The Research on Cognition Design in Chinese Opera Mask

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Abstract. Making up a facial symbolism is a very specific skill and makeup art in the Chinese opera. The performers use colorful paintings to paint variety of symbolism and line arts on their faces. These emphasize the characteristics, positions, ages, and the provenances of the characters. The method of this research applies the content analysis method to comprise a literature review of the painted-face of Jing role in the Chinese opera. The literature review has been handled and coded using the qualitative data analysis software NVivo 10. The results of this research found some indication by painted-face attribute values comparison, sources diversity reference, and nodes clustered by attribute value for indicating similarity or unusual from the original texts. In conclude the object of analysis in this research, the facial patterns which appear on the face of a Jing character, can be defined as "descriptive", "hereditary", "imitative", and "name-based" in generally. To the uninitiated audience, the face patterns and colors, which appear upon the stage, may rapidly become an indistinguishable blur. Fortunately in performer's position, one has to unravel the secrets of Chinese face painting is to learn to recognize the symbols and signs stamped upon each Chinese opera character's face.

Keywords: Chinese opera, Painted-face, Facial Symbolism, Content Analysis.

1 Introduction

For the ritual purposes in worldwide, masks and facial makeup are common in singing and dancing activities in different cultures. Throughout the human history, the masquerades in Europe and the facial makeup of American Indians both enjoy a long makeup experiences. But in Chinese society, mask and facial makeup were assimilated into traditional opera and developed along a unique and magnificence path. Scholars of Chinese opera are unable for certain to say where the tradition of painted-face of Chinese opera came about, but they seem surmise it began with the wearing of masks for the battle of war in Chinese ancient times. The earliest record of mask wearing dates to the Zhou Dynasty (1046-256 BC), during which masks were worn when stories about ghosts and gods were performed. Another historical story mentions King Lanling of the Northern Qi Dynasty (550-577). It seems King Lanling

was a brave warrior, but his facial appearance was quite feminine, and he found it difficult to be intimidating in a battle. He eventually took to wearing a horrify mask when riding on his horse showed in every combat after all. The legend of King Lanling somehow gave rise to a form of song and dance performance well known as "Big Face". During the Tang Dynasty (618-907), "Big Face" performances were popular, as they were believed to confer good fortune upon Tang soldiers to embark upon a military campaign. "Big Face" performers who used their teeth to keep the masks in place wore wooden masks [1]. Hampered by the necessity of using their mouths, mask-wearers could not sing. Later, Masks and makeup were universal for the zaju (a variety play consisting of a prelude, the main play in one or two scenes, and a musical epilogue) by the time of the Song (960-1279) and Jin (1115-1234) dynasties [2]. After the formation of northern zaju and southern drama, the techniques of masks and makeup were improved incessantly. The masks were abandoned in favor of face painting. It applied directly to the face as actors began to both sing and dance during the performances. From the very beginning of the face painting, there are only four colors of pace painting were used which are red, white, black and blue. Over time, the patterns and colors employed were stylized and standardized from generation to generation [3], and the transformations of Chinese opera painted-faces design were different during the Periods (see Fig. 1).

According to the above historical records, such progress from those masks made by wood, or to the practice of face paintings on a real human face, the painted-face of Chinese opera does transformed by some factors not only from the artist themselves but also the social aspect both in life styles of audience and artificial techniques. Thus, the purpose of this research is not going to discuss about the sociology of historical aspects but focus on analyzing the fundamental basis of cognition design about the painted-face of Chinese opera performances.

Fig. 1. The Transformation of Chinese Opera Painted-faces Design during different Periods

2   Literature Review

2.1   The Extraordinary Appearance of Chinese Opera Mask

To talk about traditional aesthetics of facial symbolism in Chinese opera, the colors of the facial symbolism especially stand for the personalities and the characteristics [1]. For examples, the red means the loyalty and righteousness, like Kuan, Yu had a red face (the martial god in Chinese society) in the time of Three Kingdoms period (220-280). The green face means the violent man. The blue face means fierce and insidious characteristics. The black face means straight-minded. The yellow face means slyness. The golden and silver color on the face means the characters are are the roles of Chinese fairy. The purple face means steadiness. The white face means very bogus and evil man like Tsao Tsao for example.

