

Combination of Two Colours in Human Vision

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ABSTRACT

How to guide a person's vision in order to achieve a desired result? Colours form part of our everyday life. Unmindful we allow colours, through our vision, to affect our perception. By using the right combination of two colours, one has the means to attract and keep the viewer's attention on a chosen object. In this session the speaker will show you a technique which will serve as a powerful tool in various areas of specialisation. For this purpose the speaker will first present, define and name different combinations of colours. From the history of colours in Occidental painting, one will use our visual culture to explore the possibilities of colour combinations in different fields. The spectators will learn how to mix and match colours in order to create a desired effect. The speaker will further sort and classify different impacts and describe the effect of the given combinations on the viewer. Lastly, the speaker will offer some examples and show you how to apply the presented techniques to various disciplines such as advertising, interior design, personal style, cinematography... Information obtained during this session will, with certainty, be capable of being adapted to the spectators' diverse fields of expertise.

KEYWORDS: combination of colours, communication, perception

INTRODUCTION

Michel-Eugène Chevreul (1786-1889), French chemist, introduced a significant change in the area of colours, for both scientists and artists. He was one of the first to theorise on the idea of simultaneous contrast and to acknowledge the fact that the tone of two colours appeared more different when the colours were juxtaposed as opposed to when they were observed separately on the same neutral background. His discoveries on the subject changed the artistic approach to colours for a long time. He explained that depending on the colour of the background, and on the other shades around, a colour will appear lighter or darker, brighter or more dull, closer to or further from another colour. This artistic theory is the foundation of our reflexion on colours and is nowadays widely implemented outside of the field of arts, for example in everyday life.

The aim of this presentation is to explain, from an artistic and cultural point of view, the use of different combinations of colours, as well as the result of such use on our perception. I will address the following points: which combination of colours one should use to achieve a specific goal, and how should colours be combined with one another in order to create a powerful chromatic composition that will guide the viewer's vision in the right direction? By reviewing a wide range of examples – from art to advertising – we will learn different effects of combination of colours on human perception.

THEORY

A number of distinctions can be drawn between artistic and scientific theories of colours. As George Roque explained, the goal of the scientific theory is to describe chromatic phenomenon from both physics and physiological aspects. On the contrary, the artistic theory is merely presented as a set of rules given to painters or designers as a starting point to their practice.

Since the Antiquity and the Middle Ages, different combinations of colours have not only been used in paintings, but also in ceramic and stained glass. Nevertheless, the concept of such use has not been embraced until Newton's theory emerged. Painters and naturalists were the first to show interest in combinations of colours.

They discovered complementary colours - the strongest and most common combination of colours. French naturalist Buffon identifies “opposite pairs” of colours but it is Moses Harris who in 1770 uses the first chromatic circle in *The Natural System of Colours*: “If a contrast is wanting to any colour or tint, look for the colour or tint in the system, and directly opposite it you will find the contrast wanted”. He also identifies the phenomenon of optical illusion (called *optical deception* at the time).

In Arts, it is the German engraver Le Blon in 1725 who identified opposite colours and also “discovered” primary colours in painting (cyan, primary yellow and magenta). Chromatic circle have then been used by numerous artists from Goethe to the Romantic painters such as Runge and Delacroix. These discoveries considerably changed the approach to painting. Painters used to display colours on their palettes from the lightest to darkest, but from the 19th century the display changed to a chromatic circle.

EXPERIMENTAL

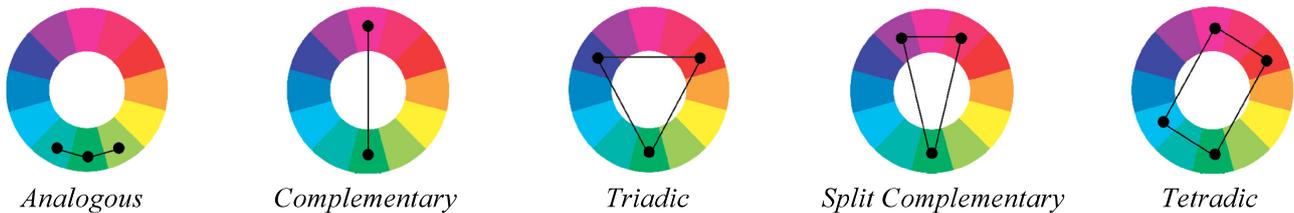


Figure 1. Combinations of colours

Five main combinations of colours have been adapted from the chromatic circle, where complementary colours are placed strictly opposite and are used to create a strong contrast which emphasizes the important element of the composition. On the contrary, analogous colours, based on one main colour, are placed next to one another on the circle creating a serene palette. The contrast is, therefore, much softer and brings our vision into a state of tranquility, allowing the eye to wander around the composition.

