



A Brief Probe into the Process that Clothing Structure Take to Tridimensional Structure from Plane Structure

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Abstract

Ground on the change process of clothing structure modeling and the cause of clothing structure changing, this paper analyses the reason of how does Clothing Structure Takes to tridimensional structure from plane structure.

Keywords: Plane mode, Tridimensional mode, Clothing structure

Scanning clothing history, there are different understandings on the relation between clothing and human in the orient and the west. Especially after the 13th century, the clothing structure of the orient and the west had been moving in different directions. It should be said that clothing structure is very similar between the west and the orient early in the human civilization. The technique of clothes making was plane cuts, taking no account of fitness relation between clothing and human. But after the 13th century, the west clothes making tended towards tridimensional structure whereas the orient clothes making still used the old technique of plane cuts. Now, we will focus on how the west clothing tacked to tridimensional structure from plane structure.

Judging by the form, Western clothing had been evolving into modern tight clothing from ancient loose clothing; from the viewpoint of modeling, it had been developing from non-forming period, through half forming period, to human forming period. The evolution and development of Western clothing has long history and deep accumulation. The science, functionality, rationality and variability which it reflected has been became a kind of preponderant culture that recognized and followed by the world. First look at the changes history of clothing structure.

1. Change process of clothing structure modeling

Scanning clothing history, there are several periods that the development of clothing structure modeling has experienced.

1.1 Plane mode period

The main forms of clothing structure in plane mode period are matting clothing and envelope clothing. The kind of matting clothing is mainly divided into three types: Ancient Egypt-waist clothing, ancient Greece-shoulder clothing, and ancient Roma-wrap clothing.

In plane mode period, the clothing structure feature of matting clothing is the dress way of plane wrapping. This kind of structure has not been accurate cutting. It is basically a plane wrapping that cause many redundant folds. The clothing structure feature of envelope clothing is cutting cloth crisscross and holing in the center(neckline), and then sewing up at sleeves lower and body side. In the latter half of the 12th century, making clothes began to shrink waist measurement. Cut front piece and back piece of clothes the shape of human's body on both sides, and make an opening on the midpoint of back piece from neckline to waist, then dart with cord in middle and both side. On the cutting, this is the first step of making clothes fitting and the aura moves that started to stride forward medieval clothing which pursuing cutting techniques. It implied that clothes making had disengaged ancient techniques and entered a new period of development.

1.2 Tridimensional mode period

In tridimensional mode period, the main form of clothing structure is tight clothes. During the 13-14 century AD period, gothic is the beginning of tight clothing culture. The 15-18 century AD is the period of development to tight clothing culture. It also is a crucial period that East-West clothing had been moving in different directions.

From the beginning of the 13th century, a new breakthrough emerged in clothing structure modeling and cutting techniques. Removing redundant capacity of the gap between the chest and waist from clothing front, back and lateral two directions, that is dart. The method solved the problem that unfitting and botchy lateral hold appeared when shrinking waist measurement, so it could naturally represent the beautiful body without any reluctance. It is precisely because that lateral formed, the way of clothes cutting was completely separated from loose clothing structure which

formed by two-dimensional space of ancient plane, thereby it established the basic modeling of tight clothing which formed by three-dimensional space. There form west clothing disengaged ancient plane structure, entered a new era of pursuing three-dimensional form. In the development period of tridimensional mode, the feature of clothing structure modeling is emphasizing the appearance design of chest, waist and hip through various means. Cut cloth to separate it from top to bottom, dart on back and lateral seams for shrinking waist, and make top part and bottom part respectively taking waistline as the border. This way shows the basic conception that whole clothes is composed of several parts and lays the foundation for modern rational one-department style clothing. During this period, the artistic community made an in-depth understanding of human body, thereby clothing structure became more in line with human body.

