Examination of Gauguin’s Color Preference

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Abstract: Ecological valence theory (e.g., Palmer and Schloss, 2010) hypothesizes that individuals change color preference undergoing various affective life experiences. Here, we tested whether changes in geographical locations (i.e., living in various locations) affect human’s color preference by examining whether and how Paul Gauguin changed his color preference over time. We divided Gauguin’s life between 1886 and 1903 into seven periods depending on where he stayed, and selected his representative works from each period. We analyzed his paintings using the HSL color model. The results demonstrated that Gauguin changed his color preference once he started living in the tropics. He exploited blue and green, intense saturated colors, and darker colors more. These changes indicate that changes in geographical locations can change human’s color preference.

Keywords: Color cognition, color vision, latitude, Paul Gauguin, R

1. Introduction

Humans have some tendencies for color preference. They tend to prefer blue most (e.g., Bakker et. al., 2013; Eyseneck, 1941; Granger, 1955; McManus et al., 1981; Ou et al., 2004; Palmer and Scholoss, 2010). They tend to prefer different hues as a function of age, gender as well as geographical location (e.g., Bonnardel et al., 2017; Dittmar, 2001; Hurlbert and Ling, 2007; Saito, 1996; Taylor and Franklin, 2012; Yokozawa et al., 2010). While there are such tendencies, humans also have individual differences in color preference (e.g., McManus et al., 1981; Scholoss et al., 2015). Ecological Valence theory (e.g., Palmer and Schloss, 2010; Schloss et al, 2015) predicts that such differences emerge because everyone has various affective experiences with objects/entities and colors in his/her physical and sociocultural environments. For example, if Andrew likes the smell of mint and dislikes that of red tomatoes, he would prefer green to red. Likewise, if Ben likes the smell of red tomatoes and dislikes that of mind, he would prefer red to green. Some recent studies, indeed, demonstrated that human change color preference having affective life experiences. For example, humans change color preference by season (Schloss et al., 2016), having exposures to colored objects with preexisting knowledge (Strauss et al., 2013), and being involved in political contexts (Schloss and Palmer, 2014).

One of the affective life experiences that would affect human’s color preference, yet not being investigated, is traveling or living abroad. Many artists in the late 19th century traveled in Europe (e.g., Italy and the Netherlands) in order to feel inspiration and learn paintings. Paul Gauguin is one of those who traveled more than any other post-impressionists and experienced different cultures. He lived in an urban area (i.e., Paris) and pastoral areas (i.e., Pont-Aven and Arles in France, Martinique in the West Indies, Tahiti, and Marquises Islands) and developed his own painting style called synthetism (Turner, 1996). Looking at Gauguin’s paintings, it seems evident that he indeed changed his color preference through living...
experiences in these places. This suggests that humans would change color preference by traveling or living abroad. In this study, we therefore examined how Paul Gauguin changed his color preference in his paintings over time.

2. Method

We divided Gauguin’s life between 1886 and 1903 into seven periods based on where he stayed: Pont-Aven (July 1886 – May, 1887), Martiniques (June, 1887 – November 1887), Arles (October, 1888 – December, 1888), Tahiti period 1 (April 1891- July 1893), Paris (August, 1893 - May, 1895), Tahiti period 2 (June, 1895 – August, 1901), and Marquesas Islands (September, 1901 – May, 1903). An expert in French art chose a few representative works of Gauguin for each period focusing on portraits; she chose 19 paintings in total. We then obtained the digital images of the paintings from Wikipedia. The smallest size of the images was 500 x 404 pixels. We manipulated the data and converted each pixel into HSL (hue, saturation, and lightness) values using the programming language, R.

3. Results

In order to examine how Gauguin’s color preference changed over time, we calculated mean for hue, saturation, and lightness for each painting. Figure 1 displays mean of hue values for each of the 19 paintings. More than half of the paintings drawn in Tahiti and Marquesas Islands (five out of nine) have hue values between 100 and 200, indicating that Gauguin mainly exploited greenish and cyan-like colors in the paintings. In contrast, his painting drawn in France and Martiniques generally have hue values around 60, indicating that he mainly exploited yellowish colors. Figure 2 displays mean of saturation values for each of the paintings. It seems that Gauguin generally used saturated (vivid) colors when he was not in France. Particularly, his paintings from his second stay in Tahiti have higher saturation values. We further aggregated the data and obtained mean of saturation for each location and found that Gauguin used more saturated colors when he was in Martiniques, Tahiti, and Marqueses. He also used such colors when he was
in Arles. Figure 3 displays mean of lightness for each of the paintings. It seems that paintings from Gauguin’s second stay in Tahiti have lower lightness, indicating that he used darker colors.

![Lightness values for Gauguin’s paintings](image)

**Figure 3. Means of lightness values for Gauguin’s paintings.**

4. General Discussion

The present study examined whether changes in geographical locations affect one’s color preference by examining whether Paul Gauguin changed his color preference over time. The results demonstrated that the painter changed his color preference once he started living outside of France, suggesting that geographical locations affect human’s color preference. He particularly started using greenish and cyan-like colors, and saturated colors more when he was in Tahiti and Marquesas. He also started using darker colors when he was in Tahiti for the second time.

These results support the prediction of Ecological Valence theory that individual difference in color preference emerges due to affective experiences with objects/entities and colors in his/her physical and sociocultural environments. Gauguin’s social and physical environments possibly affected his color preference in hue. When he was in Arles, he lived with Vincent van Gogh for nine weeks at Vincent’s place (Yellow House). By this time, van Gogh had been using yellow in his works. It is, therefore, possible that Gauguin was inspired by Vincent’s color preference and used yellow in his own works. When Gauguin was in Tahiti and Marquesas Islands, he was surrounded by ocean and mountains. Given he wanted to escape from civilization and technology in Europe, it is possible that Gauguin admired colors of ocean and tree (i.e., blue and green) and used them in his paintings more. With the present data, we cannot explain why the painter preferred yellowish colors when he was in Pont-Aven and Martiniques. We will consider Gauguin’s life experiences before 1886 in our future studies in order to find potential explanations.

For saturation, it seems that Gauguin’s color preference reflects the Helmholtz–Kohlrausch effect, which humans perceive intense saturation of spectral colors as part of the color’s brightness. In the tropics, the sun stays up high through a year. This means that intensity of sunlight remains high during day time, and such light increases objects’ brightness. Therefore, Gauguin possibly exploited more saturated colors in his works in the tropics. We speculate that Gauguin chose more saturated colors in Arles because van Gogh was possibly using more saturated colors (e.g., vivid yellow). We will need to analyze van Gogh’s paintings in the future studies to examine this point.

For lightness, Gauguin’s physical and emotional conditions affected his color preference. As mentioned earlier, the painter had several ailments and debt when he was in Tahiti. He even committed a suicide taking a large amount of arsenic. He, therefore, chose darker colors in order to reflect his sentiment in his works. Alternatively, he chose such colors because he started panting dark-skin women in Tahiti. He might have adjusted surrounding colors for the figures in the
paintings.

The present study has a few limitations. One is that we chose Gauguin’s representative works based on his life periods that we defined. That is, we did not consider all colors that Gauguin used in his all works. Some of his works include human figures with different skin colors (e.g., white skin for Caucasians and darker skin for Polynesians). Some other works include landscape with sky and ocean. If we consider all of his works we would be able to see how Gauguin changed his color choice in his paintings through his life. Another is that we could not run statistical analyses. This was because the data size was beyond the capability of our computers. We will exploit cloud computing and run statistical analyses in the future.

References


