

Research on the Application of Chinese Traditional Cultural Elements in Modern Furniture Design

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Abstract—Chinese traditional furniture design has a very long history and has formed a classic furniture with Chinese characteristics — Ming-style furniture, which is recognized and used for reference by the world. However, in modern furniture design, with the impact of international style, Chinese furniture has lost its direction of development. Two extreme design features come out: One is to design in accordance with the rules of international style completely, and the other is to remain copying traditional Chinese furniture. Because of the change of contemporary life style, Chinese traditional furniture has lost its use function in many situations and been reduced to art ware, and the furniture with international style cannot represent its regional feature. Therefore inheriting Chinese traditional culture in the design of modern furniture, and making Chinese modern furniture design competitive on the world stage through integrating Chinese traditional culture and modern furniture design has become a very important topic.

Keywords—Chinese traditional cultural elements; modern furniture design; modeling

I. INTRODUCTION

Culture is the symbol and soul of a nation and its inheritance is an important subject that every nation cannot part with. Closely related to people's life, furniture is an important means to create people's living atmosphere. In history, furniture has also become an important carrier of national culture in history. When people are in need of their national culture, cultural characteristics will become an important expression element of furniture design. And people generally have a strong sense of identity to their national culture, making it inevitable to express traditional culture in furniture design. On the other hand, traditional culture also provides rich design materials for furniture design. But the However, the application of traditional cultural elements in furniture design is not only to make a beautiful design, but also to inherit traditional culture. The design formed by our current aesthetic innovation to interpret traditional culture will accumulate and become the traditional symbol of the future, thus the continuous evolution of culture will be achieved.

II. EXPRESSION METHOD OF CHINESE TRADITIONAL CULTURAL PHILOSOPHY IN MODERN FURNITURE DESIGN

The philosophical thoughts in Chinese traditional culture are mainly represented by Confucianism, and Taoism and Buddhism are also important components of it. Together, they have shaped the national characteristics of the Chinese nation and deeply influenced the aesthetics of the Chinese nation.

A. Expression Method of Taoism in Modern Furniture Design

1) *The application of ecological concept in Taoist thought in modern furniture design:* Originated at the end of the spring and autumn period, Taoism is a philosophical thought formed by the theories of Lao zi and Zhuang zi. Taoism discusses the relationship between nature and society, between humanity and heaven. It holds that the world is centered on "tao" and human activities should follow the laws of the survival and development of the nature. "Man models himself after the Earth; the Earth models itself after Heaven; the Heaven models himself after Tao; Tao models itself after nature." (Tao and Teh, chapter 25) The resource in modern society is becoming scarcer and scarcer due to unrestrained exploitation, and the ecological environment has been deteriorating day by day because of serious pollution, so the materials used in traditional Chinese furniture get expensive for their scarcity. Improper use of modern furniture materials also causes great waste and pollution. Therefore, "sustainable development" and "ecology" have become important issues in modern society. The theory of ecological balance and harmony between human and nature in Taoist thought will be helpful to realize the mutual harmony of "human, furniture and natural environment" in furniture design.

a) *Taoism believes that all things are born with their natural characteristics, which are inevitable and cannot be violated by human activities:* Taoism advocates "non-action", but it doesn't refer to "not doing", but "not violating", "doing good", that is, do things in compliance with their rules, meaning "Follow the rule of nature and one can make it without excessive toil". Therefore in the design

of modern furniture, the use function of furniture and the features of the materials must be given in-depth analysis. On the one hand the selected materials should be suitable for the functional quality of furniture; and on the other the processing technology should also be suitable for the selected materials. First of all, the physical and chemical properties of materials should be fully understood and the design should be made according to the objective laws of material properties. At the same time, appropriate processing technologies should be chosen, so that the modeling and function can achieve the ideal effect. For example, natural materials like wood and bamboo which feel good is an kind of people-friendly material and is frequently-used in daily furniture. But as this kind of material easy to corrode and damage it is not suitable in public environment with frequent usage and high intensity of use. Plastics and metals with higher reliability, are resistant to corrosion and wear, and thus can be used to make furniture in public environment. It is also possible to consider the use of a mixture of materials in furniture design. For example, materials with higher intensity and more stable performance can be used as supporting structures and enclosure parts, and materials with better tactile sensation can be applied to the seat or backrest in contact with people. Such furniture complies with the natural attribute of material already, and also accords with the use function of furniture.