1.3 Perfecting period of tridimensional mode

There are many features of clothing structure in perfecting period of tridimensional mode: First, the method of clothes modeling tended to perfection and diversification, using fabrics own characteristics, the technique of obliquely cutting was created. It made fabrics fit human body and model more fluent. Second, the emergence of high-class boutiques made clothes cutting more finished, modeling more tridimensional and fit for human body. Third, the emergence and rapid development of the garment industry made cutting more concise and fit for the need of community large-scale production. Last, the emergence of various subcultures became structure modeling freer to meet the need of personalized performance.

2. Reasons for the change of clothing structure

It is not a casual thing that the development of clothing structure changes. It will reflect even more profound meanings: the different way of thinking and different attitude towards human body between the orient and the west.

2.1 West clothing structure establishes on the basis of a rational understanding of human

Human is the carrier of clothing, clothing should be people-oriented. Increasing the importance attached to human factors and the objective understanding of the human body will undoubtedly have an enormous impact on clothing modeling and structure. Westerners' aesthetic consciousness of body doesn't take the beauty of God to deny the beauty of human. It is just because the envisagement and appreciation to human body, people concerned their own true color directly and vividly, constantly pursued the regularity which takes body as an objective existence, proposed beauty rules about form such as order, rhythm, integrity, proportion, harmony and so on, precisely analyzed human body directly using numeral and proportion.

Clothing is an integral part of body art. Rational understanding of human body takes clothing as the carrier to show the beauty of body. The obedience and shaping of human body at clothing structure meanwhile stress the gender differences. It was just because of this, during medieval Gothic period, west clothing tended towards tridimensional space from ancient two-dimensional space and the three-dimensional structure came into being.

During this period, the common structure characteristics of cotardir, lady's large, men's pourpoint and hose was fit for human body. Especially lady's large, it darted at the front and back of cloth, cut respectively. The emergence of lateral cloth brought the design of clothing structure into tridimensional structure. On the other hand, west clothing also showed strong shaping. During most times of west clothing history, lady's clothing stressed the nicety at upper body and the bulge at lower body to show erogenous image of slim waist and plump hip which was very different from man's, however men's clothing showed the manliness of muscularity by shaping the expanse at upper body and tightness at lower body.

2.2 Science and Technology promote the development of structure design

Clothing structure design is a practical discipline which is closely linked with life practice. It emphasizes on rigorous science and high degree functionality. Progress in science and technology play a direct role in promoting the design of western structure.

From the cultural concept, it is also showing the scientific influence on western clothing structure. From the view of the basic spirit of western culture, the westerners emphasized ens not nothing, entity not virtual, when pursuing the ontology of universe, and therefore formed antinomy between subject and object, man and nature. During the process of culture creating, separated entities from empty, constantly went deep into object recognition. Form is further reification of entities, is the clear performance of the objective laws, is the grasp to the objective laws. Clarity is the westerners' pursuance of understanding the world, recognizing their own, pursuing the truth. The westerners used to establish the truth when they reflect, debate and experiment. This kind of traditional customs bound to make them study objective things with rational and scientific attitude.

From the perspective of clothing structure, western clothing relied mainly on the tridimensional cutting, emphasized on the effect of tri-dimension, attach importance to seam and repair for exactness and fitness in the vast majority period of western clothing history. For example, man's doublet on the Middle Ages and lady's corsage was cut according to human body, so the ready-made clothes was very fit for body, showing the mathematical and technologic accuracy. It is

undoubtedly an embodiment that scientific thinking acts on clothing culture.

Scientific concept made western clothing to realize the transition from beeline structure to curve structure as early as the 13th century; an unattached design form that sleeves and collar separate from main body came into being. After the Renaissance, western clothing structure entered the stage of standardization by mathematical reasoning. In 1589, Spain published the world's first book recoding cartography of clothing structure and nesting chart; In 1798, Hashemite Morgan, a French mathematician, published *Drawing Geometry* to provide a mathematic basis for plane mapping, established the conception of standardization and basic paper model.

3. Concluding remarks

By analyzing the developments of clothing structure modeling and the reasons of the development, we have known the westerners' attitude towards human body which is different from easterners and the difference of the east-west clothing structure caused by scientific attitude. Thus the different clothing civilization between east and west formed, which created the colorful clothing culture.

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