

## **A Color Study of the Sky Area Focused on the Van Gogh's Paintings**

Xiaodi Cui, Xinyi Shan, Jehun Chung\*

*Master's Course, Dept. of Multimedia, Graduate School of Digital Image and Contents,  
Dongguk University, Korea*

*Doctor's Course, Dept. of Multimedia, Graduate School of Digital Image and Contents,  
Dongguk University, Korea*

*\*Professor, Dept. of Multimedia, Graduate School of Digital Image and Contents,  
Dongguk University, Korea*

*Jixu419@163.com, yarina.0122@gmail.com, \*evengates@gmail.com*

### **Abstract**

*This research analyzed the importance and influence of color expression on psychological and emotional changes of visual perception in the creation of art works. This research takes the element of the sky in the works of Vincent William Van Gogh, a Dutch post-Impressionist representative painter, as the basic research objective to prove the influence of color expression of the same thing on the inner emotional communication of the creator. After synthesizing the contents of previous research and investigation on Van Gogh, this research will summarize the works containing sky elements in Van Gogh's works according to his four creative stages, and select representative works for color analysis and comparison. In this paper, by comparing the colors of the same elements of the sky, we can find Van Gogh's guidance of psychological and emotional changes through the expression of colors in his works, which will play a certain inspiring role in the creation of painting art.*

**Keywords:** *Vincent Van Gogh, Colorology, Post-Impressionism, Color Emotion, Emotional Commonality*

### **1. Introduction**

Color is an important component of art, and Post-impressionism is a very important painting factions in the art history. Van Gogh, the outstanding representative painter of post-impressionism, once said, "My art is written for the future." Indeed, before post-impressionism, realistic style was popular, while Van Gogh's art style was very avant-garde. He is a painter devoted to the emotional nature of color. His unique experience of life and his personal understanding and expression of painting are beyond that time. In this paper, we searched for relevant materials about Van Gogh's life as much as possible and consulted papers on Van Gogh. That there are many subjects to study Van Gogh at present. However, most of the studies are centered on "interpreting and appreciating Van Gogh's works specially" or "comparing Van Gogh with other artists." Therefore, this paper will look for a new entry point to analyze and compare the colors in Van Gogh's

paintings, combining Van Gogh's growth experience, and then look for the change of psychological emotions in Van Gogh's paintings.

## **2. Theoretical Background**

### **2.1 Color Analysis**

This research compares the sky colors of Van Gogh's works in different periods, and makes a comparative analysis according to the color contrast in Johannes Eaton's color contrast effect, lightness contrast, color psychological effect and emotional commonality in physiology and psychology.[2,7]

**Saturation Contrast.** The saturation of colors refers to the lightness of colors, also called the purity of colors. Under the HSB color model, the saturation range is generally 0 to 100%, so the saturation of the primary color is the highest, the saturation is reduced, and the color becomes dim until it loses color, presenting a gray, white and black color without color phase. Different saturation colors often influence the subject, atmosphere and emotion of the work. Therefore, saturation is an important analysis object in color comparison and the simplest and most direct way of comparison.

**Lightness Contrast.** Colour lightness refers to the degree of lightness and shade of a colour, indicating the change of shade and shade of a colour. Light blue and dark blue are the differences produced by the differences in color lightness of blue. Since the Renaissance, artists have tried light-dark contrast. Chinese ink and wash painting is a typical example of light-dark contrast, which uses changing shades of ink and white to create a light-dark contrast.

**Psychological Effect and Emotional Commonality of Colors.** Different colors can cause different physical and psychological sensations, such as size, weight, expansion and contraction. When people are in a red room, their blood pressure will rise rapidly and their emotions will be impatient and impulsive. But in a blue or green room, you will feel gentle and quiet, which is the psychological effect of color. At the same time, color can also evoke people's different emotional associations, different color combinations can produce or enthusiastic excitement, or depression and other different emotions. Goethe discussed this psychological characteristic of color in Colorology and thought that color should be divided into active color and passive color. Active colors can produce a positive, energetic and aggressive attitude; Passive colors are better suited to express that uncomfortable, gentle and yearning mood.[7,9-11]