Making up a facial symbolism is a very specific skill and makeup art in the Chinese opera. The performers use colorful paintings to paint variety of symbolism and line arts on their faces. These emphasize the characteristics, positions, ages, and the provenances of the characters. This kind of characters is called "Jing" or "Hualian" (painted-face role) by Chinese opera professional. Each kind of painted-faces has its own specific way of makeup called "Facial Symbolism". Every facial symbolism of the paintings and the drawings of Jing characters have different styles. They will be painted on the parts of performers' face (forehead, the two sides of the nose, cheeks, eyebrows, and mouth). Generally speaking, there are four kinds of characteristics of the characters by the facial symbolism in the Chinese opera: the furious and raging people, the bad guys, ghosts and fairy figures and those who showed up in the histories and fictions. In general, the less colorful and complicated the painted-faces are, the higher positions the characters are, and the steadier personalities the characters are. On the contrary, the more colorful and complicated the painted-faces are, the lower positions the characters are, and the more violent characteristics the characters are.

In this research, we were not include all of the painted-faces from the texts that we found but choose only 48 painted-faces of characters [4], whom had with background story, out of a total 500 more (see Fig. 2).
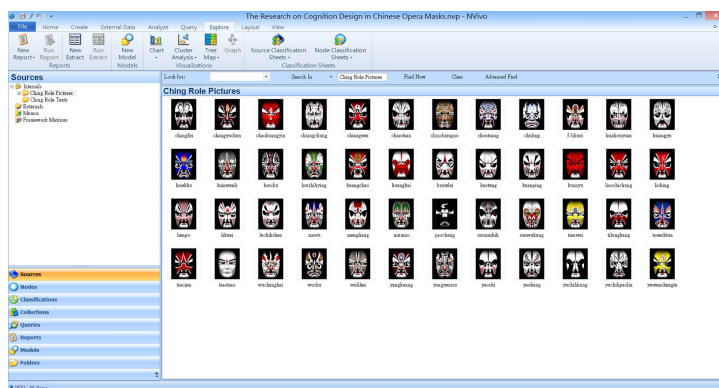

Fig. 2. The Visual Sources of 48 Painted-faces in Nvivo10 Software

2.2   The Combinations of Facial Symbolism in Chinese Opera

Art historians have commented that Chinese artists traditionally seemed less interested in creating realistic depictions of the natural world, and more concerned with capturing the spirit or essence of an object [1]. As shown in table 1 and 2, we indicate categories of texts that the major colors, facial patterns, eyebrows, eyes, foreheads, nose, and mouth were represent different parts of facial painting in Chinese opera.

Table 1. The Attributes of Classification Comparison

Colors	Black, Blue, Gold, Gray, Green, Light-green, Ocher, Oil-white, Pink, Purple, Red, Silver, White, Yellow
Facial Patterns	Fractured, Genie, Monk, Numeral Six, Numeral Ten, Ruined, Solid, Three-tile, Unique, Variegated, Villainous
Eyebrows	Basic Eyebrows, Bat Eyebrows, Buddhist Swastika Eyebrows, Butterfly Eyebrows, Cudgel Eyebrows, Dot Eyebrows, Downward-sloping Eyebrows, Duck's Egg Eyebrows, Elderly Eyebrows, Fire Eyebrows, Gourd Eyebrows, Ladle Eyebrows, Numeral One Eyebrows, Praying Mantis Pincher Eyebrows, Random Eyebrows, Reclining Silkworm Eyebrows, Saw-toothed Eyebrows, Sky-piercing Eyebrows, Sword Eyebrows, Tiger-hook Eyebrows, Triangular Eyebrows, Uneven Eyebrows, Villain Eyebrows, Willow-leaf Eyebrows, Wolf's Tooth Eyebrows
Eyes	Bird Eyes, Elderly Eyes, Kidney Eyes, Large Villain Eyes, Laughing Eyes, Phoenix Eyes, Ring Eyes, Straight Eyes, Villain Eyes
Foreheads	Bat Forehead, Blue-green Forehead, Eight Trigrams Forehead, Fire Forehead, Gold Coin Forehead, Golden Forehead, Good Fortune Forehead, Gourd Forehead, Long-life Forehead, Marred Forehead, Moon Forehead, Original Form Forehead, Peach Forehead, Random Forehead, Red Forehead, T'ai Chi Forehead, Tiger Forehead, True Nature Forehead
Nose	Basic Nose, Curled Nose, Full Nose, Hooked Nose, Laughing Nose, Long or Short Nose, Villain Nose
Mouth	Bird Mouth, Crooked Mouth, Disdainful Mouth, Fire Brazier Mouth, Gold Ingot Mouth, Tiger Mouth, Water Chestnut Mouth, Bearded

