Extraction and Analysis of Rock Painting Color Data Based on Data Association of Color Psychology

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Abstract: We should continue to dig and develop the breakthrough point of color composition in rock color painting based on color psychology. This paper objectively evaluates the present situation of rock color painting in contemporary China. We should conform to the development of contemporary multiculturalism. We should promote and inherit the development of rock paintings, so as to broaden the manifestations of rock paintings and truly meet the aesthetic demands and value pursuits of contemporary people in the new context.

1. Introduction
The correspondence between color in color psychology and color in physics is not only a simple proportional relationship, but also has different characteristics. And how to apply this perception difference to practice, so as to promote communication with the audience, this point has also begun to be explored and studied by scholars.

2. THE CURRENT DEVELOPMENT OF ROCK PAINTING
Rock color painting has a long history, extensive and profound. It is not only an important part of traditional Chinese painting, but also one of the contemporary art forms of painting. Color composition is a kind of expression language in painting, which is the result of artists' aesthetic creation and the key to creating ever-changing color effects. Nowadays more and more painters begin to pay attention to the role of color composition factors in creating picture atmosphere and expressing personal feelings[1]. And as the theoretical basis of guiding painting, combining with the characteristics of rock color painting, it makes various creative attempts.

Rock color painting, as a unique form of expression, traces its development history and has a deep origin with our country. China is an ancient civilized country, which carries thousands of years of civilization, and painting is an important means and media to reflect the development of its spiritual civilization. Rock paintings are painted with early mineral pigments. Huang murals, a treasure of our country, flourished in the Han and Tang Dynasties. As an important part of Huang culture, rock paintings are an important bridge and hub connecting early heavy-color paintings with later rock paintings.

3. EXTRACTION AND ANALYSIS OF ROCK COLOR DATA BASED ON DATA ASSOCIATION OF COLOR PSYCHOLOGY
The design of color matching scheme recommendation model links emotional data collected and analyzed with the recommendation of color matching scheme in the process of system operation, which requires the selection of color classification, emotional classification and how color system and emotion correspond in the system. Regarding the classification of color systems, the relevant color scientists have developed quite mature theories. The classification and selection of emotions and the corresponding problems of color systems and emotions in the recommendation model need to be
combined with the development level of current data emotional analysis technology and the related research of color psychology\(^2\). As shown in Table 1.

| intensity of feeling | basic emotional categories |
|----------------------|---------------------------|
| Grade: weak          | calm, Care, annoyance, boredom, Sentimental, To be puzzled, Worry, accept |
| Grade: medium        | happy, expect, get angry, Hate, Grief, surprised, Fear, trust |
| Grade: strong        | An ecstasy, Be vigilant, Rage, hate, Grieved, Amazed, Thriller, Reverence |

### 3.1 CHOICE OF COLOR SYSTEM FOR RECOMMENDED MODEL OF DESIGN MATCHING SCHEME

Because all the color systems in the visible spectrum belong to the color system, the basic color systems can be combined into other color systems through different mixing relations, plus the black, white and Frey colors in the non-color system. Based on the relevant research results of color system, the recommended model of color matching scheme is designed. Finally, the black, white and Frey color systems in the colorless system and the seven color systems of red, orange, yellow, green, cyan, blue and purple in the colorless system are determined. Ten basic color systems are selected as the color system selection of the recommended model of color matching scheme\(^3\).

### 3.2 SELECTION OF BASIC EMOTIONS IN THE RECOMMENDATION MODEL FOR DESIGNING COLOUR MATCHING SCHEME

The famous psychologist Robert Protozoic, who put forward the emotional wheel, gives the basic relationship between emotional types and emotions. He puts forward that there are two kinds of emotions: one is the basic psychological state in daily life, the other is the feedback psychological state based on the changes of life. Chopstick believed that emotional change was born in accordance with the theory of biological evolution and had an important impact on the survival of the fittest among species. Based on this understanding, in the 1980s, Hitchhiker produced a "emotional wheel" that could reflect emotional changes\(^4\). In the "emotional roulette", he first put forward eight basic emotions, their emotional intensity is the strongest, namely ecstasy, vigilance, rage, hatred, grief, surprise, thriller, reverence. "Emotional Wheel" can be divided into two types: plane display and cube display, which are used to understand the changes and differences between emotions. In the social field, emotional roulette often helps people understand the law of emotional change.

### 4. APPLICATION OF ROCK PAINTING COLOR DATA BASED ON DATA ASSOCIATION OF COLOR PSYCHOLOGY

#### 4.1 IMPROVING COLOR MATCHING SCHEME BY MEANS OF BIG DATA TECHNOLOGY

In the modern design industry, learning the theory of color and skilled application is a very necessary basic skill. In the traditional design industry, the use of color generally depends on the experience of designers and limited research to complete, but the actual situation is far more complex, relying on experience and small-scale research and selection of color schemes can not always accurately reflect the public's expectations of design works. If the reference information related to the design work can be obtained by technical means before the design, and the designer can improve the color matching scheme based on the reference information, the deviation of design caused by experience can be effectively avoided\(^5\). As shown in Figure 1.
4.2 USING INTERDISCIPLINARY THINKING MODE TO OPTIMIZE THE DESIGN PROCESS

Big data technology has brought new ideas to traditional problem-solving methods, and has achieved many results in search optimization, machine translation, advertising and other fields. Traditional design methods tend to rely on the experience of designers to make strategies, while big data technology can pay attention to details that designers do not notice through data analysis, relying on its powerful logic. Analytical ability can often make designers produce new design ideas. For the field of art design, the innovation of thinking and working mode brought by big data technology is more revolutionary than the breakthrough in technology.

Originally, color is the most important expression language in Chinese painting. It is very important in artistic characteristics and artistic value. Nowadays, the age has given rock color and color discourse power, and recasting color innovation is the inevitable development of contemporary Chinese rock color painting. It is not only the need of China's diversified development, but also helpful to find new growth points of Chinese traditional art in the modern process, activate the present perception in the profound and powerful Chinese tradition, and develop toward a broader performance space.

5. CONCLUSION

To sum up, we should innovate and improve on the basis of understanding and inheriting the color style of traditional Chinese paintings. We should neither stick to stereotypes and old traditional ideas, nor blindly pursue visual impact in order to express individuality, leading to the loss of the color tradition of Chinese characteristics in Chinese rock paintings. In the development of rock color painting, find out the style of rock color painting with Chinese characteristics, truly create more excellent works with contemporary characteristics and social spirit, truly lead people to improve artistic aesthetics, and thus convey their true feelings, and free to gallop in the new field and space of Chinese painting.

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