### **2.2 Criteria for Dividing Van Gogh's Creative Stage**

Van Gogh, as a representative painter of Post-impressionism in the Netherlands, was a pioneer of expressionism and his works had a profound influence on artistic creation in the 20th world, especially on beasts and German expressionism. Born in 1853, Van Gogh apprenticed with the International Art Trading Company as a teenager and read a lot of literary classics during his off-the-job missionary period, which also laid a certain artistic foundation for his subsequent creation. In 1880, when Van Gogh, 27, officially took up his brush, he began to really learn the basics of planning, perspective and other related disciplines, thus beginning his painter career. The time of Van Gogh in Nuernan, Netherlands, in 1883. Fully immersed in painting. The artistic style that was touted was not Van Gogh's creative style at that time. People liked bright colors, but Van Gogh's color was particularly dim at that time. He went to Antwerp's Academy of Fine Arts to study painting, but Van Gogh thought the Academy of Fine Arts course was reasonable but tedious and

lacked creativity. Van Gogh came to Paris in March 1886 as an important turning point in the second and third stage of Van Gogh's creative period. Start with brighter colors and gradually show a unique style in a short stroke. The theme of the work also changed, shifting from rural laborers to depicting cafes, street views, countryside and flowers along the Seine River. In July 1888, Van Gogh became bored with the complexity of Paris's urban life. Set foot on the path of pursuing the tranquility of the countryside, the light and color of the sun and scenery. This stage created Van Gogh's unique personal painting style, and it was also a high-light period of creation. Van Gogh's world-renowned works are almost created at this stage, such as Star and Moon Night and Crows in the Rye Field. Therefore, this research divides Van Gogh into four different periods according to his painting experience, is shown in Table 1. Then summarize and analyze Van Gogh's works according to the period, so as to find out how to use color expression in Van Gogh's paintings to effectively convey psychological emotions.[1,3]

**Table 1. The division standard of Van Gogh's creative stage**



















Stage	Time	Creation Site	Point
1	1880-1883	Brussels, TheHague, Eton	Start to study the fundamentals and skills of painting
2	1883-1885	Nunnan, Antwerp	Immersed in painting, the skills gradually mature
3	1886-1888	Paris	Gradually show off with a unique style
4	1888-1890	Arle, Orville	Created a unique personal painting style

### 3. Discussion of Colors of the Sky in Van Gogh's Paintings

#### 3.1 Analysis of relevant paintings

Van Gogh's works have been screened out to include paintings of the sky, such as "Cluster of Old Houses with the New Church in The Hague" and "Women Mending Nets in the Dunes".[4] Both paintings were created in 1882 and present the author's picture of where he was at that time in a more realistic way. Another example is "Bulb Fields", "Ploughman with Woman Planting Potatoes", "Two Women in the Moor" and "Wheat Field with a Lark", which show a lot of sky in the horizontal five-component picture. In addition, Van Gogh's most influential works "The Starry Night" and "Wheatfield with Crows" in a more abstract way the "different" sky in the author's eyes at this moment. Finally, in light of the division of Van Gogh's creative periods in the theoretical background, we will summarize and sort out the selected paintings according to their corresponding stages, is shown in Table 2.[8]

Table 2. Van Gogh's works are sorted out and classified










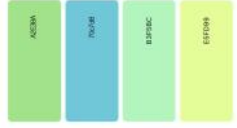









Phase 1					
	1882	1882.08	1882.07	1882	
	Cluster of Old Houses with the New Church in The Hague	Pollard Willows	Roof	Women Mending Nets in the Dunes	
Phase 2					
	1883.08	1883	1884.09	1884	
	Bulb Fields	Two Women in the Moor	Ploughman with Woman Planting Potatoes	Drawbridge in Nieuw Amsterdam	
Phase 3					
	1886.02	1886	1887	1887	1888 03
	The Pont du Carrousel and the Louvre	Windmill on Montmartre	Wheat Field with a Lark	On the Outskirts of Paris	Farmhouse in Provence
Phase 4					
	1888.6	1888	1888	1888	1890
	Summer Evening, Wheatfield with Setting sun	Sunset at Montmajour	Seascape at Saintes-Maries	The Starry Night	Wheatfield with Crows