2.3   The Processes of Painted-Face in Chinese Opera

A typical make-up kit contains brushes, water-based paints, powder and oil-based paints [1]. The facial patterns of a Jing character are most often painted on with a brush, but they can be applied by hand as well. Although the basic pattern for a particular character is standardized, the face-painter must take into account the individual shape and features of the face upon which he is working. Figure 3 shows the basic steps for the make-up of four main roles in Chinese opera performance. For the Jing role, Kao Teng, the make-up processes are: 1.) A base of white powder is applied, and black powder is applied around the eyes to prevent oil-based make-up from seeping into them during a performance; additional black powder is applied under the nose to prevent the beard slipping off from the actor's face. 2.) A brush dipped in white paint is used to draw the approximate position of the eyebrows, eyes, nose, and facial patterns. 3.) Black oil-based paint is applied to the unpainted areas. 4.) Another layer of white paint is added to set the facial pattern in place. 5.) Pink powder is dusted onto the cheeks over the white paint. 6.) A single line of oil-based red paint is applied to the forehead [4].

Table 2. The Facial Pattern Distribution of 48 Jing Roles

Jing Roles	Colors	Eyebrows	Eyes	Facial Patterns	Forehead	Mouth	Nose
Chang, Fei	Black	Butterfly Eyebrows	Ring Eyes	Numeral Ten	Marred Forehead	Bearded	Laughing Nose
Chang, Yu-Chun	Purple	Sword Eyebrows	Straight Eyes	Three-tile	Good Fortune Forehead	Bearded	Basic Nose
Chao, Kuang-Yin	Red	Uneven Eyebrows	No specific classification	Solid	Marred Forehead	Bearded	No specific classification
Chiang, Chung	Black	No specific classification	No specific classification	Fractured	Long-life Forehead	Bearded	Long or Short Nose
Chiang, Wei	Red	Triangular Eyebrows	Straight Eyes	Three-tile	T'ai Chi Forehead	Bearded	Basic Nose
Chiao, Tsan	Black	Willow-leaf Eyebrows	Laughing Eyes	Variegated	Marred Forehead	Bearded	Hooked Nose
Chin Chien Pao	Gold	No specific classification	No specific classification	Genie	Original Form Forehead	Tiger Mouth	No specific classification
Chou, Tsang	Black	Numeral One Eyebrows	No specific classification	Variegated	Blue-green Forehead	Bearded	No specific classification
Chu, Ling	Black	Downward-sloping Eyebrows	No specific classification	Fractured	True Nature Forehead	Bearded	No specific classification
Fake-Li, Kuei	Black	Willow-leaf Eyebrows	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Hsiahou, Yuan	Black	No specific classification	Laughing Eyes	Fractured	Long-life Forehead	Bearded	Hooked Nose
Hsiang, Yu	Black	Buddhist Swastika Eyebrows	No specific classification	Unique	Marred Forehead	Bearded	No specific classification
Hsieh, Hu	Blue	No specific classification	Straight Eyes	Three-tile	Peach Forehead	Disdainful Mouth	Basic Nose
Hsin, Wen-Li	Black	Wolf's Tooth Eyebrows	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Hsu, Chu	Black	Bat Eyebrows	No specific classification	Variegated	Bat Forehead	Bearded	Long or Short Nose
Hsu, Shih-Ying	Green	Wolf's Tooth Eyebrows	No specific classification	Fractured	Marred Forehead	Disdainful Mouth	Long or Short Nose
Hua, Te-Lei	Oil-white	Villain Eyebrows	Large Villain Eyes	Three-tile	Marred Forehead	Bearded	Villain Nose
Huang, Chao	Red	Numeral One Eyebrows	No specific classification	Unique	Gold Coin Forehead	Bearded	No specific classification
