Decoding the Visual Characteristics of Chinese Painting Strokes- A Study on Gao Gu You Si Stroke

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Abstract. The architect Le Corbusier once said this theory: Design has local characteristics and universal characteristics. Local characteristics are greatly influenced by culture. The strokes are the one essence of Chinese painting that characteristics of the strokes are unique to Chinese visual culture. Among Chinese painting strokes, Eighteen Strokes are the typical representative of the aesthetics of Chinese visual culture. However, the current research on the cultural characteristics of Eighteen Strokes is insufficient. The objective of this article is taking Xie He's Six Canons as the theory to decode the content of the aesthetic characteristics of the Gao Gu You Si Stroke (one of the Eighteen Strokes), then to get the visual cultural characteristics of Chinese painting strokes and the fundamental perspective characteristics of the inheritance visual cultural. Based on this, this article will use the Content Analysis Approach to conduct research, by decoding the aesthetic content of the Chinese painting strokes to construct the personality and characteristics required by Chinese visual design.

1 Introduction

Chinese painting has a long history, and strokes are the primary expression technique. With the development of history, the stroke is continuously enriching its expressive power. Figure painting, as the earliest mature type of Chinese painting, has accumulated a wealth of painting theory thoughts and practical experience. Through the development and evolution of thousands of years, it was forming the most representative painting techniques of eighteenth types collectively called Eighteenth Strokes [1]. Eighteen Strokes contain rich historical connotations, which enables the continuous development and broadening of line spirit [2]. However, currently studies the Eighteen Strokes mostly focusing on its development history and representative painters, there is no clear and complete discussion on the content of visual characteristics, such as the *Eighteen Strokes of Chinese painting*, *Lines of Chinese figure painting*, and so on. As one of the oldest strokes in the Eighteen Strokes, the Gao Gu You Si Stroke has great reference value for its historical value and far-reaching influence, it can be used as a template for learning and inheriting Chinese painting strokes[3][4][5]. To make the content of the visual characteristics of Chinese painting strokes clearer and intuitive, so need to decode visual content. Decoding the visual characteristics with the Xie He's Six Canons can provide a decoding framework that emphasizes both theory and practice [6]. The Six Canons first appeared in the Southern Qi Dynasty Xie He's book. They are six painting theories summarized by painter Xie He based on traditional painting practice: 1) Spirit Resonance, which

means vitality; 2) Structure means using the brush; 3) By the object, draw its form; 4) According to nature, lay on the colors; 5) Division and planning mean composition; 6) Imitating and learning from the masterpieces of predecessors[7][8]. Since the Six Canons were put forward, later generations of painters have regarded it as the standard for measuring the success or failure of painting. The Six Canons have become the standard and significant aesthetic principle for the evaluation of Chinese art. After analyzing the relationship between the Six Canons and Chinese painting strokes, the content indicators of visual characteristics that need to be inherited are obtained[9]. Pay close attention to the local characteristics of the design, that is, pay attention to the cultural characteristics of the design[10]. Decoding Gao Gu You Si stroke with indicators, experimenting with the feasibility of indicators. By constructing the relationship between the indicators, clarify the content of the characteristics of the Chinese visual design required.

2 Research Methods

The key problem of this article is that some Chinese painting strokes have been missing or unclearly expressed, which is not beneficial to inheritance the visual cultural characteristics of Chinese painting strokes. According to the characteristics and key problem of this research, Content Analysis Approach is used as the research method of this article. Content Analysis Approach characteristic is classified textual material, reducing it to more relevant, manageable bits of data. The steps of this research method are 1) Select Samples, 2) Categories Construction, 3) Coding, 4) Reliability testing, 5) Theory Construction.

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3 Research process

3.1 Selecting Samples

Tracing the roots of Gao Gu You Si Stroke, by searching for ancient books, four ancient books with sample pictures and descriptions were obtained (Table 1). To describe the Gao Gu You Si Stroke more clearly and intuitively, using the brush (Fig. 1) and the Ink saturation (Fig. 2), which are unique to Chinese painting techniques, are defined.

