelerate perception. Structurally, Within the framework of this understanding, the design and color preference of the graphical form should be simple, but in terms of visual perception, it should have a weight that can be noticed among a wide variety.

Image 2. Example of color application in graphic design

Accessed: 12.03.2022 https://www.awwwards.com/UPQODE/

Color Design

Color design is a discipline that studies how to use colors in a visual environment. It is used in many fields such as graphic design, web design, interior design, fashion design and product design. The correct use of colors helps to create balance, harmony, hierarchy and emphasis in a visual composition. It can also be used to evoke emotions, convey messages and define brands. We are surrounded by colors in every aspect of our lives. Everything around you that you look at more closely can surprise you with an array of colors and hues. People may not pay attention to the color structure around them, but colors have a significant influence on perception and preference. The success of the product largely depends on the colors chosen for the design. Correctly chosen colors have an effect that compels users to take action. Data provided by Colorcom reveals that it takes only 90 seconds for people to subconsciously make a judgment about a product, and 62% to 90% of this evaluation is based on color alone (https://blog.tubikstudio.com/color-in-design-influence- on-users-actions/).

The scope of the color is evaluated together with its psychological effect as well as its harmony with the physical structure of the element in which it takes place. The color harmony of a car, a seat or a bag is evaluated according to whether it meets expectations both physically and psychologically (Kodrat et al., 2024).

Image 3. Color wheel

Access: 06.03.2022 https://tr.vectorhq.com/vector/color-wheel-12x7-100460

Color design is based on color theory. Color theory is a discipline that studies how colors interact with each other and how they are perceived. The color wheel is a basic tool used to show the

relationships of colors. In the color wheel, colors close to each other are called harmonious colors, while colors opposite to each other are called contrasting colors. In order to understand color information correctly in the field of design and art, it is important to know what the color wheel tells us and to make the correct analysis of the color positioning on the color wheel. The Color Wheel shows us many data about color information (Image 2). The color information details that we can see on the Color Wheel are as follows. Primary colors are red, blue and yellow. Intermediate colors are colors that are a mixture of primary colors (Uludağ Eraslan, 2020, p. 72).

Comparison of Carmen Herrera Works with Graphic Design Works in terms of Color Usage Principles and Techniques

Color texture is the surface appearance of a color. Color texture can be used to create an interesting and dynamic look in a design. Color texture can be achieved by using materials with different textures or by applying colors with different techniques. Color applications; It refers to technical and aesthetic decisions and activities of more or less importance related to color in all areas of life, starting from personal to corporate and social structure. Although color preferences are instantaneous decisions, they express the past accumulation of societies for thousands of years, today's social trends and finally personal perception.

Color preferences; science, culture, art, communication, industrial, etc. It refers to the theories of using colors and tones in the most effective way in studies. The aim of color preferences is to obtain a harmonious color combination that will provide the desired thought, message and aesthetics in the most effective way. In order to achieve an effective result in color preferences, it is necessary to take into account the form in which the colors are located and the harmony of this form with the ground as well as their relationship with each other.

Making successful color combinations starts with understanding how we see colors and how they relate to each other. In order to see color relationships, it is necessary to understand the color wheel very well. The placement of colors around the wheel is not random. They are arranged in spectral order (like a rainbow), twisted into a complete circle. The placement of each color on the wheel can help you identify harmonious color combinations.

There are three basic concepts that make up color preferences.

1. Color Harmony

2. Color - Form Harmony

3. Shape - Ground Color Harmony

1.Color Harmony

The unity and balance created by colors that come side by side is called color harmony. Color harmony is a very important concept in visual arts. The harmonious use of colors evokes a pleasant feeling in the viewer and gives balance, unity and integrity to the composition. Different types of color harmony can be used to create different emotions and effects. When choosing color harmony, it is important to consider factors such as the purpose of the design, the target audience and personal taste. There are a wide variety of color harmony methods. Color harmonies are defined according to the position of colors in the color wheel, their quality and amount of use. These are respectively; close-far colors harmony, contrasting colors harmony, warm- cold colors harmony, color dominance and harmony, one color, two colors and multi-color harmony (Özdemir Canbolat, 2017, p. 287).