Huang, Kai	Red	Dot Eyebrows	No specific classification	Numeral Six	Marred Forehead	Bearded	No specific classification
Kao, Teng	Oil-white	Praying Mantis Pincher Eyebrows	Large Villain Eyes	Three-tile	Marred Forehead	Bearded	Villain Nose
Kuan, Ping	White	Sword Eyebrows	Straight Eyes	Three-tile	Marred Forehead	No specific classification	Curled Nose
Kuan, Yu	Red	Reclining Silkworm Eyebrows	Phoenix Eyes	Solid	Marred Forehead	Bearded	No specific classification
Li, Ching	Red	Triangular Eyebrows	Straight Eyes	Three-tile	Golden Forehead	Bearded	Basic Nose
Li, Kuei	Black	Willow-leaf Eyebrows	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Liao, Chi-Chung	Red	Triangular Eyebrows	Elderly Eyes	Three-tile	Marred Forehead	Bearded	Basic Nose
Lien, Po	Pink	Elderly Eyebrows	Elderly Eyes	Three-tile	Marred Forehead	Bearded	Basic Nose
Lu, Chih-Shen	White	Cudgel Eyebrows	Kidney Eyes	Monk	Marred Forehead	Bearded	Laughing Nose
Ma, Wu	Blue	Saw-toothed Eyebrows	No specific classification	Variegated	Marred Forehead	Bearded	Long or Short Nose
Meng, Liang	Red	Gourd Eyebrows	No specific classification	Variegated	Gourd Forehead	Bearded	Hooked Nose
Niu, Mao	Green	Bat Eyebrows	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Pao, Cheng	Black	Ladle Eyebrows	No specific classification	Solid	Moon Forehead	Bearded	No specific classification
Ssuma, Shih	Red	Bat Eyebrows	No specific classification	Variegated	Marred Forehead	Bearded	Hooked Nose
Sun, Wu-Kung	Red	No specific classification	No specific classification	Genie	No specific classification	No specific classification	No specific classification
Ti, Lung-Kang	Purple	Elderly Eyebrows	Elderly Eyes	Three-tile	Marred Forehead	Bearded	Basic Nose
Tien, Wei	Yellow	No specific classification	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Tou, Erh-Tun	Blue	Tiger-hook Eyebrows	Straight Eyes	Three-tile	Marred Forehead	Bearded	Long or Short Nose
Tsao, Jen	Red	Triangular Eyebrows	Straight Eyes	Three-tile	Marred Forehead	Bearded	Basic Nose
Tsao, Tsao	White	Basic Eyebrows	Villain Eyes	Villainous	Marred Forehead	Bearded	No specific classification
Wu, Cheng-Hei	Black	Villain Eyebrows	No specific classification	Fractured	Marred Forehead	Bearded	Long or Short Nose
Wu, Chu	Black	No specific classification	No specific classification	Fractured	Marred Forehead	Tiger Mouth	Long or Short Nose
Wu, Li-Hei	Black	Butterfly Eyebrows	No specific classification	Variegated	Marred Forehead	Bearded	Long or Short Nose
Yang, Kuang	Purple	Numeral One Eyebrows	No specific classification	Variegated	Original Form Forehead	Bearded	Long or Short Nose
Yang, Yen-Ssu	Black	Saw-toothed Eyebrows	No specific classification	Variegated	Tiger Forehead	Tiger Mouth	Long or Short Nose
Yao, Chi	Black	Elderly Eyebrows	Elderly Eyes	Numeral Ten	Marred Forehead	Bearded	Basic Nose
Yao, Kang	Black	Saw-toothed Eyebrows	No specific classification	Variegated	Marred Forehead	Tiger Mouth	Villain Nose
Yuchih, Kung	Black	Dot Eyebrows	Elderly Eyes	Numeral Six	Marred Forehead	Bearded	No specific classification
Yuchih, Pao-Lin	Black	Sky-piercing Eyebrows	No specific classification	Variegated	Marred Forehead	Tiger Mouth	No specific classification
Yuwen, Cheng-Tu	Yellow	Uneven Eyebrows	No specific classification	Three-tile	Marred Forehead	Bearded	Long or Short Nose

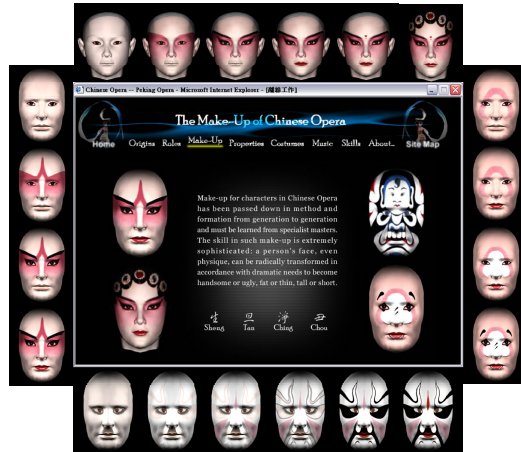Above categorized and listed painted-face sources were by Nvivo10 software