Three further combinations are possible: triadic, which forms a perfect triangle, split complementary, which uses a colour and the two colours next to its complementary colour and tetradic, which uses two pairs of complementary colours. These combinations allow to build a more complex combination, gradually directing the eye from the main element to the secondary element...

RESULTS AND DISCUSSION

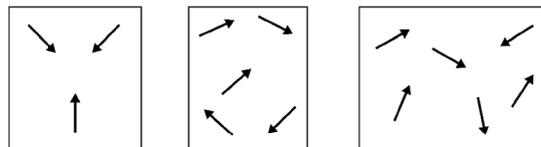


Figure 2. Different positions of the eyes in front of a chromatic composition.

How can one use different combinations of colours in order to guide the viewer’s vision? What result can one achieve by using a specific combination?

By utilizing different colour combinations, one can build a chromatic composition.

One can obtain three main chromatic effects with the different combinations:

1. Focus: The viewer *has* to look in a specific direction, often in to the center of the composition. This technique is mainly the result of the use of complementary or split complementary combinations and was applied during the Middle Ages and again in the Modern Arts by Cézanne. In *Mrs Cézanne*, the painter emphasizes the model by using the red colour - split complementary of blue and green - for the armchair. Today, this technique serves as a powerful tool and is implemented in advertising and fashion. As illustrated below, the brand introduces a fascinating image which focuses the attention on the ties.



Figure 3. Cézanne,
Mrs Cézanne in a red armchair
1877, oil on canvas, 72.4 x 55.9 cm
Boston, Museum of Fine Arts



Figure 4. Advertising using
complementary colours.
© Paolo Reversi



Figure 5. Extract from "The Simpsons",
Matt Groening, 1989-today

2. Circulation: If the focus needs to be on the overall space and not only on a specific object, colour combinations can be used in order to make a provision for the surrounding environment. In painting, it was first used during the Renaissance by Michelangelo, it was also typical of the Flemish art and its use culminated with Rubens. In the *Descent from the cross* painted by Rubens, colours serve as a narrative tool. Instead of showing a mere moment from the Bible, Rubens illustrates the entire story that has led to this point. In this composition each character has a significance and forms part of a circle around the image of the Christ. In the end, this allows our eyes to return to this central image. The "circulation" technique is also used in interior design, mainly in stores, as well as in filmmaking, cartoons or advertising.



Figure 6. Rubens,
Descent from the cross
c. 1616, oil on canvas, 425 x 295 cm
Lille, Palais des Beaux-Arts



Figure 7. Decoration
© teal+briek



Figure 8. *La piel que abito*, Pedro Almodovar
2011, 117"

3. Exploration: there is no specific focus and the eyes of the viewer spread all around the composition. It was first used by Delacroix, known as the first "colourist" painter and then by Fauvist and in late-modern Art by painters such as Derain or Vlaminck. It is also used today in interior design, fashion and filmmaking...



Figure 10. Delacroix, *Women of Algiers*
1834, oil on canvas, 180 x 229 cm
Paris, Musée du Louvre



Figure 11. *Decoration*
© Home Edit

CONCLUSION

Different combinations of colour are an artistic interpretation of the scientific phenomenon of chromatic circle. The combinations of two or more colours are mainly used in painting and allow artists to control the viewer's reaction and influence their vision. People should be encouraged to implement their visual perception and knowledge in paintings and arts as a reference point for various areas of communications.

Different colour combinations can be used to achieve a specific goal: using a pair of complementary is always a good option to achieve a sell of a product. While in decoration or cinematography, a more complex combination, triadic or tetradic, allows the eye to circulate the entire composition without losing the centre point object. Each combination of colours, used in the correct manner, creates a powerful chromatic composition.

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