STUDY ON APPLICATION OF MASK-LIKE FACIAL MAKEUP OF CHINESE BEIJING OPERA IN FASHION DESIGN

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Abstract: In order to explore the cultural value of Chinese opera, this paper discusses the lavishness of Beijing Opera from a design perspective. This paper finds that the movement, narration, cue, costume, stage props and mask-like facial make-ups (Lianpu) in the performance all have their specific symbolic meanings and aesthetic content. Lines, patterns and color of mask-like facial makeup indicate the traits and dispositions of the characters, such as loyalty, wickedness, righteousness, and evilness, as well as the norms of interpersonal relationships in the Chinese culture and society. This study aims to explore the mask-like facial makeup of Chinese Beijing Opera, analyze the meanings of different masks, establish the designing rules based on expert opinions, and apply such designing rules to fashion design. The findings are expected to bring new insights to the art of Chinese opera and propose image transformation design as reference for cultural and creative design.

Keywords: Beijing opera, mask, Art of Chinese opera, Cultural and creative design

1. Introduction

1.1. Research Background and Motives

The art of Chinese opera directly reflects the relationship between historical characters, life experience, and culture. The unique performance art forms have become one of the greatest treasures in the world of art. Among various forms of Chinese opera, this study finds out that Beijing Opera is the most popular one. It was supported by the royal court and blossomed in the Ching Dynasty, and has been regarded as the quintessence of Chinese culture.

This study chose the mask-like facial makeup of Chinese Beijing Opera as research subject. Mask-like facial makeup is a unique art form as it conveys the traits, disposition and emotions of the characters along with the vocal singing, chanting, movement and fighting on stage to present the story. Chi [1] in Collection of Qi Rushan Qi states that “in Chinese history, the only historic carrier that can manifest the thoughts of Confucius and the writing of Chun Qiu, besides Shi Ji and HanShu, is Chinese opera. The essence of Chinese opera can be observed from its mask painting. The profound interpretation and strict rules are superior to the statements in historic records”. It demonstrates the superior position of opera and mask painting in Chinese art history.

As the techniques and cultural spirit of mask painting have been gradually lost, this study probes into mask-like facial makeup patterns, and applies such design on fashion design. Due to the influence from France, the United States, and Japan in recent years, Taiwan's
clothing industry is currently undergoing a fashion transformation stage. In order to truly echoing Taiwan designing situation, this study explores the application of Totem patterns inspired by Beijing Opera's mask-like facial makeups on fashion design, in order to create new cultural and creative clothing goods.

1.2. Research Purposes
By conducting expert interview and literature review, this study investigated the characteristics of mask-like facial makeup of Beijing Opera, and established design norms based on expert opinions for actual creation. The research purposes are as follows:

1) To probe into the history of Beijing Opera masks techniques and apply the images from mask-like facial makeup elements in fashion design.
2) To combine the ideas of cultural design with model of product design, to develop new cultural meanings, and further create the values of cultural drama.

1.3. Research Scope and Limitation
Focusing on Beijing Opera masks, this study referred to Chao’s [2] Collection of Chinese Opera Masks, and treat edits 1,116 masks as the subjects. However, as many of those elements were complicated and overlapping, 127 pictographic masks were selected based on expert opinions for the use of this research. The research scopes are as follows:

1) To treat mask-like facial makeup of Beijing Opera as the cultural element for research.
2) To combine traditional culture with contemporary products, and demonstrate design inspired from the study of Beijing Opera masks in fashion products; apply various elements to garment design.

2. Literature Review
2.1. History of Masks
Chinese opera is originated from poetry and dance in ancient times. Beijing Opera is the most popular artistic achievement for the public. According to Introduction of Art of Beijing Opera by Yan [3], Beijing Opera includes Jin Yuan Ben, musical comedy of Yuan dynasty, tales of Ming dynasty, Gao Qiang, Kunqu opera, Chin Qiang and Hui Opera, all of which have been popular in Beijing at different eras. Together they built a solid foundation for today’s Beijing Opera. Based on History of Beijing Opera for Two Hundred Years by Mao [4], Beijing Opera was formed in the period of 1840 to 1860. Under the promotion by the royal courts, the public preferences, and actors’ efforts, Beijing Opera absorbed various vocal tones from popular local operas in Beijing at the time, a unique rhyme was formed and it gradually became modern Beijing Opera. Legend of Beijing Opera can be dated before the reign of Emperor Xianfeng of Ching Dynasty. Beijing Opera has always been an important folk entertainment and art form in Chinese people’s lives. The various forms and rules influenced the development and value of masks.