Fig. 3. The Make-up Steps of the Four Main Roles in Chinese Opera

3   Research Methods

Content analysis is one of the most direct methods of textual analysis which can be applied to a range of media and cultural artifacts. But the main weakness of content analysis to date has been that it is very laborious: coding hundreds of facial graphics and texts of Chinese opera can be very time-consuming [5]. So, this research comprises a literature review of the painted-face of Jing role in the Chinese opera. The literature review has been handled and coded using the qualitative data analysis software NVivo 10. It was easier with counting and classifying for the texts. In the first phase will be import 48 visual sources then processed the codes and nodes by selected texts of that in the software. Second will be query and analysis of literature exploring the necessity of researching on the Jing role in Chinese opera culture, the obligation of the research orientation to develop guidelines for this research, and the unique aspects of the painted-face that complicate the process of cognition design those mask painting methodology. The third phase will be find out some indication by attribute values comparison, sources diversity reference, and nodes clustered by attribute value for indicating similarity or unusual from the original texts.

4   Findings and Discussion

The facial patterns of Jing role are highly stylized and resemble not at all an actual person's face. This is the beauty of face painting in Chinese opera. By sacrificing realism, the artists of Chinese opera are able to capture the inner nature of a character in all its glory or ugliness. The object of analysis in this research, the facial patterns which appear on the face of a Jing character, can be defined as "descriptive", "hereditary", "imitative", and "name-based" in generally.
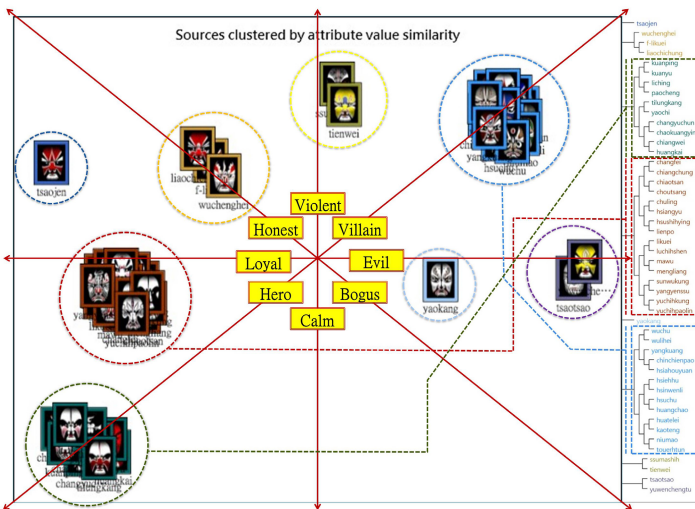

Fig. 4. The Clustered Comparison of Personality Types

4.1   Descriptive

The faces of most opera characters are designed to be illustrative of their personality. For example, villains have white faces to symbolize their cold-bloodedness. The character Hsiang, Yu, who were in the time of Chu Kingdom during the period of Warring States (1030-223 BC), is depicted with an iron trident inscribed upon his forehead to symbolize his great strength and proclivity towards violent action. The coding of personalities in this research are categorized as "hero", "villain", "violent", "calm", "loyal", "evil", "honest", and "bogus". The findings in this approach as shown in Figure 4, the clustered comparison of personality types are based on the attribute value similarities of painted-face in Chinese opera. It indicates that the character Tsio, Jen is a villain man but had a loyal personality. On the contrary, the character Yao, Kang is a hero but had bad inner personalities. The rest painted-faces of the results are indicated with each other to each group as by personality attributes.