b) Taoism emphasizes the importance of nature and rules with which the subjective behavior of human should comply: But this idea of "natural inaction" is not to suppress human initiative and ignore human needs. In Taoism, it refers that initiative should be taken with limit in accordance with natural laws. Such natural laws include the law of man; therefore the theory of Taoism seeks for an ultimate concern that is more beneficial to human beings through the integration of heaven and man. Furniture appears to serve at the daily life and works communication of human. Its feature is the accordance with the person's physiology characteristic and behavior habit since its purpose of design is to improve people's quality of life. Some furniture designs pay attention to exaggerated modeling and gorgeous color relations to attract the eyes of consumers, while ignoring the use of furniture functions. As the scale, modeling, material pledges do not accord with the using characteristic of human body, such furniture can cause harm to body or make people develop bad behaviors while providing no comfort. Therefore, the design of furniture should aim at the needs of people and conform to the scale and behavior characteristics of people using the furniture.

2) The expression of aesthetics of Taoism in modern furniture design: The aesthetics of Taoism has a profound influence on traditional Chinese aesthetics. On the basis of emphasizing "tao", the aesthetics of Taoism is also based on natural beauty. Just as Laozi has advocated, "to remove extravagance" and "to remove arrogance", this seeks simple and unadorned beauty. On the basis of removing gorgeous decoration, Taoism pursues the natural beauty inherent in

material. Ming-style furniture is an example. First, it has concise modeling, without elaborate decorations. Ming-style furniture pays attention to the aesthetic feeling of line especially on modeling. It lays emphasis on the line change on the exterior outline of furniture, making modeling concise yet full of change. Ming-style furniture is good at refining and selecting, which is its decorative technique. Its main means of decoration are embossment, openwork, hardware, Mosaic, etc. Although adornment is used, the essence of simplicity and comeliness has not been lost. Everything is just perfect with icing on the cake. In addition, the Ming-style furniture expresses the natural color of wood. Since some literati participate in the design of Ming-style furniture, their unique aesthetic requirements are also demonstrated in the selection of materials. Materials used, like yellow pear wood, have the tone and texture in compliance with the plain and elegant feeling pursued by ancient literati. The design of Ming-style furniture pays attention to the use of natural beauty of wood itself, and gives full play to the advantages of natural wood texture. The hardwood used in such furniture has beautiful colors and textures. The craft of furniture processing is refined, with no processing of the veneer and extravagant decoration. It highlights the natural feature of wooden material itself.

With a wide range of materials in modern furniture design, the functional division of materials is clear according to the basic nature of materials. For example, the material with better tactility serves as facing material and materials with stable properties and high intensity are used as supporting materials. However, all of these solve just one problem, which is to satisfy functional needs of furniture. And another important thing in furniture design is to express the properties of the material itself. The two are complementary and inseparable from each other, so a balance should be stricken in the design.

B. The Application of Confucian "People-oriented" Concept in Modern Furniture Design

Confucianism believes that the reason why "man" is called "man" is the "human nature", that man has, that is, "benevolence". "Benevolence" is inherent in "people" and "love" is its specific performance. [16] Therefore, the Confucian philosophy of "benevolence" is a philosophy based on "people". And in modern furniture design, the "people-oriented" design concept was put forward at the very beginning and has been a common sense. Its designing method has been mature already. For example, furniture design guided by psychology, the application of humanized furniture materials, the humanized design of furniture size; the humanized color design of furniture, etc. And in the long-term accumulation a mature theoretical system has also been formed, like "ergonomics", "design psychology", etc. "People-oriented" concept greatly promotes the development of furniture design.