From the perspective of masks, this study suggests that faces are the media to present personal emotion and private thoughts. They not only have aesthetic values, but also imply the meaning of symbols. Through the performance on stages, audiences can observe the main characters’ facial features to know a character's personality easily and accordingly, and to be more involved in the stories.

In order to recognize the significance of mask in different historical periods, this study referred to different researchers’ opinions on evolution of masks and explored the uniqueness of mask. According to analysis, Chinese masks can be classified as follows: 1) theory of Wen Sheng (tattoo); 2) theory of masks (actual mask); 3) theory of face painting (facial makeup); 4) theory of mask-like facial makeup, as shown in Table 1.

As shown above, the evolution of Beijing Opera masks, from the theory of Wen Sheng to the official name, mask-like facial makeup in Ming and Ching Dynasties, demonstrates the progress of makeup techniques. The main purpose of Wen Sheng is to fulfill life's basic need by using exaggerate tattoos to scared off animals. While in Northern Qi Dynasties, masks are used to show bravery and threaten enemy. Only until Song, Yuan, Ming and Ching Dynasty, the function and purpose of mask-like facial makeup have been transformed into the expression of stage emotion. It seems that the evolution of Beijing Opera masks represents the progress in humans' basic functional needs, as well as the transmission and results of cultural experiences.

The literature review of this study has shown that the evolution of mask-like facial makeups in opera, emerged during war time, is focused more on its functional and
practicality features in tattoos depiction to intimidating enemies and wild animals. As changes in lifestyle progressed, the artistic value of mask-like facial makeups also improved.

### Table 1. Evolution of Masks

<table>
<thead>
<tr>
<th>Classification</th>
<th>Periods</th>
<th>Evolution of masks</th>
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</thead>
<tbody>
<tr>
<td>Theory of Wen Sheng</td>
<td>Period of fishery and hunting</td>
<td>In Study of Opera • Study of “masks”, Mr. Dong Mei-Kan suggested that Wen Sheng was originated from the period of fishery and hunting. People in ancient times scared off the preys (snake, fish, turtles, and strange) by tattoos.</td>
</tr>
<tr>
<td>Theory of Qi of the Northern Dynasties</td>
<td>According to Jiao Fang Chi, Da Mien was originated from King of Lan Ling, Chang Gong, in Qi of the Northern Dynasties. He was said to be brave but resembled a woman. In order to threaten the enemy, he wore “masks” in battles.</td>
<td></td>
</tr>
<tr>
<td>Theory of face painting</td>
<td>Song, Yuan Dynasties</td>
<td>Mask of Chinese opera was originated from totems in ancient times. It was evolved from Nuoji in Spring and Autumn Period, Dai Mian of Han and Tang Dynasties, TuMian of Yuan and Song Dynasties and finally mask in Ming and Ching Dynasties. Face painting was popular with emperors in Spring and Autumn Period and it was the most vigorous in Sung, Ming and Ching Dynasties.</td>
</tr>
<tr>
<td>Theory of Ming and Ching Dynasties</td>
<td>Patterns of masks in Ming and Ching Dynasties</td>
<td>(Source: compiled according to Wang [5], Yu and Fan [6] and Huang [7])</td>
</tr>
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In order to further demonstrate artistic features, depiction techniques are characterized by continuous improvement along the timeline over different dynasties. During the prime time of the art of Chinese Opera depicting, artistic expression such as Confucianism's filial and piety, people's corruption and ignorance, pride and suspicion features are also adapted into various mask-like facial makeups. Such techniques are the traditional Chinese way to use artistic approach to interpret the essence of human nature and value.

The description of mask-like facial makeups in China, based on facial contour points around features regional expansion Center, complete the nobility and aversion of Chinese characters, the metaphor of traditional roles, reflect the life values of perfection and harmony among the Chinese people.

### 2.2. Structure of Mask

The main structure of masks includes eyebrow, eye socket, corner of the nose, corner of the mouth, face, forehead and Huo Yang (Chen and Kao) [8]. Eyebrows and eye sockets are the centerpiece. Patterns on forehead and faces are used to beautify the overall appearance. Painting of masks includes three key points, makeup patterns, color and patterns.