Table1. A summary table of books with a complete record of Gao Gu You Si Stroke

Number	Book Name	Years	Author
1	<i>Kaisen's Eighteen Strokes</i>	Qing Dynasty (about 1861)	Wang Ying (Used Name: Oda Kaisen)
2	<i>Ancient Buddha painting collection</i>	the Republic of China period (about 1924)	Huang Ze
3	<i>Ma Dai's Painting Treasure</i>	the Republic of China period (about 1928)	Ma Dai
4	<i>He Chao's Three Thousand Methods of Figure painting</i>	the Republic of China period (about 1929)	Wang Yunxuan

Fig1. Tip Brush: The brush is held vertically at 90 degrees around (Tip Brush $\approx$ 90°) to the paper's surface

Name	Ratio (Ink / Water)	Dry	Wet
Light Ink	Around 20%		

Fig2. Light Ink: Ratio (Ink / Water) Around 20%

3.2 Categories Construction through Analyze the Relationship between Six Canons and Chinese Painting Strokes

1) Spirit Resonance was initially being used to measure the vividness of the characters in the paintings but later expanded to other themes and even a specific painting form factor. Now it means that the artwork as a whole has a vivid and charm, full of vitality. If it is understood from the origin of the Spirit Resonance, means that something touches people's hearts, the feeling of being flexible, vitality, endless in the heart. The original meaning of vividness lies in mind. At the same time, it means the powerful expression of life and spirit, including the expression of the object and the painter's feelings and spirit. The purpose of all Chinese painting strokes is to show this sense of vividness and flexibility better. The first Canon of Xie He's Six Canons are Spirit Resonance, and the purpose of Chinese painting strokes are the same.

From this, it can be concluded that the relationship between the first principles of Spirit Resonance and the Chinese painting strokes have the same purpose and is to express this feeling.

2) Structure means using the brush. The traditional Chinese figure painting was all outlined through lines. The second Canon refers to the skills required to use the brush and reflects the beauty and momentum of the brush. Using the brush is undoubtedly very critical and is the carrier of other elements and principles. This is the aesthetic principle determined by the unique materials and tools of Chinese painting. Therefore, the relationship between the second Canon Chinese painting strokes is intercommunication; it is to use the brush.

3) By the object, draw its form. Originally refers to the high degree of similarity in the appearance of the corresponding objects, which should reflect the object of the description. Among the various types of Chinese painting strokes, different types of strokes have different characteristics. Only by mastering the characteristics of each stroke can grasp the essence of the stroke and better use its characteristics to express objects. To describe the object that wants to express, it is necessary to give it a suitable shape according to its image characteristics. While depicting the authenticity of the object, it is necessary to grasp the relationship between the characteristics of the external image and the overall painting and adjust accordingly. Therefore, it is concluded that the relationship between the third Canon and the Chinese painting strokes intercommunication refers to characteristics

4) According to nature, lay on the colors, originally refers to the selection of similar colors based on the color of the object. Now it refers to selecting the appropriate color and density according to the object represented. Chinese painting strokes have different types and characteristics, and their ink, color, and density have different proportions. To better express, the characteristics of the object, choose the right ink saturation. Therefore, the relationship between the fourth principle and the Chinese painting strokes is to choose the appropriate ink saturation according to the characteristics of the object.

5) Division and planning mean composition, the composition must be carefully arranged, considering the particularity and ingenuity of the composition. The composition requires thinking. Chinese painting is very particular about composition, and composition is also a kind of stroke technique. The composition is a subjective arrangement of the positions of objects, a kind of rhythm. Therefore, the relationship between the fifth Canon and Chinese painting strokes intercommunication refers to the rhythm.

6) Imitating and learning from the masterpieces of predecessors. Refers to copying paintings or imparting that function is to learn the necessary skills. Besides, it can be used as a means to circulate works, but it is not equivalent to creation. All strokes of Chinese painting are for better performance of objects. Necessary strokes practice is the foundation, but how to learn it? Can start copy with the representative painters and masterpieces. By imitation of the representative works of the painters, also reach the way to spread the works. Therefore, the

correspondence between the sixth Canon and the Chinese painting strokes intercommunication is imitation.

Through the above analysis, Xie He's Six Canons correspond to six indicators of Chinese Painting Techniques that can be obtained: 1) Spirit Resonance, which means vitality; - Feeling. 2) Structure means using the brush; -Brushwork. 3) By the object, draw its form; - Characteristics. 4) According to nature, lay on the colors; -Ink Saturation. 5) Division and planning mean composition; -Rhythm. 6) Imitating and learning from the masterpieces of predecessors. -Imitation.

3.3 Coding

The first step is to extract the original descriptions related to Gao Gu You Si Stroke from 4 books (Table. 2); The second step is from the extracted interpretations, five key expressions of Gao Gu You Si Stroke Characteristics, Brushwork, Ink saturation, Rhythm, and Representative painter are extracted (Table. 3); The third step is Extract illustrated from 4 books with illustrations (Fig. 3).

Finally, according to the comparative analysis of Table. 3 and Fig. 3 combined with the six indicators obtained from the above analysis, the summary and qualitative of the Gao Gu You Si Stroke are obtained:1) Feeling: Soothing, Orderly, Graceful; 2) Characteristics: Uniform, Thin, Continuous, Fluent; 3) Brushwork: Tip brush, Lifting; Ink Saturation: Light Ink; 4) Rhythm: Dense; 5) Representative painters: Gu Kaizhi; 6) Representative Painting: The Nymph of the Luo River (detail) (Fig. 4).

