Space Analysis of Dance Action Using Props Centered on the Relationship of "Figure-Ground"

Yi-xun ZHONG\textsuperscript{1}, Dao REN\textsuperscript{1}, Lei JIN\textsuperscript{1}, Ping HE\textsuperscript{1} and Hong-long NING\textsuperscript{1, a, *}

\textsuperscript{1} China South China University of Technology, Guangzhou City, Guangdong Province, China
\textsuperscript{a} ninghl@scut.edu.cn
\textsuperscript{*Corresponding author}

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Abstract. In this paper, the combination of dancer body and props are investigated by the Gestalt theory. To well understand the relationship between "Figure" and "Ground", it can help the dancer to image the motion trajectory of props in the action space. Furthermore, it can guide the consciousness of dancers and viewers in their state of mind and spiritual world. This method show a new approach to realize the virtual choreographer’s idea.

Introduction

As we know, it is very important for the combination of dancer body and props how to deal with the transformation of lines, layers and dimensions, especially to the space relationship between them. For dance, "Watching" is an essential part of communication, and it also is a consciousness to activity by the application of Gestalt-Reception-Aesthetics theory. The visual object is an action of stimulating the organism or causing the nervous system \cite{1-2}, all the consciousness of viewers related by occupation and change are guided by the visual senses, and psychological level of understanding and reprocessing.

Dancers and viewers in the process of creation and performance, will be active or unconscious to mobilize their perception, feel reflections of the inner state and the spiritual world. In this paper, the action space of dancers are analyzed not only by the props space, action body forms and usage characteristics, but also by the construction based on Gestalt theory. We introduce a new perspective to understand the movement trajectory composition of props in action space by the relationship of "Figure-Ground".

Relationship between Action Space and Props Usage

Due to the different props used in the space for dance movements, there are two kinds of spaces: "Real" and "Virtual". "Real" space mainly refers to the dancers touch the actual material props through their body, and the direction, lines, trajectories, movement planes and other factors will constitute the action space during the process. The methods can increase the wide variety of action space: Mainly through the vertical, horizontal, oblique and other directions, surfaces, dimensions, extend the limb lines props (Sleeves, Silk, Crown and Clothing), or musical instrument props (Flute, Xiao and Pipa), or weapon props (Sticks, Swords and Knives), or other daily props (Fans, Towels and so on) to achieve.

"Virtual" space mainly refers to the dancers action space is presented by the props, but the dancers do not directly touch the props. The body's movement does not directly determine the formation of space. This kind of action space mainly focus on the human action through the stage lighting projected on the curtain, or smoke and other means of the stage so that the original reality of the human body into space for light and shade.
Relationship between Figure and Ground in Gestalt

In Gestalt theory, the completeness is very important, the system should have a "Gestalt" character. Gestalt itself can also mean a separate whole, so it does not deny the existence of the overall relationship between the elements of the separation. As we know, the human vision is an aggressive process, but it just can receive a little of stimuli or information limited by the extremely short perception time. Therefore, the viewers will select the some specific targets to be sensed, it means a "high degree of selectivity"; the viewers tend to select "things that change in the environment" [1], leaving only a vague impression of other things. In this option, the visual object is divided into the concept of "Figure" and "Ground" to represent the visual space, so the relationship between "Figure" and "Ground" actually means the relationship between a closed pattern and another homogeneous and non-closed background. It can also be understood as the relationship between the part and the whole. While the viewers are viewing the object, some of the objects are highlighted as "Figure" while others are retreated to the "Ground"; and the viewers are in the undifferentiated background (for example: "the object that is not peeped in the viewport" ) to see the image. In addition, the viewers continually look at the stimuli in the environment of the subject, and depending on the conditions, the "Figure" and the "Ground" that become the target of perception may change rather than be absolute.

Relationship between Figure and Ground in Props Action Space

When the movement of dancer occupies different space, its shape also presents a different space. The props make the entire composition of the action space appears to be multiple after them joining the action. The presentation of dance movement in action space depends on the time sequence, and the time to action space mainly embody in the trajectory of movement. As a whole, the dancer lines and limbs noumenally trajectory and the props object trajectory can be grasped by time and space together. However, due to the two kinds of time-consuming movement trajectories, props and body techniques are naturally transformed to stimulate visual perception so as to enhance the expressiveness of movement. Through the viewer's visual perception of positive understanding of choice, showing mutual response, the conversion of the "Figure-Ground" relationship. Therefore, the dancers and props what is "Figure", what is "Ground", especially in the static and dynamic state, the level of spatial depth, the direction of contrast, area occupancy and other different states, the relations are changed continuously.