### Table 2. Patterns of masks like facial make-ups

<table>
<thead>
<tr>
<th>Forms of masks</th>
<th>Characteristics of masks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye brow</td>
<td>Characters’ goodness, vileness and dispositions are shown on brows. Straight brows symbolize higher social status. Curved brows symbolize internal turmoil. With some decorative patterns, the character is either tough or fierce.</td>
</tr>
<tr>
<td>Forehead</td>
<td>Patterns show the goodness and evilness. Actors painted with forehead patterns begins in Ming and early Ching Dynasty. Afterwards, various lines and patterns (including points, lines and patterns) are developed to beautify the masks.</td>
</tr>
<tr>
<td>Corner of the mouth</td>
<td>Face painting mostly has moustache and does not reveal the mouth. Thus, the painting of mouth is usually neglected. Only few young characters are painted with mouth.</td>
</tr>
<tr>
<td>Eye socket</td>
<td>It shows the humans’ dispositions. Eye socket represents the characters’ eyes. An actor’s eyes and faces are often exaggerated. Quiet characters have eye sockets painted thinly. Fierce characters have eye sockets painted wider. With angle upward, the character is cunning. With angle downward, the character is not calm.</td>
</tr>
</tbody>
</table>

(Source: Compiled by this study according to Chen and Kao [8] and Chang [9])
The interviews with professional Beijing Opera mask-like facial makeup designers revealed that painting of masks refers to special makeup patterns on opera actors’ faces, which construct the characters’ personalities and images, such as male character, female character, Ching and Chou (clown). Makeup of male and female characters aims at good-looking without specific painting. The actors have light makeup. Ching is called painted face or Hua Mien. Clown is named Chao Hua Mien; these two characters often associate with diverse lines and colorful characteristics. Ching and Chou are painted with heavier masks to change the actors’ original looks.

According to Chang, in his Art of Chinese Opera Masks and Collection of Art of Chinese Opera Masks, masks can be classified into the following four types, as shown in Table 2.

The portrayal of facial features aims to show social identity, personality, age, and characters’ behavior, features, and specialties. It implies praise or degradation, and represents righteousness or evilness. Therefore, the function of paining of facial features of mask is to demonstrate the characters’ dispositions and personalities. The exaggeration technique conveys the Chinese traditional spirit of reward righteousness and punishment of evilness as its humanistic connotation.

3. Construction of Fashion Design Regulations

This study invited experts from different fields for in-depth interviews to analyze the characteristics of 127 different mask-like facial makeup samples of Beijing Opera. The experts included professional designers, Beijing Opera designers, and makeup artists. The researcher particularly interviewed experienced cultural and creative design professor, Chong-chih Liu, master of Beijing Opera masks, Hsiao-ming Li, and makeup artist Li-fung Wang. Based on expert opinions on similar mask-like facial makeup design patterns, this study established professional design norms of masks, as follows.

3.1. Cross-Axle Method

The line connecting two eyes is a horizontal line, which is drawn from the bridge of nose to lower jaw, thus forming a cross. The upper part is from the hair line of forehead to the connection of two eyes. The lower part is from the connection of two eyes to lower jaw. The length of face is divided into 1/3 and 2/3 and ratio is 1:1.618 which is division of golden ratio (Figure 1).

3.2. Fixed Point Arc Diffusion (symmetry)

Arc diffusion is based on the Cross-axle Method and its center is the axle center. The cross is first drawn and the diffusion continues to northeast, southeast, northwest and southwest. Humans’ faces are oval-shaped. By fixed-point diffusion, visual exaggeration is therefore created (Figure 2).

3.3. Water Pattern

Regarding the face painting of masks, this study identified many patterns of water which symbolize the familiarity with water and wrinkles on faces. In Eight Trigrams, water means femininity, curve and eternity. From the 127 figures, this study generalized 14 patterns with lines of water which are combined with animals. Length, thickness, straightness and curve line form an unique aesthetic. For instance, Pei Xiang is based on thick lines, and monkey is based on thin lines. God of cat shows tenderness. Power of the lines demonstrates different techniques of painting (Figure 3).
3.4. Jiao Yun or Angular Cloud Pattern

Cloud patterns mostly have the images of angles. Colorful cloud patterns show human characters’ richness and uniqueness. Clouds or gods of clouds are usually the representatives, such as Kuei Chin Yang. Jiao Yun or angular cloud is related to Chinese sculpture, patterns of dragon robe, and mandarin jacket. It symbolizes variety and disguise (Figure 4).

3.5. Interpupillary Line or Horizontal Line Parallel to Eye Level

In Ching, Mo and Chou of Chinese opera masks, serial eye points are the characteristics of clowns. Chinese and western traditional operas share some similarities in such makeup feature. Clowns are often presented by circles. For instance, the figure of Xie Xiang is round (Figure 5).

