

Planar Design based on Modern Sports Scene

Shu Li

Hunan City University, Yiyang, 413000, China

Abstract: Aiming at the design defects of modern sports scenes, along with the emergence and rapid development of new technologies, the graphic design of sports scenes is proposed. By using different styles and different graphic design techniques of Olympic venues in different periods, the experiment of graphic design is given. The results show that the sports venues designed by graphic design are larger and more three-dimensional.

Keywords: Sports; Graphic Design; 3D; 3D Animation

1. Introduction

At the beginning of the 20th century, public signs and trademarks have gradually appeared in people's lives. Public utilities and enterprises have begun to pay attention to the external image recognition design, and gradually design their own logos. Coubertin, from an aristocratic family, has a good educational background and high cultural accomplishment, which prompts him to have excellent insight and judgment on future trends. The lessons of the Paris Olympic Games and the St. Louis Olympic Games make the IOC gradually realize the importance of a unique Olympic logo that distinguishes itself from other enterprises and organizations. In 1913, he proposed the design of the Olympic logo. At the Olympic plenary meeting held in Paris in 1914 to celebrate the 20th anniversary of the revival of the Olympic Games, Coubertin explained his logo design idea: red, yellow, blue, green and black five rings, symbolizing the Olympic Movement and the five continents participating in the Olympic Movement, the sixth color is white - the background color of the flag, which means that all countries without exception can be under their own flag. Participate in the competition, and the five interlocking rings represent the people of the world to unite under the banner of the Olympic Games and strive for human progress [1-3].

From the 1990s to the 1950s, graphic design experienced an important period from the arts and crafts movement, the new art movement, the decorative art movement to the modernist movement, which was a period of upsurge and downpour of change [4-5]. The graphic design of the Olympic Games shows various features, mainly through the Victorian decorative style, the natural plant pattern decorative style in the New Art Movement, the poster design with the decorative style and the emblem design with the beginning of modernist design. Design motivation has been changing, from

1896 to 1908 can be said to be the embryonic period of Olympic graphic design, when graphic design is mainly used to publicize the World Expo, people have not yet realized the important role of graphic design for the Olympic Games.

With the development of three-dimensional reconstruction technology, two-dimensional animation scene has been difficult to meet people's visual needs and subjective feelings [1_2]. At present, most of the 3D animation scene reconstruction methods acquire part of the information of the surface of the animation scene, and describe the reconstructed animation scene according to the three-dimensional shape and position in the observer-centered coordinate system. It is difficult to present the depth information of the animation scene. In this case, how to extract all the information behind the animation scene accurately and effectively to complete the graphic design of 3D animation scene has become a major problem in the field of computer vision research, which has attracted the attention of experts and scholars in this field.

2. Motion Scene in Graphic Design

In the 1960s and 1970s, internationalism developed to the extreme. The rational, indifferent and monotonous form dominated the world. Few powerful forces could erase the differences of national cultures and form a unified style in the global scope. Tom Wolfe, an American writer, said angrily in his book *From Bauhaus to Our House* that "Miss Vandro's principle of 'less, more' reductionism has changed the skyline of two-thirds of the world's metropolitan areas." The internationalism style was developed from the modernist movement which originated in Europe before the war, and they have a formal and continuous relationship. The principle of function first, form second, advocated by the modernist movement has been

rebelled, and the principle of "less, more" has become a form pursuit and overwhelmed the principle of function first because of the Democratic design idea of serving the masses. The extinction of individuality and national differences by internationalism style and the lack of human monotonous form have aroused the reflection of the design circles, and a number of pioneers against internationalism style have emerged. These pioneers are the earliest promoters of post-modernism. Pop art, which peaked in the United States in the 1960s, began to rebel against internationalism. After the 1970s, the post-modernist design movement came onto the design stage. Ideologically, the Post-modernism of design is an ornamental development of modernism and internationalism. It mainly opposes Miss Vandro's design principle of "less is more", and advocates the use of decoration in design to obtain rich visual effects, so as to meet psychological needs, not only the pursuit of function. Postmodernist design uses a large number of historical decorative styles abandoned by modernism, and adopts compromise treatment to break the long-term monopoly of modernist and internationalist styles. "Postmodernism uses a lot of classical decoration as its motive, so there are obvious symbols to pursue. Compared with the mixed culture of postmodernism, it should be said that it is very clear and clear. Postmodernist graphic design, in fact, is an improvement of modernism, and the main method is to add decorative and historical content to the design, making it a component of graphic design. Note 10 Postmodernist design affects graphic design.