Mass production is a major mode of production in today's society. The lower production cost and higher product quality soon occupy the consumer market. Although this

furniture satisfies the basic need of people, but cannot satisfy individual consumption requirements, in terms of both aesthetic appreciation and individual physiological differences. Individuation is a higher requirement for furniture design under the "people-oriented" concept. Therefore, the existing production mode needs to be improved or supplemented with other production modes, such as the development of intelligent furniture to meet individual physiological differences, and small-scale individual customization to achieve individual aesthetic requirements.

III. APPLICATION OF CHINESE TRADITIONAL DECORATIVE ELEMENTS IN MODERN FURNITURE DESIGN

A. Application and Modeling Methods of Traditional Chinese Decorative Elements in Modern Furniture Design

1) *Direct reference*: The decorative elements of Chinese traditional culture are rich in content and diverse in form. These traditional patterns were endowed with beautiful implied meaning and different artistic conception by ancient Chinese people. The direct use of traditional decorative patterns in modern furniture can more clearly express the design intention. This kind of usage often plays the role of a reminder, and becomes the design topic. When using such elements, the designers should first consider the materials and adjust the tone and texture of decorative patterns of the furniture. The basic characteristics of Chinese traditional decorative patterns contain people's habitual cognition of their surroundings and colors. In the combination of new materials, whether to strengthen the contrast, or to integrate, the original characteristics should be considered with target. And then the relationship between Chinese traditional decorative patterns and the figure and ground relationship. Although the Chinese traditional patterns are used as the reminder of the topic, there are primary and secondary. When the pattern is used to highlight the integral shape, the nature of the material it should be used as the "ground". The using method can be being placed with a lessened sized at the corners, or being used as background in the form of dark fringe. When the pattern is in strong contrast with the whole design of the furniture whether from texture or tonality, it can be used as "figure" that is placed at a prominent position.

2) *The transformation and induction*: Chinese traditional decorative elements have the flavor of Chinese traditional culture, but with a deep sense of history, the aesthetic habits of the shape is relatively traditional, or the original image is too interiorized and thus has lost its freshness. Therefore, it is necessary to deform and process the traditional decorative patterns to keep them in line with the aesthetic taste of modern people.

a) *Induction through simplification*: Most of Chinese traditional decorative patterns are more figurative and complex, so induction through simplification is the most direct way to change their shapes. From the perspective of

pattern modeling, modern decorative patterns are generally characterized by simplicity and lightness. Therefore the simplified Chinese traditional patterns not only meet the contemporary aesthetic needs, but also show the connotation of traditional culture. Since such modeling method just simplified the traditional decorative patterns, the traditional modeling image is still quite obvious. Such effect can be achieved through omitting trivial detailed decorate modeling on the basis of grasping the basic characteristics of verve.

b) *Transformation through exaggeration*: This kind of modeling method is emphasizing these features in a prominent exaggerated way on the basis of grasping some modeling features in Chinese traditional decorative patterns, to enhance its artistic expression effect and meet contemporary aesthetic requirements. The type of exaggeration consists of partial exaggeration, overall exaggeration, dynamic exaggeration, etc. Partial exaggeration refers to make the exaggerated local features the main feature of the overall modeling; overall exaggeration endows the design with more modern modeling features by changing the overall proportion of the pattern; dynamic exaggeration is the use of dynamic elements in exaggerated graphics, giving patterns a sense of movement and rhythm.

c) *Transformation through abstraction*: There are many kinds of abstract patterns in traditional Chinese patterns, such as hui patterns, ruyi patterns and tai chi patterns. These patterns are also abstracted from specific objects and thus more widely used. For figurative patterns in Chinese traditional decorative elements, abstract changes can get rid of the original shape, to weaken people's stereotype for the design and add its freshness. On the other hand, abstract patterns can increase the range and manner in which they are applied.