From the above-mentioned five design patterns of Chinese opera masks, it is concluded that the experts use gold proportion segmentation method to simplify totem complexity. Among them, the Cross-Axles Method, fixed point arc diffusion (symmetry), and interpupillary line or horizontal line parallel to eye level are based on the principle of vertical expansion and vector graphic method for breeding. Water pattern and Jiao Yun or angular cloud pattern is the application of law-principles of curve, generating lively face like mask images. The analysis of these principles of composition can provide an understanding on the aesthetic experience and spirit of Chinese Opera masks. Based on these design rules specifications, application of modern design in the future, this study demonstrates the existence of elements of traditional culture value and significance.
4. Demonstration of Actual Design

By analyzing the patterns, colors and images of Chinese Beijing Opera mask, this study recognized its value and characteristics. It further analyzed pictographic mask painting of mask-like facial makeup, and discussed the pictograph of the Six Methods in mask art in the application of pattern. In order to specifically apply the findings from pictographic mask painting on modern design, this study conducted interviews with designers to establish expert rules to fulfill the practical value of applying mask elements in design.

To validate the feasibility of design rules, this study designed a series of costumes to demonstrate the application model of the design rules. Design rules established from expert interviews include the “Cross-Axle Method”, “fixed point arc diffusion”, “water form”, “scrolling cloud form” and “interpupillary line or horizontal line parallel to eye level method”. The researcher cooperated with professional fashion designers to design the Chinese masks, as described below.


Design concept: by adopting the rule of “fixed point arc diffusion”, “gloss of chaos” is designed. In order to apply the effect of magnified image of fixed point arc diffusion in clothing pattern, the researcher deconstructed mask-like facial makeup and applied pattern elements in directions of northeast, southeast, northwest, and southwest to clothing in radiation. Design of “gloss of chaos” was based on flying squirrel sleeve as pattern, black chamois leather as material, using Chinese cheongsams cutting. The gold, silver, red and green computer embroidery created balanced images, and presented design aesthetics of repetition, radiation and contrast, emphasis and balance (Figure 6).

4.2. Style in Length and Breadth – Symmetry of Chinese Opera: Application of “Cross-Axle Method”

Design concept: by the mask rule of the Cross-axle Method, this design applies ample vertical lines. In order to present the characteristics of cross axis of mask, the image is based on the mask of roc. The pattern is expanded in cross framework and flows by vertical axis. At the horizontal axis, sleeve button is applied for visual balance, and forms cross axles of long and short scales (Figure 7).

As to the making of garments, the cutting of “style in length and breadth” combines fashionable overcoat pattern as two sides. At vertical axis, a black long line is the separation. As to horizontal axis, Chinese cheongsam button is the center. In contrast to red and green, and black and white, it highlights white chamois leather. In order to produce refined patterns, the technique of computer printing is applied to show the extreme presentation of 3D cutting (Figure 7).
4.3. Flat Water and Aqua – Angular Cloud of Chinese Opera: Application of “scrolling Cloud Pattern”

Design concept: angular cloud pattern is based on the scrolling pattern of cloud to decompose Chinese mask pattern. In order to show scrolling cloud, the vitality and natural curve are demonstrated by colors. As to the design of the suit, the internal blouse is based on long shirt pattern and printed by transformed and changeable patterns. The coat is made by PU leather with the printing of scrolling cloud with golden threads. Design of “flat water and aqua” combines the design of western coat and eastern patterns to show the fashion of fusion between the East and the West (Figure 8).

5. Research Method

As to the research method, this study developed three dimensions of creative research. The original concepts were transformed to usable design conditions. Through modeling transformation, four design methods are proposed: (1) characteristic attribute; (2) silhouette; (3) symbolic image structure; (4) rebirth and deconstruction.

When designers use “characteristic attribute” and “silhouette”, they can turn complicated elements into simple ones, and recall users’ past memory and images. Thus, the methods tend to be used more frequently by designers. “Symbolic image structure” means to transform element characteristics into abstract symbols. The method is suitable for the design of information goods and products. “Rebirth and deconstruction” means to reconstruct after deconstruction. It enhances the playfulness by reassembling the elements. The value of such creation is its diverse changes.

In the modeling transformation stage, in order to extend the application, the designers can adopt the above mentioned four modeling methods, and combine color
analysis, cutting template and techniques to supplement color perception and pattern uncertainty. If they can apply and combine features of local craft arts, the design would be more completed and enriched.

By three secondary and continuously interactive models, this study created new products: (1) flat water and aqua; (2) style in length and breadth; and (3) gloss of chaos. They demonstrate the feasibility and design model of this design method (Figure 9).