### 3.2 Discussion About the Colors of Sky

Through sorting out and summarizing Van Gogh's works at all stages (including elements of the sky) and the overview of color analysis in the theoretical background, we select relatively well-known works for color

analysis and comparison at each stage. As shown in Table 3, five pieces of Van Gogh's works are listed, “Women Mending Nets in the Dunes” in 1882, “Two Women in the Moor” in 1883, “Wheat Field with a Lark” in 1887, “The Starry Night” in 1888, “Wheatfield with Crows” in 1890.[5] Because most of Van Gogh's works are also the most representative ones, almost all of them were created in the last Memorial of his life, we selected two works for analysis and comparison in the fourth stage. In the RGB color mode, we use Photoshop to extract the main colors of the sky in five works, and identify the two most representative colors with specific color attributes. This facilitates the subsequent comparative analysis of the sky color. Colour analysis extract reference Table 3. [9]

**Table 3. Sky color analysis in Van Gogh's work**

Stage	Title	Color Extraction (RGB Color Mode)	First Color				Second Color			
			Color	Color Number	Saturation	Lightness	Color	Color Number	Saturation	Lightness
1				4f6070	29%	44%		668BA0	36%	63%
	Women Mending Nets in the Dunes									
2				706641	42%	44%		969452	45%	59%
	Two Women in the Moor									
3				A2E38A	39%	89%		70c7d8	48%	85%
	Wheat Field with a Lark									
4				488DE5	67%	90%				
	Wheatfield with Crows									
4				7e7ab7	33%	72%		DFE58B	39%	90%
	The Starry Night									

“Women Mending Nets in the Dunes” was created in 1882, the first stage of Van Gogh's painting. At this time, Van Gogh was just beginning to learn painting formally and systematically at the Art Academy in Brussels. Affected by the French artist Miller, he was keen to portray rural life with emotion and solemnity. By observing Van Gogh's description of the sky in his works in the first stage, we can see that the overall color saturation of the sky in this stage is low, the color temperature is cold. In the works of “Women Mending Nets in the Dunes”, the main colors of the sky are Tibetan-blue (4f6070) and gray-blue (668BA0). In the HSB color model, the saturation of these two colors are 29% and 36%, the lightness is 44% and 63%,

the saturation is low, not warm and not vibrant, showing a dull gray-blue color as a whole, giving a kind of soft and quiet effect on color psychology.

“Two Women in the Swamp” was created in 1883 and Van Gogh moved back to his home town of Nunnan, Netherlands. At that time, Van Gogh began to paint a lot and devoted himself to his painting creation. The description of the sky still retains its flat tones and the rigid color style. The main colors of the sky are cyan-tibetan (706641) and gray-blue (969452). In the HSB color model, the saturation of the two colors is 42% and 45%, and the lightness is 44% and 59%. The sky color saturation and lightness are slightly improved compared with those of the first stage works. However, gradually Van Gogh realized that the color changes endlessly and artistic creation should go to nature to experience, blindly pursue the inherent image of objects and lose the vitality of painting color.

“Wheat Field with a Lark”, painted in 1887, belongs to the third stage of Van Gogh's painting. The main colors of the sky are yellow-green (A2E38A) and light blue (70c7d8). In the HSB color model, the saturation of the two colors is 39% and 48%, and the lightness is 89% and 85%. At this time, the description of the sky begins to have a personal style in the paintings of this period. The sky begins to become brighter, with a noticeable change in lightness compared with the first and second stages, and gradually changes from a dull low lightness to a colorful and vibrant high lightness color. Deviated from the realistic and rigid painting style, the works gradually become positive colors in this stage, revealing the spiritual richness and spiritual freedom of Van Gogh.