The most important color harmonies are the following;

Monochrome Harmony: Harmony made from light and dark tones of a single color. Single color harmony is a powerful tool in visual arts. With its simplicity and elegance, it can affect the viewer by evoking a sense of calmness, depth and balance. It is possible to create a wide range of emotions and

effects by using single color harmony with different tones, shades, textures, patterns and lighting techniques.
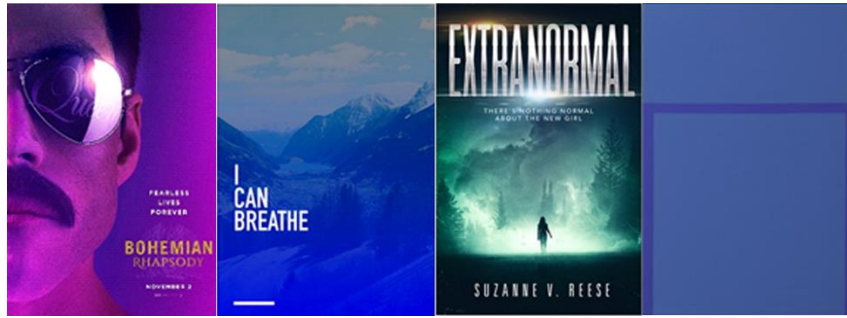

Image 4. Single color harmony graphic design work examples and Carmen Herrera work

Accessed: 20.03.2022 https://www.washingtonpost.com/graphics/2019/entertainment/oscar-nominees-movie-poster-design/

Accessed: 20.03.2022   https://www.ircwebservices.com/10-tips-for-perfect-poster-design/

Accessed: 20.03.2022 https://99designs.com/inspiration/book-covers/school

Accessed: 20.03.2022 https://www.frieze.com/article/carmen-herrera

In the images above, Herrera used a single color harmony in a minimalist way. It is observed that colors add depth, dimension and emotional impact to his works. In the works above, Herrera directs the viewer's attention to a specific point and a specific emotion.

Harmony of Close Colors: It is the harmony created by the juxtaposition of colors close to each other in the color wheel and intermediate colors formed by their mixture. These colors are colors that are next to each other in the color wheel and only a few steps away from each other. For example, colors such as red, orange and yellow; blue, blue-green and green; purple, blue-violet and purple-red are considered close colors. When close colors are brought together, a calm, harmonious and balanced look is achieved. Depth and dimension can be added to the design. Herrera often used harmony of close colors in his works.
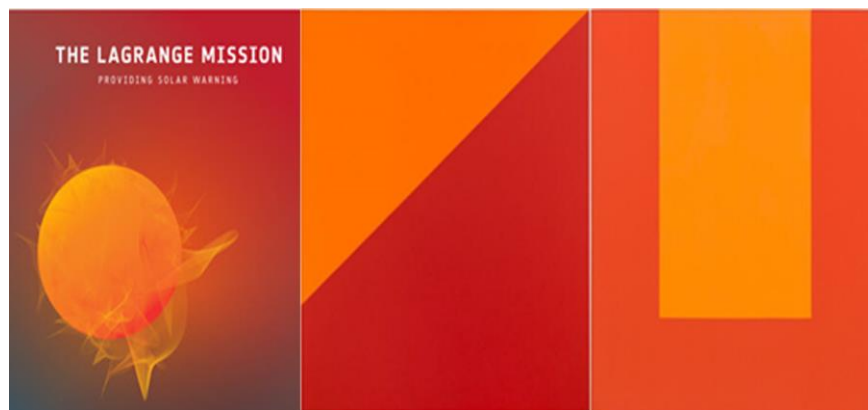