Relationship of "Figure" and "Ground" in static-dynamic state

As far as the static-dynamic state, the viewers are easily to capture the factors of continually holding posture or rapid movement. Thus, it shows a "Figure" and "Ground" contrast under the limb movement and props trajectory complex static-dynamic state surrounding. In "Taking tassel" and "Pushing tassel" of "Long-Tasseled Sword Dance" action (Fig.1), the relationship between limbs and props trajectory is front-back in time sequence, and static-dynamic in space state[3]. They complement each other, a stretch long and unbroken continuity sense. In "Checking tassel" action, the trajectory of props and movement are the similar, the dancers sharply change the motion direction of sward tassel by the arms, legs or other body parts, and sward tassel comes to a stand-still. The opposite direction of movement is impressive for all viewers. During these changes between static and dynamic state, the dancer body is more likely to form an "undifferentiated and closed" ground due to its stationary state of motion, while the sword tassel forms a "Figure". Viewers experience the movement of the dancer which contains unique ingenuity, and feel the meaning of sophistication.
Relationship of "Figure" and "Ground" in spatial-level change

As far as the spatial depth level is concerned, the viewers are more likely to catch the object at the front position than the object at the rear position. The relationship of "figure" and "ground" is often staggered, because the relationship of dancer limbs movements and props in the space are also staggered between the front and rear. In the props action of towels and fans, such as pulsing a single arm turn the back of the arm flower or close the fan, holding the fan while walking back to the depths of the body trajectory, the props often have been maintained in the depth of space by the front position becomes the end point of motion or retention of the entire motion path. Thus, the towels and fans are considered to be the "Figure" in the overall layout of the movement, and the undifferentiated limbs are considered to be the "Ground", all of them express the infinity meaning. Once the depth of the relationship between the front and rear changes, the arms which holds the fans or towels often occupy the rear space of dancer body in the forward process of limbs. In this case, the limbs are considered to be the "Figure", the towels and fans are considered to be the "Ground", and it will emphasis the situation and strength of body movements. For example, Figure 2 show the different motion trajectories of the two dancers because of the light distance difference in the virtual space [4]. The vertical depth of the light and shadow in virtual space projected on the curtain shows the change more clearly, and the interlacing of the "Figure-Ground" relationship more obviously, as a feather floating in the air.
Relationship of "Figure" and "Ground" in direction changes

In terms of direction, especially in the case of the track or position, the shape or specification of props are protruded if the viewers are in a particular motion direction between prop and dancer (such as the length of the props being prominent or the props being separated from limbs momentarily). From Fig.3, it shows the scene of long-sleeved props [5]. The dancer bends her right knee, twists the waist and lifts her left leg at the moment, at the same time exerting force by elbow wrist, from the state of the grasping two sleeves into the stretching one sleeve. The original hidden water sleeves shows a long form and motion curve in an instant, the action space also suddenly shows a sense of the extension and continuation, it not only changes the state of body action space, but also forms a "closed" space as a reference. After the sleeves retrieved by dancer, the state of whole space is back to the beginning. In the process of the stretching sleeves, the sleeves become a "Figure", while the dancer is undifferentiated "Ground". In the process of the retrieving sleeves, the relationship of "Figure-Ground" has not changed. After the process of the grasping sleeves, the dancer is easily converted to a "Figure", and the sleeves become "Ground". A complete journey of the reciprocating motion in the overall layout of the action, due to the "Figure" highlights, and give far-reaching endless meaning. In the "High Thrown Drums" action of "Money Encouraged" dance, the drum trajectory exceeds the height of the dancer body motion space instantly; then the drum is caught by hand or knees of dancer, and its trajectory returns dancers body motion space range. The viewers also transform the "Figure" and the "Ground" relationship in the reciprocation of the motion track, and realize the visual rhythm in the exquisite movement of the prop and the body [5].

![Figure 3. The long sleeve dance [5].](image)

Relationship of "Figure" and "Ground" in volume state

In terms of area and volume, it is more likely to be the focus of the viewer's perception for props which occupy a larger space or volume. Contrast to the body of dancer, the large props (elephant foot drum, wood shelve in traditional peacock dance and so on) are easily seen as a "closed" border line for dancers. In the process of watching the dancing, viewers form their own perceptions based on the action relationship among dancers and props, and they are more concerned with the "figure" of props than the "ground" of dancers. In the "virtual" space, the relationship between "figure" and "ground" can be described as distinct and profound. In the male version of "Swan Lake", the imprisoned prince is treated by the doctor, the shadow of doctors and attendants is projected on the backdrop, the normal proportion of the body is distorted an unlimited expansion of the virtual shadow, it can help viewers to understand the oppressive and claustrophobic sense of prince. The viewers, guided by a strong visual
impression, can chew deeper into the image of the symbol, making it easier for the figure on the screen to act as a "Figure" while the actual performing dancers serve as the uncivilized "Ground."

**Summary**

In this paper, the dance relationships of "Figure-Ground" are discussed with Gestalt theory. We can use the basic principle to analysis the different dances, it not only can help the viewers do the view switching, but also can adjust the different usages of dancer and props in stage.

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**References**