4.2   Hereditary

Father and son characters feature similar facial patterns and colors to indicate a family resemblance. In such a case, a character's face may not be a true indicator of his personality. As shown in figure 5, both groups are in the relationship of father and son. But frankly, fewer items as shown in the facial pattern comparison of father and son are really not a true indicator of personality.
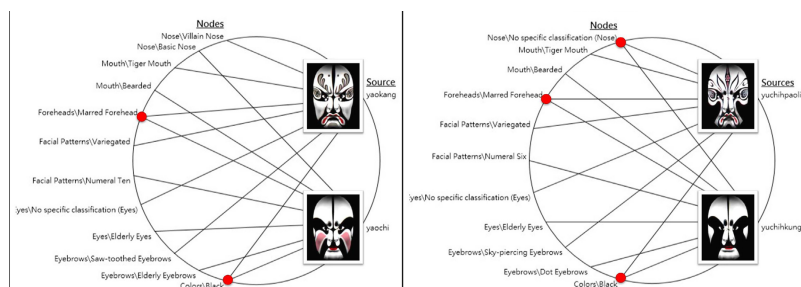

Fig. 5. The Facial Pattern Comparison of Father and Son

4.3   Imitative

When two characters are similar in personalities and behaviors, they may be made up to resemble one another. This is the case with the characters Li, Kuei and his imposter, Li, Kuei, as well as for the characters Chang, Fei and Chiao, Tsan. According to the texts, the latter two are so similar in personality that their painted-faces are identical with each other but the exception of that Chang, Fei has large eyes while Chiao, Tsan has small eyes [1]. As shown in table 3, we found out the first two characters mentioned above are all at same categories, but the second two characters are the same in the fewer items.

So, we used a model for indicating clearly the patterns of Chang, Fei and Chiao, Tsan as shown in figure 6. It shows these two characters' personalities are the same types. But in the facial pattern parts are not really at the same categories. So, we tried to dig in more by scientific way on the quantitative method, Pearson Correlation

Coefficient, in the Nvivo 10 software. The findings are shown in table 4 and figure 7 to evident more about this unusual issue that these two characters are not exactly the same in nowadays even they were same in the past.

Table 3. The Attributes of Classification Comparison

| Painted-face (All Attributes)	Colors	Facial Patterns	Eyebrows	Eyes	Forehead	Nose	Mouth
Chang, Fei	Black	Numeral Ten	Butterfly Eyebrows	Ring Eyes	Marred Forehead	Laughing Nose	Bearded
Chiao, Tsan	Black	Variegated	Willow-leaf Eyebrows	Laughing Eyes	Marred Forehead	Hooked Nose	Bearded
Li, Kuei	Black	Fractured	Willow-leaf Eyebrows	No specific	Fractured	Long or Short	Bearded
Li, Kuei (imposter)	Black	Fractured	Willow-leaf Eyebrows	No specific	Fractured	Long or Short	Bearded
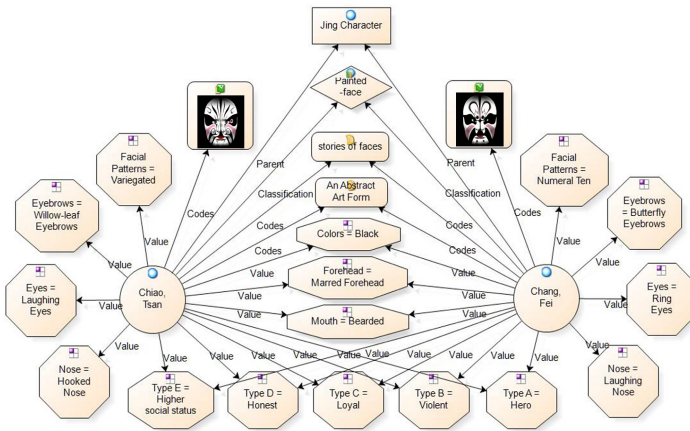
Fig. 6. The Face Design Comparison of Chang, Fei & Chiao, Tsan

Table 4. The Clustered Comparison of Chang, Fei and Chiao, Tsan

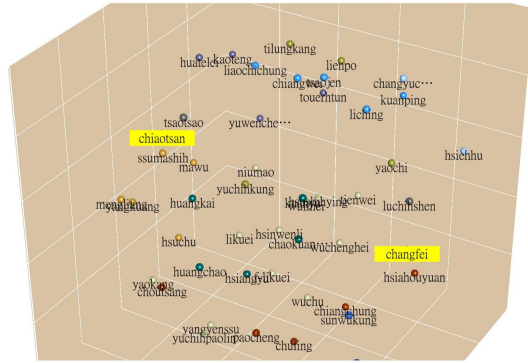| Clustered Comparison	Pearson Correlation Coefficient
By Word Similarity	0.5
By coding Similarity	-0.769231
By Attribute Value Similarity	0.381513
By Attribute Value Similarity (with Types A to E)	0.626667