Image 5. Close color harmony graphic design work examples and Carmen Herrera work

Accessed: 23.03.2022   https://www.esa.int/About_Us/ESA_Publications/ESA_Posters

Accessed: 23.03.2022 https://artreview.com/carmen-herrera-whose-geometric-art-won-plaudits-late-in-life-1915-2022/

Herrera's use of close color harmony in the works above has given depth, dimension and balance to his works. By using close colors in different tones, Herrera created the effect of shading and lighting. This has given his works a more sophisticated appearance.

Image 6. Carmen Herrera Far Colors Harmony graphic design work samples

Accessed: 23.03.2022 https://tr.pinterest.com/pin/55872851598733090/

Accessed: 23.03.2022 https://www.posterlounge.com/p/715978.html

Accessed: 23.03.2022 https://www.spainculture.us/city/new-york/carmen-herrera-paintings-on-paper/

Harmony of Distant Colors: Harmonies consisting of distant colors and their mixtures are harmonies made with the three primary colors yellow-red-blue and their mixtures and intermediate colors. The harmony of distant colors played an important role in Carmen Herrera's works. the colors contrast with each other, attracting the viewer's attention and creating a sense of excitement and dynamism in the composition. The colors used give three dimensions to the works and attract the attention of the target audience to the work. In this way, the intended message is conveyed to the target audience. Herrera also uses geometric shapes effectively. **Opposite (Complementary) Color Harmony:** Opposite (complementary) color harmony is the color harmonies provided by red and green, blue and orange, yellow and purple and the intermediate colors formed by their mixture with each other.

Image 7. Contrasting color harmony graphic design work examples and Carmen Herrera work

In the works above,

Accessed: 28.03.2022   https://www.posterazzi.com/the-original-poster-presented-here-is-an-excellent-example-of-mall_ varbll0587390727/

Accessed: 28.03.2022
https://www.facebook.com/zippypixels/photos/a.271816769679855/795670290627831/?type=3

Accessed: 28.03.2022 https://www.galleriesnow.net/shows/carmen-herrera-painting-in-process/

In the works above, the colors create the most contrast with each other and attract the viewer's attention, creating a sense of tension and excitement in the composition.

Warm and Cool Color Harmony: The harmony of warm and cold colors is the combination of colors that are opposite to each other in the color wheel. They are harmonies made with red-orange-

yellow, which are warm colors, and blue-green-purple, which are cold colors, and intermediate colors consisting of mixtures. Warm Colors usually evoke a feeling of energy, enthusiasm and warmth. Cool Colors give a feeling of calmness, peace and coolness. Harmony adds a sense of energy, excitement and dynamism to Herrera's works.

Image 8. Hot-cold color harmony graphic design work examples and Carmen Herrera work

Accessed: 28.03.2022   https://www.wikiart.org/en/carmen-herrera/siete-1949

Accessed: 28.03.2022   https://www.mockupworldhq.com/tag/free-food-packaging-mockup-psd/

Accessed: 28.03.2022 https://www.nytimes.com/2016/09/16/arts/design/a-101-year-old-artist-finally-gets-her-due-at- the-whitney.html

Accessed: 28.03.2022 https://miblart.com/blog/7-book-cover-design-mistakes/

Evaluation:

When Carmen Herrera's works are evaluated from the perspective of graphic design discipline, it is immediately noticeable that the most important experimental aspect is color harmonies and color-shape harmony. In all color harmonies, it is necessary to pay attention to the use of colors in different ratios according to the size of the use of colors according to the optical perception capacities of the colors that make up the harmony. In addition to presenting color harmonies in very clear geometric forms, Herrera has also produced works that provide guidelines on how to use color in what proportion. Although today's advanced digital technologies have facilitated graphic design processes, knowing only the color harmony in color selection is not enough to reach the right results. In addition, determining the surface areas of color spots very precisely according to the visual structure and usage area of the work are important decisions that will ensure the emergence of true color harmony. In his works, Herrera preferred close color and two-color harmonies that do not tire the eye instead of distant color harmonies that would create contrasts.