Table2. Description of Gao Gu You Si Stroke

Book Name	Interpretation
<i>Kaisen's Eighteen Strokes</i>	Using Tip Brush, like the strokes used by the painter of Cao Zhongda to depict clothes. Writing strokes fluent, with concise strokes and brushwork, the texture and folds of the clothes are dense. Traditional painters used it more.
<i>Ancient Buddha painting collection</i>	You Si Stroke, traditional painters used it more. As thin as a gossamer, another name Gao Gu You Si Stroke.
<i>Ma Dai's Painting Treasure</i>	Using Tip Brush, like the strokes used by the painter of Cao Zhongda to depict clothes. Writing strokes fluent, with concise strokes and brushwork, the texture and folds of the clothes are dense. Traditional painters use it more. The most suitable for Gao Gu You Si Stroke using light ink as a Line drawing, a lot of fun.
<i>He Chao's Three Thousand Methods of Figure painting</i>	Using Tip Brush, like the strokes used by the painter of Cao Zhongda to depict clothes. Writing strokes fluent, with concise stroke and brushwork, the texture and folds of the clothes are dense. Ancient painters used it to describe Line figures painting. The anciently called painter of Gu Hutou (Gu Kaizhi)'s painting is very delicate, like a silkworm spinning in the spring, that is, its drawing method are uniform, thin, mellow, powerful, and continuous. This is the most elegant and ancient in the Eighteen strokes. Like Calligrapher of Li Si's Lesser Seal. So, it is not unreasonable to say that this stroke was given by Gu Kaizhi.

Table3. Gao Gu You Si Stroke Characteristics, Brushwork, Ink saturation, Rhythm and representative painters to corresponding interpretations

Characteristics	1.Like the strokes used by the painter of Cao Zhongda to depict clothes; 2.With concise strokes and brushwork, the texture and folds of the clothes are dense; 3.Uniform, thin, mellow, powerful, and continuous, like a silkworm spinning in the spring; 4.Gao Gu You Si Stroke is the most elegant and simple; 5.The most elegant and ancient in the Eighteen strokes.
Brushwork	1.Using Tip Brush; 2.Writing strokes fluently; 3.With concise strokes and brushwork.
Ink saturation	Light Ink
Rhythm	Dense
Representative painters	1.Gu Kaizhi 2.Cao Zhongda

Fig3. Gao Gu You Si Stroke illustration

Fig4. The Nymph of the Luo River (detail); Gu Kaizhi, Jin Dynasty;27cm x 572cm; Painted on silk

3.4 Reliability Test

Invite experts to evaluate1) Whether the samples comply with the sampling principle; 2) Whether the data extraction is accurate;3) Whether translation between Chinese and English is precise; The evaluation results are as follows (Table. 4).

Table4. Expert introduction and evaluation results

Introduction		Agreement Percentage	
Professor Hao Xu		Sampling Accuracy	95%
Member of Chinese Artists Association		Coding Accuracy	95.3%
Faculty of Arts, Anhui University of Finance and Economics		Chinese-English Consistency	91%

4 Research Results

4.1 Create Sample of Gao Gu You Si Stroke

Fig5. Sample of Gao Gu You Si Stroke

4.2 Constructing the relationship of Decoding Indicator

Take the Chinese painting techniques of Gao Gu You Si Stroke as an example, use these six indicators to decode it, can be found that 2) 3) 4) 5) belongs to the theoretical part of the Chinese painting strokes, and 6) is the practical method. Through learning theory and practice, to finally reach the goal of 1). Therefore, the relationship between the indicators system can be derived (Fig. 6).

Fig6. The relationship between the decoding indicators system

5 Conclusion

By decoding the visual characteristics of Gao Gu You Si Stroke, six visual characteristic indicators, 1) Feeling: Soothing, Orderly, Graceful; 2) Characteristics: Uniform, Thin, Continuous, Fluent; 3) Brushwork: Tip brush, Lifting; Ink Saturation: Light Ink; 4) Rhythm: Dense; 5) Representative painters: Gu Kaizhi; 6) Representative Painting: The Nymph of the Luo River (detail) are obtained. From this, it can be concluded which content of

the visual characteristics of Chinese painting strokes needs to be inherited and used.

Utilizing the characteristics of Chinese painting strokes as elements and repositioning characteristics, integrating elements into visual design. At the same time better inheriting Chinese culture, creating more innovative style works. In the following research, the results of this article can be used to popularize art education and promote cultural design derivative products. A similar research and design process can be applied to other forms of traditional art.

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