“Wheatfield with Crows”, painted in 1890, is a representative painting of the fourth stage. The sky is mainly dark blue (488 DE 5), with 67% saturation and 90% lightness in the HSB color model. The bright yellow wheat field, pressed by the dark dark blue sky, yellow and blue form a strong contrast, producing color collision. Famous in the world “The Starry Night” also out from this stage, the sky in the main color is purple blue (7e7ab7) and light yellow (DFE58B), in the HSB color model, the saturation of the two colors are 39% and 48% respectively, lightness is 89% and 85%, the night sky should be blue, but van gogh will the color purity of increased, added purple in blue. At this stage, his love for brilliant colors is not only shown in the night sky, but also in the highly bright yellow color when depicting the moon, which makes the moon more expressive. At this time, Van Gogh compared the colors of the first three stages with obvious changes. A large number of colors with high saturation and high lightness were used to express his own unique color style, jumping and crazy, showing people his love for painting and art.

#### **4. Conclusion**

To sum up, through the color analysis and comparison of the sky, we can find that in the early stage of Van Gogh's creation (the first stage and the second stage), the color characteristics in his works are relatively low saturation and low lightness. In the later stage (the third and fourth stages), the color saturation of the sky in his works gradually becomes higher, and the color lightness is also higher. On the other hand, from the perspective of color psychology, Van Gogh's works have also gradually changed from relatively dull and soft passive colors to free and wild active colors. Combined with Van Gogh's growth experience in the theoretical background, we can find that its color breaks the traditional western art color habit. He injected his personal emotions into the painting creation with bright color techniques, and used the tension of color saturation and light and shade to convey the huge emotional changes in his heart to people. As an outstanding pioneer of modernist art, the research on Van Gogh involved many fields of literature and art. In the future, when appreciating Van Gogh's works, we can better understand the works of this paper. Then we can learn Van Gogh's painting color style in the future artistic creation, and express our inner feelings in

the works.

## References

- [1] Lei Chuangfa, "Studying the evolution of his artistic style from Van Gogh's letters", Jiangnan University, China, 2020.  
DOI : <https://doi.org/10.27169/d.cnki.gwqgu.2020.000448>
- [2] Xia Shuang, "A Study on the Aesthetic Implication of Color in Post-Impressionist Paintings", Huaibei Normal University, China, 2022.  
DOI : <https://doi.org/10.27699/d.cnki.ghbmt.2022.000091>
- [3] Xinyi Shan, Jeanhun Chung, "A Study on the Development Direction of Traditional Cultural Contents in the Age of Convergence Media", *The Journal of the Institute of Internet, Broadcasting and Communication*, Vol.22, No.3, pp. 99-104, 2022.  
DOI : <https://doi.org/10.7236/JIIBC.2022.22.3.99>
- [4] Guo Yao, "The Color Research and Practice of Post-Impressionist Painting", Master's Thesis, Shenyang Normal University, China, 2020.  
DOI : <https://doi.org/10.27328/d.cnki.gshsc.2020.000509>
- [5] Wang Li, "Research on Visual Thinking in the Creation of Paintings", Zhejiang Normal University, China, 2021.  
DOI : <https://doi.org/10.27464/d.cnki.gzsfu.2020.000178>
- [6] Gan Weiniu, "Comparison between Freud and famous painters in art history", Central Academy of Fine Arts, China, 2022.  
DOI : <https://doi.org/10.27666/d.cnki.gzymc.2020.000237>
- [7] Ni JingJing, "A comparison between Cezanne and Van Gogh", *FINE ARTS LITERATURE*, Vol. 03, 2021,  
DOI : <https://doi.org/10.16585/j.cnki.mswx.2021.03.015>
- [8] Wu Yukuan, "On the Harmony of Color and Emotion in the Creative Works of Van Gogh", *Journal of Ankang University*, Vol.23 No.3, June, 2011.  
DOI : <https://doi.org/10.16858/j.issn.1674-0092.2011.03.022>
- [9] Appreciation of Van Gogh's works (sorted by time) <http://www.lingganjia.com/view/121180.htm#1890>
- [10] Xinyi Shan, Jean-Hun Chung, "A Study on Video Content Scalability Using Holographic Production Technology", *Journal of Digital Convergence*, Vol.18, No.5, pp. 425-432, 2020  
DOI : <https://doi.org/10.14400/JDC.2020.18.5.425>
- [11] Shen Yijun, "The influence of madness on painting creation, North China University of Water Resources and Hydropower", China, 2021.  
DOI : <https://doi.org/10.27144/d.cnki.ghbsc.2020.000274>