Carmen Herrera has produced many examples of color harmonies in all kinds of color harmonies in her long artistic life of over 80 years, as well as her long life of 106 years. Her geometric shaped works are like training exercises for the clear perception of color harmonies.

3. Color - Form Harmony

An object is always visually defined by the integrity of color and form. Although form stands out as a more effective means of communication than color, color is considered as an element that complements this form and contains its expressive qualities (Asatekin, 1997) cited in (Duran Sağocak, 2005, p. 79). In today's ruthless competition conditions, especially in emblem, logotype and packaging-label works, there is a struggle to create a very strong visual effect in designs consisting mainly of geometric forms. One leg of the visual effect is to develop a unique form that is easy to perceive and the other leg is to choose the color that will best differentiate this form. Each different form of color creates different semantic structures. Colored forms contain more or less a semantic expression in their background. The form (form) is the harmony with the color it has that adds meaning. The choice of form and color

Visual 9. Carmen Herrera works Color-form harmony graphic design work examples

corresponds to a necessity, a requirement.

Accessed: 31.03.2022   https://news.artnet.com/exhibitions/carmen-herrera-wexner-center-900110

Accessed: 31.03.2022   https://www.phillips.com/detail/CARMEN-HERRERA/NY010716/1

Accessed: 31.03.2022 https://tr.pinterest.com/pin/51439620722464429/

Accessed: 31.03.2022 https://m.blog.naver.com/bbigsso/221263768737?view=img_24

Evaluation:

Starting from corporate identity works, packaging - labels, book, magazine, newspaper designs, etc. graphic design works are a discipline in which geometric forms are used more intensively than artistic painting works. In graphic design, it is necessary to know both the physiology of color and the relationship between color and form very well in choosing the most suitable color for the form developed. Like the perception priorities of colors according to their wavelength frequencies in the spectrum, the form harmony of colors also appears as an optically analytical reality. Herrera predominantly preferred flat geometric forms instead of circular forms. His use of a single color in each geometric form allows us to easily evaluate the formal harmony of colors. It gives us rich ideas about in which form a color creates a more aesthetic perception. Herrera has created rich form-color combinations by freely applying color to geometric forms with an artistic approach without any graphic design concerns. His works inspire graphic design and their actual use in textile, fashion and decoration design can be seen as the most concrete example of this.

3.Figure - Ground Color Harmony

Wherever there is a shape, there is a ground. In other words, the ground is needed for the shape to emerge. The properties of the ground are also effective for the perception of the shape. The shape-ground relationship affects the first look very much (Gezer, 2019, p. 601). According to Gestaltists, the shape-ground relationship is an important process for the act of seeing. The object to be distinguished is called "shape" and its surroundings are called "ground". This distinction may not always be clear. It is not possible to perceive both the ground and the shape at the same time. In order to make this distinction, the brain tries to make use of clues from experiences. All shapes are

based on geometry. There is a large and small variety in shapes. A shape can be formed with only a line, an area or a color (Alpan, 2008, p. 88).
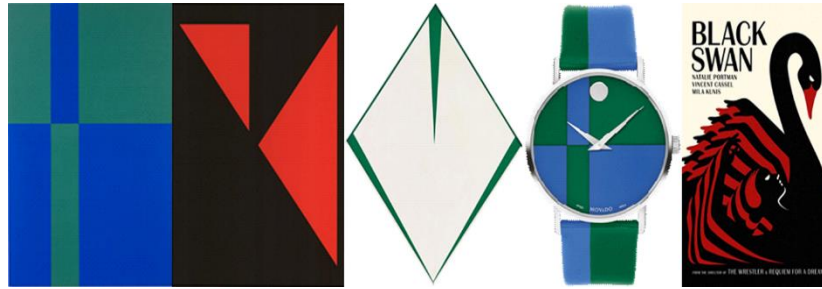