B. Application Method of Traditional Chinese Decorative Elements in Customized Furniture

Customized furniture as the product of modern mass production to adapt to the personalized needs belongs to the scope of small batch production, while its production mode also belongs to the mode of scale production. Therefore to achieve the individuation of Chinese traditional decorative elements in the design of customized furniture, more detailed and concise abstraction and refinement should be made. Efforts can be made from three aspects: the refinement and extension of "form"; the extraction and derivation of "texture"; the induction and development of "color".

1) *Refinement and extension of "form"*: The furniture produced on a large scale is mostly board furniture with concise modeling. So in order to make Chinese traditional patterns more widely used, patterns need to be abstracted, which can be done through geometric form processing. The abstraction of form is not a simple process of simplification. It requires the grasp of its morphological features and cultural connotation through in-depth analysis of traditional decorative patterns, and re-expression of the meaning of

modeling language in modern design. This re-creation is the re-expression of traditional decorative modeling techniques with modern aesthetic appeal, and it is an extension of traditional Chinese decorative patterns, endowing modern furniture with a sense of the times and the national feeling at the same time.

2) *Extraction and derivation of "texture"*: In the long history of China, there are many things that can show Chinese characteristics. The texture they show also reveals Chinese characteristics, such as jade, porcelain, thick, bamboo that show a smooth, transparent, delicate, warm texture, which through the extraction can express Chinese culture. Chinese traditional furniture has single texture feature since the materials used are mostly from wood. But modern furniture can be made from very rich scope of materials. Based on the principle of expressing the natural characteristics of materials, modern materials such as plastics and steel cannot be used to simulate wood; therefore a deeper analysis of the texture is needed to carry out derivative design. That is to express the "qualities" of Chinese traditional furniture by use of modern materials through synthetic design. For example, primitive simplicity: Chinese Ming-style furniture pursues the unadorned beauty of the nature; grace: Chinese literati integrated literati culture into furniture design and endow Ming-style furniture with the temperament of elegance, simplicity and dignity; delicacy: Ming-style furniture is made with fine workmanship, meticulous, strict structure and delicate details.

3) *Generalization and expansion of "color"*: Like other traditional Chinese elements, traditional Chinese colors go beyond their own artistic scope and are endowed with certain symbolic value. Colors are given certain unique symbolic meanings according to the feelings they give people and under the influence of national culture. For example, red, as one of the first used colors by ancient Chinese, giving the feeling of passion and warmth, symbolizes life and blood and it symbolized the orientation of south. Blue, with elegant temperament and calm feelings, symbolizes the sky and the sea. It is widely used in Chinese ceramic, of which the blue and white porcelain is the most representative. It is widely used in Chinese ceramic, of which the blue and white porcelain is the most representative. In ancient China it symbolizes the orientation of the earth. White, representing purity and innocence, is often used in funeral ceremonies and symbolizes the orientation of the east is often used in funeral ceremonies and symbolizes the orientation of the west. Black, used to represent water in ancient China. It was once used as the exclusive color by emperors in Qin Dynasty. It symbolizes the orientation of the north. Yellow, as the color of the sun and the earth, represents wisdom and civilization. Developing into an exclusive color, it was the color that is held in esteem for as long as two thousand years in ancient China. [17] It symbolized the national leadership ancient

China. These colors endowed with cultural connotation have broad national identity, and color is a kind of element that is easier to grasp in modern furniture design.

IV. CONCLUSION

China boasts extensive and profound traditional culture, the combination of which with modern furniture design is the long-time goal for the furniture designers in China. Studying the application method of Chinese traditional cultural elements can not only make Chinese modern furniture design take a place in the world, but also play a very important role in inheriting Chinese traditional culture. With unceasing enhancement of the overall level of Chinese furniture designers, many researches on Chinese traditional culture have been made in the process of design and theoretical study, and some results have been achieved. It is believed that in the near future, with an increasingly perfect theoretical system of the inheritance of Chinese traditional culture in furniture design, more and more design masterpieces will appear, and more master furniture designers will stand on the world stage.

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