Fig. 7. The Clustered Comparison by Coding Similarity of Chang, Fei & Chiao, Tsan

4.4   Name-Based

According to the texts, often a character's name or nickname influences the look of the character's face in Chinese opera performance [1]. In a case that keeping with his nickname "Green-faced Tiger", the character Hsu Shih-ying is depicted with a green face as shown in figure 8, while coding stripes were analyzed in the Nvivo 10 software.
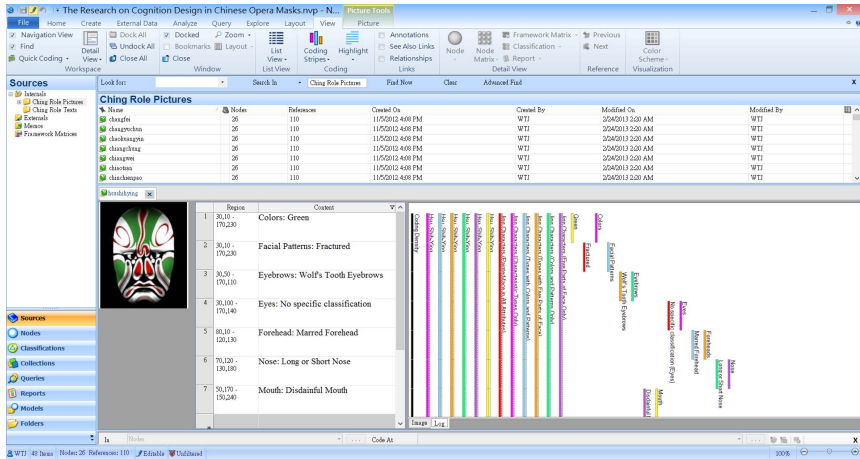

Fig. 8. Jing Role's coding stripes: "Green-faced Tiger" (Hsu, Shih-ying)

5   Conclusion

After the limitation of this content analysis research, firstly we could conclude to the uninitiated audience, the face patterns and colors, which appear upon the stage, may rapidly become an indistinguishable blur. Fortunately in performer's position, one has to unravel the secrets of Chinese face painting is to learn to recognize the symbols and

signs stamped upon each Chinese opera character's face. Such makeup for characters in Chinese opera has been passed down in methods and formations from generation to generation and must be learned from specialist masters.

So, the skill in such makeup is extremely sophisticated: a person's face, even physique, can be radically transformed in accordance with dramatic needs to become handsome or ugly, fat or thin, tall or short. What makes Jing characters such a colorful and fascinating part of Chinese opera is the fact that the patterns painted upon their faces are very revealing of their personalities in different attribute value combinations (See Figure 9). Whether the characters are hero or villain, calm or violent, loyal or evil, honest or bogus, higher or lower social status, an experienced viewer of Chinese opera has only to glance upon the face of a Jing character to know his true nature only by two attributes, colors and facial patterns, are good enough.
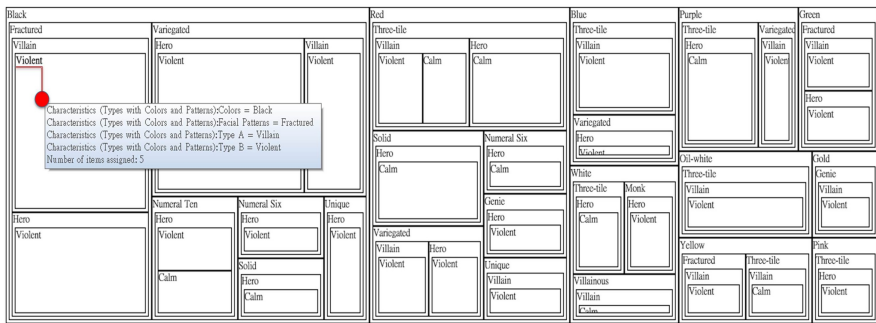

Fig. 9. 48 Painted-faces Compared by Selected Attribute Value Combinations in Nvivo10

Thus, in terms of the relationships among cognitive design on those patterns of masks, the results of this research were what we expected that design factors could be of enormous value to a performer oneself. But both in the social and cognitive dimensions are essential issues for sure in nowadays. For the patterns design competence of Chinese opera painted-face is one thing, but for the naturalization and globalization will be another barrier to conquer in the mass culture society.

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