Figure 10. Carmen Herrera Figure-ground color harmony graphic design work examples

Access: 04.04.2022 https://www.nytimes.com/2016/04/17/arts/design/an-artist-at-100-thinking-big-but-starting- small.html

Access: 04.04.2022 https://www.bonhams.com/press_release/31915/

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Access:04.04.2022https://www.movado.com/us/en/shop-watches/carmen-herrera-x-movado-0607582.html Access: 04.04.2022 https://visscom.wordpress.com/2013/04/08/element-of-colour/

A graphic design work cannot be expressed only with design elements (visual, text and geometric forms). Graphic design work is defined together with the platform on which the design elements sit, that is, the ground and the spaces. In a graphic design work, the ground and spaces have great value in terms of visual perception and aesthetics as much as the design elements. So much so that sometimes the floor can have the effectiveness to override the design element. In terms of visual hierarchy, the main instrument used to highlight the effectiveness of the ground or design elements is color. In the shape-ground color selection, it is necessary to know the data up to the lighting conditions under which the graphic design work will be used and for what purpose.

Evaluation

The visual perception of the shape occurs together with the ground on which it is located. The shape cannot be considered independent from the ground. In graphic design, a decoupaged image is in space until it is transferred. Every text and visual is necessarily on a ground. As the ground provides a simple expression of the visual, it can also have features that will contribute to the visual. In graphic design, the background is usually seen as passive. However, the ground can also be transformed into an active structure that will put the visual in the second plan when necessary. In a design, both the ground and the shape cannot be active, so the choice must be made correctly. Although structures that vary in optical illusion studies have been put forward, these do not express the general as an exception.

In Herrera's works, he mainly preferred colors that would bring his forms to the forefront by throwing the ground into the background. Correct color preferences are important for the shape or visual to stand out effectively. The color or colors of the shape, their level of similarity with the colors of the ground and their position in the color circle should be taken into consideration when making a choice. Herrera activated the ground in forms where the shape has a very small surface area in proportion, thus creating a female (negative) visual perception. In some of his works, he has also turned the ground into a shape (form) with color preferences that balance the geometric forms of the ground and the two equal scales of the tailor.

CONCLUSION

Today's advanced capabilities give the graphic designer almost unlimited options for using color. It focuses on the selection, combination and contrast of color tones. The expression language of figurative or abstract works directly affects the composition with the dynamic structure of color. While the artist reveals his search for color in the colorless world, he can develop a colorless

expression language in the colored world. This situation, which changes depending on the artist's own interpretation, may vary according to the analysis approach of the critical language. The use of color in the art of painting can be a decisive signature for artists. With certain forms used from the past to the present, memorized color applications are made.

While the choice and use of color in the art of painting is according to the personal initiative of the painter, in graphic design, the designer cannot move freely due to institutional or product limitations. In addition, the culturally formed color patterns of the target audience that the design addresses are also important limitations. Within these limitations, the design should be prepared in the best way.

Carmen Herrera has presented us perhaps the most technical style of thousands of years of painting art with her works consisting of geometric colored forms. For many years, drawing and painting geometric forms with the help of rulers and compasses created uneasiness about its acceptance as a painting work. However, with the introduction of all kinds of technology in plastic arts, the negative perspective towards Carmen Herrera's works has been replaced by appreciation. Intense competition in industrial production, trade, culture and art activities all over the world has led to a peak in graphic design works. In color applications, which is the most important subject of graphic design, the accumulated knowledge from the art of painting and traditional handicrafts has been and still is used. Carmen Herrera's works, which she unwittingly revealed as painting works, have made great contributions to color applications in the field of graphic design.

SOURCE

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