

# The Balance Point of Individuation and Scale of Industrial Design in Production

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**Abstract:** Ethnic minority patterns in China provide a continuous stream of design inspiration for modern design. The information visualization analysis of Chinese minority patterns is an effective means to explore the internal laws of Chinese minority patterns, so as to better serve modern design, contribute to the development of modern design in the world and inject new vitality. In this paper, through the systematic characteristics of information visualization, the author makes a comprehensive comparison of Chinese minority patterns from three aspects of regional culture, color characteristics and symbolic patterns, analyzes the application of Chinese minority patterns in modern design, and explores more possibilities of Chinese minority patterns for the future development of modern design. This method is a more effective way to obtain relevant information of ethnic minority patterns, deepen the understanding of Chinese ethnic minority patterns, inject new vitality into contemporary modern design, and provide continuous inspiration for the modern world design.

**Keywords:** Mechanical production; personalization; standardization; modularization

## 1. Development Process of Industrial Design Production Line

### 1.1. Industrial process breakthrough

One of the most important industrial innovations in the 20th century is the first "flow production line" established by Ford Motor in 1913. This concept of production not only triggered the "automobile industry revolution", but also became a model of industrial production technology and management at that time, which made the automobile move from luxury to popularization. The most obvious and direct impact of the running water production line is the substantial increase of production, greatly reducing the price of the classic model T, and indirectly promoting the popularization of automobiles, making the automobile a part of American public life.

But the century old automobile industry, which makes Americans proud, has been rewritten by the Japanese. Japan Toyota valley bottom jumped up, producing V-type reverse process breakthrough. Compared with Ford water production line to improve production efficiency by "standardization" and "standard operation", Toyota production system pursues the concepts of "instant production" and "self-reliance" on this basis, and actively eliminates unnecessary waste in the production process.

This Toyota production management system, which is "pursuing no waste, maintaining high quality, focusing on customer demand and constantly seeking improvement methods", has become the pioneer of the intensive production in the 21st century.

### 1.2. New materials and new technology progress

From the perspective of the evolution of science and technology, the two world wars in the 20th century promoted the material research and development and technological innovation, and then affected the design thinking of industrial design in appearance. In terms of furniture design, Aalto invented the bending plywood technology in the 1930s, which not only solved the 2D challenge of wood from "line" to "face", but also opened a door for the development of bending wood technology. For example, Eames, an American design studio, developed the 3D curved wood technology of molded plywood, and even inspired Japan's Liu Zongli to create the classic butterfly stool.

Alvar Aalto's 2D curved wood technology first cuts the wood into grooves of different lengths,

inserts the veneer glue and heats it, and then presses out the 2D bending curve by machine.

In addition, the light and hard "aluminum alloy" is also a new material widely used after World War II. In particular, plastics have the advantages of easy processing, durability, rich colors, low cost, etc., which make plastics more able to meet the needs of different designs and functions. The first integrated plastic chair named Panton chair classic was published in 1967. Its cantilevered structure is as beautiful as the curve of human body. However, with the consideration of environmental protection and the evolution of plastic technology, it was not until 1999 that the structure was strengthened with monomer formed polypropylene material, which really solved the durability and environmental protection standards of integrated plastic molding. It will help to reduce the demand for natural wood recycling and other ways in the future.

## **2. The Challenge Of Designers In Industrial Design**

### ***2.1. The challenge of design psychology change***

Good design can attract people and create pleasant aesthetic experience. Different gender, age, social background, living habits will cause different aesthetic embodiment of consumer psychology. But for the objective conditions of a product, when people see a product, they will first perceive the transformation of color and graphics. In the basic composition of graphics, the differences of point, line, surface and geometric graphics, the differences of color, the size and distance of space, and the texture of texture. These elements exist alone or in combination, which will make the visual psychology produce different transformation effect.

#### ***2.1.1. Effect of graphics on psychological perception***

Point, line, face, body visual psychological effect, more regular arrangement of the point into the face makes people feel more comfortable. The arrangement changes between points give people different visual sense. The moving lines of points are different in size. The combination of scattered positions gives people dynamic feeling. The length, thickness, broken line, curve and straight line of points feel different. Point is smaller than line, and line is smaller than face. "Point" and "line" will form a surface respectively or in combination, giving people a sense of massiness, strength and dignity. "Body" is composed of "face", which is closer to people's daily visual sense, so the sense of substitution and space are better.

#### ***2.1.2. The effect of color on psychological perception***

In human vision, color occupies an unshakable position, and people's emotions will change with the change of color. The colors of the same color system have light and shade, depth changes, higher color brightness, obvious color tendency, complementary color and contrast color, which are rich and interesting. They are combined to form a visual balance. Sometimes, the principle of contrast color can be used to realize the collocation of secondary color with main color. There are no more than three kinds of color matching in a painting, which is suitable for anxiety.

#### ***2.1.3. The effect of material on psychological perception***

People's feeling of material often comes from the tactile impression of it in their inner memory. Through the direct touch in their inner memory, which is different from the mood at that time, it directly affects the feeling of material. The temperature, humidity, softness, hardness, smoothness and sharpness of materials will affect people's mood.

Cotton gives people a warm and soft feeling, which makes people happy; the quality of the wool is very light, grows on plants or animals, and feels comfortable and intimate; the ripples from the water waves fluctuate and fluctuate and jump long, giving people a sense of comfort and flexibility; the head is a tree in itself, which makes people have a sense of vitality, which is common in the floor in life, which makes people feel warm and comfortable at home; The glass is transparent and smooth, which gives people a sense of transparency and smoothness. Materials that can guide people's negative emotions: the daily touch of metal is cold, and metal products are also extremely hard, such as hammers and sewing needles, which give people a sense of strength and tingling; the surface of sandpaper is not uniform, and the touch has a sense of friction, and the force will have burning pain; the cement is hard and the touch is cold, which makes people feel cold.