Figure 9. Cultural creativity mode

The cultural and creative thinking method summarized from this research is a poly-integrated design approach (see figure 9). First, it analyses the cultural elements from the pictographic elements of the six categories of Chinese characters, which are sorted into six categories of fashion design application. Then by expert interviews, questionnaires, and mutual discussions, several original concepts are transformed into usable design conditions (see Figure 6). These usable design conditions include the Cross-axle Method, fixed point arc diffusion, water form, scrolling cloud form and interpupillary line or horizontal line parallel to eye level method. All of those are derived from the common features used in mask-like facial makeup of Chinese Beijing Opera. The design specifications integrate the common feature of physicalification shared by the pictographic elements. Design methodologies are used to further explain the methods and systems that constitute the totem elements. All of these design conditions and specifications presented in the research can be applied on other fields of creative design.

In order to realistically strengthening specific styles of various products during the process and evolution of creative design, this research further analyzed the transformation of product features which is commonly used in cultural and creative design to echo the design concept of this study, including the morphology method, silhouette law, construction law and rebirth imagery method. These design methods are commonly and frequently used and adopted in general cultural and creative design. Supplemented by the four methods of design, the new methodologies produce greater product shape benefits. Among them, the morphology method and the silhouette law are mostly adopted by cultural and creative design. In such cases, designers either capture the features or the silhouette of certain cultural element, or transform those features in parts or as whole into another new design. The design patterns allow users to gain resonance effects from their past experiences. As for the construction law, it emphasizes on the abstract feeling toward certain cultural element, and tries to reflect such feelings into product's appearance. While the rebirth imagery method focuses on deconstruction and reorganization of some cultural elements, such combinations often result in a variety of variability.

By using the model of cultural creative design methods, and combining with the color analysis, tailoring style and technology, the product design can be both stylish and functional. The researcher designed the following pieces: Gloss of chaos, Style in length and breadth, and Flat water and aqua. However, color analysis and tailoring style chosen for any specified design (clothes), can be changed and altered according to different materials used for the product, or the specific conditions and requirements of the finished products. Using different design conditions on different materials, with various color analysis, tailoring style and technology, the possibilities of the end product have an ever-changing potential, and provide cultural and creative designers as a future reference.
6. Conclusion

Through expert interviews, this study recognized the application of structure, pattern and color by adopting the concepts of mask design from Chinese Beijing opera. By defining the mask rules of Chinese Beijing opera, in mask pattern and actual product design, this study demonstrated the inspiration of mask patterns for creation and multiple extensions through three products of costume design. Based on flat water and aqua, style in length and breadth, and gloss of chaos, it shows actual application, facial pattern and rules. The conclusions are as follows:

6.1. Application of Facial Structure and Expansion in Ratio of Figures:

In the rules established by experts, the Cross-axle Method classifies faces into water form and scrolling cloud form. The classification is based on facial range and transformation when observing fashion design. The Cross-axle Method is applied to human faces and figures. There are also enlargement of facial and physical feature cross axis, such as Da Vinci’s golden ratio of human figures and application of cross axles in total ratio. Extended image of structure accomplished from this study is applied to three costume design works to demonstrate personalities of masks in Chinese Beijing opera. However, in order to meet the application of costume design, especially in equal proportions to enlargement, extending a version of the costumes used in the region this way can be applied to in graphic design, product design specifications and space applications, which is an important way of transforming design.

6.2. Overall Performance of Adopting Mask Designing Rules:

Design rules can be used individually and/or collectively. When designers focus on single performance, it restricts the multiple developments of creative ideas. Therefore, designers should be encouraged to combine and apply a verity of designing conditions.

6.3. Combine the Elements of Traditional Culture and Modern Technology to create a Quantitative Industrial Model:

The flat water and aqua product designed by this research is the application result by adapting angular cloud pattern from Chinese opera makeup, and expand it to the "scrolling cloud pattern." In its production method, rapid computer embroidery mode and electronic simulation technology are used to complete the production cut. This is the combination of traditional elements with modern industrial model, demonstrating the best fashion technology exemplary.

6.4. Interactive Mode of using the Concept of Innovative Thinking

The "Cultural Thinking Innovation Model" from this study shows the concept to provide diverse elements of the application. The cultural elements to the development process modeling application can interact with Jieke use. With designers’ personal experience as a dependent variable, this innovative model does not change with the times or the mainstream model, but increases the diversity of conditions in order to comply with the actual application, so this model can create unlimited extending mechanism.

6.5. Application Results from Adopting the Concepts of Mask Design from Chinese Beijing Opera

The creative works designed by this research paper entered the 2014 Yilan Creative Expo and 2014 Hualien Creative Expo, and gained extensive media coverage. The works were also sold in the market, which proved the practicality of the concepts of mask design from Chinese Beijing opera.

References
