

Optical Tone - dynamic color composition

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1 Introduction

To explore and to know the real world we live, how we perceive it is to be the basic start point. The principle should be true in the world of color in visual expression, here in terms of our perception and recognition of dynamic characteristics of the light. The impressionist Claude Monet often painted the same motif under several natural conditions, and fixed the dynamic effect of light on the renowned 33 canvasses of "Cathedrale de Rouen". The artist explored in essence how human being perceives change of natural scene in time and its color dynamism beyond simple problems of expression. But few people know that painting and coloring under the sky for the impressionists' exploration of natural light has made partly possible by the advanced technology at that time of pressing zinc metal to manufacture paint tubes. The advance of technology should be unvaryingly one of the motivation for re-examine the color in expression and communication on products or media in natural or artificial light environment.



Figure 1: Installation image.

2 Exposition

Following the impressionists' approach, I have started an experiment on interaction of color with recent LED technology to control dynamic light from the view point of color composition method (Figure 1). Today the light source such as RGB monitors or full-color LED devices controlled by the additive mixture color method is being common in daily life. But the RGB (Red, Green and Blue) light emission is hard to adjust in accordance with the

human color perception in a straight way. To solve this problem, I have developed an original algorithm based on color theory and color engineering technique to control RGB output device along with human psychological measurements of lightness, hue and chroma (Figure 2). Then I manufactured a tumbler shape product and implemented full color LED device, whose color should be changed by the position in accordance with the human psychological color measurements using the algorithm. And I designed a color composition to be painted on the wall for the following experiment. On this situation, we can interactively examine the problem of human perception and recognition of dynamic characteristics of the light that can not be experienced in daily life. The interaction between the swinging device as dynamic light-source color and the wall as object color allows us to perceive the pure color world freeing from our control mechanism of color constancy.

3 Conclusion

The experiment will lead further explorations for improvement of light environment in digital age and researches on understanding of human color perception, which will open a new history of visual expression and communication on electronic media.

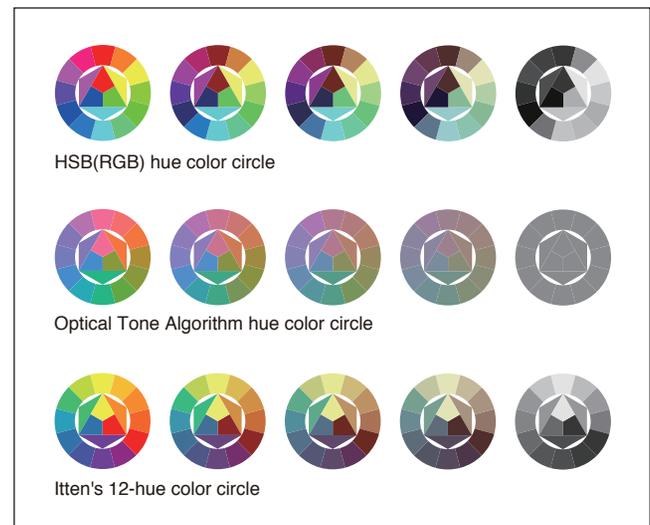


Figure 2: Hue color circle illustration.

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