## ***2.2. The challenge of the development of aesthetic style***

Chanel, for example, has experienced a crazy brand since the beginning of the 20th century. In the more than 100 years when neoclassicism and neorococo were rampant, the sparks of creativity collided everywhere. It was this crazy era that made it unique and rewritten the history of clothing.

From the end of the 18th century to the beginning of the 19th century, the trend of thought of "neoclassicism" sprouted in the field of French art. In the middle of the 19th century, the "neorococoism" with dynamic patterns of flowers and plants and varied curves. In the field of art, in addition to using the corset to show women's slender waist and legs, the decoration also enhances the strong contrast between waist and buttocks in the visual effect. At this time, the aesthetic is the extreme quasi "s" type female curve. From the end of the 19th century to the beginning of the 20th century, the traditional style of dress was replaced by smooth lines and leg sleeves, and the qualities of "noble" and "elegant" were especially prominent in the linear decorative style. However, soon after, the "S-shaped" body style made a comeback. On the basis of the original compact top style, the wide skirt and the emphasis on the proportion of chest, waist and buttocks, the "S-shaped" body style exaggerated the decorative feathers and pushed the ostentatious decorative wind to a climax.

Chanel brand clothing is always the catcher of the characteristics of the times. After the war, it quickly absorbed the characteristics of "flat chest, flat hips, wide shoulders, low waist" in men's clothing, extracted them as flat and simple style, combined with comfort and convenience to wear and take off, as the main characteristics of brand clothing throughout.

With the recovery of French economy and culture after the war, women are no longer satisfied with the ambiguous gender characteristics of clothing, but need to highlight the unique charm of women's decorative clothing. Chanel, as a sensitive physique brand in the fashion industry, has early smelled the new demand of people for clothing, gradually weakening the characteristics of male elements in clothing. On the basis of retaining the two basic characteristics of "black" and "knitted fabric", it skillfully adds female characteristics: at the edge of the neckline, cuffs and other places, it adds the secondary color matching surface which is different from the main material and the main tone. The material is used for splicing design. This new design concept, a change of traditional clothing minimalist appearance, just the right decoration, fully meet the psychological demands of women at that time. As far as the external contour of the clothing at that time was concerned, the waist design was added, but it did not return to the traditional "X" shape, but made the waist size more in line with the ergonomics size. In this process, it still inherited Chanel brand's concept of women's freedom of movement and became another major breakthrough in the field of women's clothing.

Design is not immutable, the public aesthetic style may change with the changes of the times, different economic ability, different cognition of things and so on. Conservative design can not meet the growing needs of people's life, so we should keep pace with the times and study the new development trend of design.

## **3. Chapter three Prospect And Summary Of Industrial Production Development**

### ***3.1. Balance between personalization and standardization***

Standardization is an efficient centralized design mode, while personalized design is a decentralized design mode in pursuit of innovation. It seems that the two are not compatible, but at the same time, it is difficult to completely separate. In fact, only by carrying out standardization can we realize scientific management and standardized process; at the same time, only by fully paying attention to the personality differences of different needs of creative content and carrying out personalized design in standardization can we fully reflect the efficient design rhythm and the design needs of pursuing personal aesthetics.

In terms of the current situation of social development, with the rapid development of the Internet, users are receiving more and more diverse information, learning culture, and aesthetic differences in different places. Traditional standardized design can not meet the needs of modern people's pursuit of innovation. Only in the fast-paced and efficient mode of industrial production, the pursuit of personalization and modular customization, can we survive in the era of information explosion, meet people's growing spiritual, cultural and material needs, and pursue a better life and excellent design.

### 3.2. *The influence of pursuing individual psychology on design and production*

Some people say that modern society is a lazy society, people like to repeat an action of the operation, so in the design, we must consider the automation situation, and design more simple industrial products. In particular, mechanical industrial products, in addition to the basic automation design, also need to consider the connection with the Internet of things.

Personalized design, to a large extent, means that people's use and operation are taken into account in the design, and some products that do not conform to people's operation habits can not be selected in order to save money. Now industrial design can never be a cold design, but should be designed according to people's emotional needs, because in the process of design, people do not pay attention to the user's feelings. It's hard to sell the products designed in this way, and even after they are sold, it's hard to form user stickiness. Therefore, in terms of industrial design, we need to design from various angles.

The pursuit of personalized design is in line with the historical trend in promoting design progress. In the 13th five year plan for the development of national strategic emerging industries issued by the State Council, five areas of China's strategic emerging industries during the 13th Five Year Plan period are proposed, including the new generation of information technology, high-end manufacturing, biological, green and low-carbon digital creativity, these fields represent the direction of a new round of scientific and technological revolution and industrial change, and are the key fields to build a modern industrial system and promote the structural transformation and upgrading of the manufacturing industry.

From the perspective of effectively promoting the transformation from "made in China" to "created in China", the challenge for us is severe. How to design a product to meet the needs of many users? How to design a high quality product to meet the quality improvement of "made in China". We talked about intelligent manufacturing, smart home, big data and industrial cloud. In order to become a powerful country in quality and manufacturing, the first thing China should do is to become a powerful country in industrial design, so as to become a powerful country in independent innovation and design. China is making progress, so is design.

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