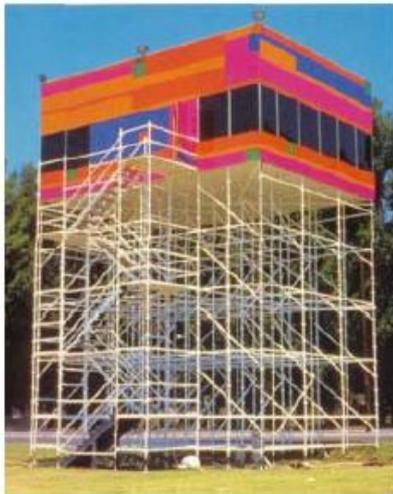


Figure 1. Prefabricated components for the 23rd modern olympic games in 1984

Switzerland's "New Wave Graphic Design Movement", "Ritiro" nostalgic style movement in European and American countries, Italy's "Memphis Group", "San Francisco's Graphic Design Movement" and new schools of computer graphics design have emerged.

Since the 1980s, computer graphics technology has been introduced into graphic design in the era of computer and digital image, and has undergone tremendous changes. Graphic design creation space and graphical forms have been greatly expanded, people began to use computer-aided design to efficiently complete the design, publishing, printing work. The 1984 Los Angeles Olympics first used computer graphics technology to design emblems, posters and other items. As shown in Figure 1.

3. Plane Design of 3D Animation Scene Based on Modern Sports

Assuming that (u, v) represents the sub-pixel coordinates of point P in the animated scene image, (X, Y, Z) represents the three-dimensional coordinates of corresponding points in the world coordinate system of the animated scene image, the normalized three-dimensional coordinates x, y, z in the camera coordinate system under the radial and tangential distortion of the animated scene image can be calculated by using the sub-pixel coordinates in the animated scene image. When a camera captures the depth image of an animated scene, it usually produces some noise due to the influence of the device itself or the measuring environment, which has a great negative impact on the later calculation. Therefore, first of all, it needs to denoise the original depth animated scene image; s_x, s_y, s_z represents the first dimension of the three-dimensional space vector s of the animated scene image; s_x, s_y, s_z represents animation; The nearest neighbor of three-dimensional space vector s of scene image. By solving equation (11), the point cloud can be obtained after image data reduction of animation scene, and based on this, the graphic design of 3D animation scene can be completed.

4. Analysis of Experimental Results

In order to verify the accuracy of the experiment, five groups of animated scene image sequences captured by multi-angle CCD camera are used. The resolution of the animated scene image is 380 x 600 dpi, and the frame rate is 20 f/s. The experimental results of 3D animation scene plane design based on improved method and binocular vision method are described by Windows platform. The improved method and binocular vision method are used to carry out the graphic design experiment of 3D animation scene. The point cloud computing time (ms) of 3D animation scene under the two methods is compared. The comparison results are shown in Figure 1. Through comparative analysis, it can be seen that the point cloud computing time of 3D animation scene using improved method is shorter than that of binocular vision method. This is mainly because in the process of 3D animation scene graphic design using virtual reality technology, grid nodes representing

depth information of animation scene are first established in space, and according to the relationship between feature points of animation scene image and point cloud of 3D animation scene. To the three-dimensional feature points of the animated scene image. ICP method is used to complete the accurate registration of point clouds in animated scene images, and the three-dimensional point clouds of animated scene images are obtained, which makes the point cloud computing time of 3D animated scene graphic design using improved method shorter.

5. Concluding Remarks

The relationship between graphic design and culture is self-evident. Graphic design has been endowed with the function of reflecting social and cultural phenomena, serving specific service objects and communicating information culture since it was separated from the mother body of painting art. Opening up the history of graphic design, we can see that it reflects the social and cultural reality as the art of painting. The Victorian graphic design embodies the aesthetic orientation of the aristocratic class. The tedious decoration and plant decorative patterns from nature are full of book cover design, poster design, packaging design and font design. With the advent of industrial revolution, the great impact on human life caused graphic design circles began to reflect on the aesthetic orientation of traditional art and the combination of new technology in the mechanized era during the period of Arts and crafts movement.

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