

Research on the Visual Experience based on the Application of Concept Design in Science Fiction Film Art

Xing Wu

School of Arts, CITI University, Ulaanbaatar, 999097-15141, Mongolia

2596614216@qq.com

Abstract

Film art is known as a dream-making machine, and the emergence of science fiction films has opened the door to a new century, presenting us with countless gorgeous images of film art. With the support of science and technology, people's imagination has been given more space to play, and the application of concept design has played an effective role in the production of science fiction films, providing audiences with a quality visual experience.

Keywords

Science Fiction Film; Concept Design; Film Art; Visual Experience; Research and Analysis.

1. Introduction

With the continuous improvement of living standards, people put forward higher requirements for spiritual enjoyment. Among them, the biggest difference between science fiction movies and other types of movies is that the visual experience of science fiction movies leads people to explore endless universes and lifestyles, and can involve visual images and unimaginable facts that do not exist in life, thus making the audience resonate emotionally. Therefore, this paper conducts an in-depth study on the visual experience of applying concept design in science fiction film art.

2. Conceptual Design in Science Fiction Films

The purpose of creating film and television works is to provide audiences with quality visual experiences, among which science fiction films pay more attention to novel and special designs in the production process. In order to better meet the production goals of science fiction films, a lot of planning and design is needed in the early stage, the most important point is the conception of the work, that is, the concept design. Foreign science fiction films pay much attention to the application of concept design in the production process. At the early stage of science fiction film production, a large number of concept design plans are often needed to enrich the story, characters and other important contents of the work. For example, "The Matrix", which shows human wonders related to the concept of future space-time and draws virtual worlds from figures and programs, is a movie that provokes philosophical thinking through subtle descriptions of existence and nothingness. And the application of the concept of conceptual design has a long history in the West. Traces of conceptual design can be found in such film and television works as "The Ideal State" and "Utopia", which have provided an important fundamental role for the flourishing of science fiction films.

3. Research on the Visual Experience of 2D Digital Drawing Application in Science Fiction Movie Concept Design

With the continuous development of various advanced technologies, the main expression form of concept design in science fiction films has gradually changed from traditional painting to a new form with digital painting as the main creative medium. As a visual genre, the concept design of film and television works usually needs to use different reference methods in order to provide reference for creation, and with the expenditure of Internet technology, digital painting technology has more flexibility and freedom in the process of visual experience exploration.

3.1. Color Scheme

Science fiction films in the process of conceptual design generally have the characteristics of low saturation, obvious color changes and relatively weak hot and cold pairing. Vision is the primary way for people to obtain external information and is one of the important senses of the human body. In order to clearly define structures and other contour shapes, color recognition is even more important, and human evolution has left behind the instinct to judge color information. For example, red represents danger, green represents vitality and other basic information. There are two main reasons for the frequent use of low saturation and poor color contrast in the conceptual design of science fiction films: one, it is based on physiological visual considerations. Although strong color contrast can create a strong visual effect for the audience, but as people's demand for more and more material, display devices are further upgraded and improved on the original basis, and the screen size is gradually enlarged. Players focus their eyes on the screen for a long time, if the use of strong contrast color setting method for a long time to watch the audience in terms of physiological discomfort will produce strong. Secondly, this color setting method is more in line with the scene as a performance space "identity", can give the main performance of the content of a larger display space, in order to present the color to the overall picture brought to life.

3.2. Rhythm Control

Rhythm control in science fiction films is a relatively abstract concept, but we can find the rules in many works, and the works of conceptual artists generally have four attributes of "pluralism, multi-dimensionality, multi-facetedness and unity".

Diversity is the rhythm of all the elements expressed in the picture, which can be the diversity of material types or the diversity of different forms of the unified essence of a single material. This design principle allows the picture to break through on the basis of reality. The conceptual design is an extension of reality, a bold speculation of the future based on the reality of the material world, yet every major element must be studied in the process of creating the work.

Multi-dimensionality is mainly reflected in the rhythm control of two-dimensional plane elements and the rhythm design of Three-dimensional image space. The design of a plane in this picture, for example, the size and position distribution of the texture of pits and pits on one face of a stone, the sense of shades accounted for by the lighting design, and the overall view from near to far is the way of dense, sparse, dense and sparse cross changes, which makes the performance of horizontal space with a stronger sense of verticality.

Multifaceted is mainly reflected in the display of a single object and several major objects at different angles, in drawing and other forms of painting an object affected by light from the overall perspective have three sides of black, white and gray, namely, the main affected by light, secondary affected by light and not affected by light, the performance of a single object will also be based on this objective criteria to represent the Three-dimensional characteristics of the object.

Finally, the principle of unity. No matter how the single performance, the final purpose and result is presented by the whole picture, hue, environment, dimension, space, elements, etc. need to be harmonious and unified in this performance platform to provide performance space for the main performance content.

3.3. The Use of Repetitive Elements

In the conceptual design of science fiction films, the use of repetitive elements mainly refers to the phenomenon of movement of the same material in different time and space, and plays the effect of shaping the state of space. The use of the sequential arrangement of the same elements guides the visual obedience to its sequential motion trajectory to the expected location, and these mutually repeating elements often create a strong horizontal and vertical spatial effect in the spatial environment, creating a solemn and dignified environmental atmosphere within. Some concept designs will also add theatricality, but in general, in order to express the dynamic visual experience, the virtual effect of level motion, motion blur effect, motion afterimage effect, etc., may be used to replicate and weaken the existence of the previous cycle in the motion trajectory in order to achieve the effect of motion, so that the action content is displayed in static mode. The overlap effect also has the meaning of spatial reinforcement, that is, the overlap element is set on the pillar part of the motion scene space to support the motion effect of the global spatial framework. When the space in the scene is not simply a closed space, a medium is needed for the spatial connection function among the two kinds of parallel or interlaced spaces. On the one hand, it can reconnect the seemingly closed space, on the other hand, it can also carry some functions, and at this time the relevance of repetitive elements in the metaphorical lyrical aesthetic value can be further strengthened.

4. Science Fiction Film Concept Design in Three-dimensional Auxiliary Application of Visual Experience Research

4.1. Three-dimensional Auxiliary Worldview Setting

The worldview of science fiction film is narrowly defined, and the design of the worldview will be created on the basis of the text and express the worldview of a work with one or several concept pictures. The worldview of science fiction is an extension of the modern world, i.e., a vision of the future world created based on the problems that arise in the real-life world and its way of thinking. 3D software is used as the basic modeling, lighting, rendering and other assistance, and then the main way to draw in the software. Usually, we first draw a black-and-white draft of about four versions in the software, and then select suitable graphics and structures as the base sample, comprehensively choose to capture those infectious atmosphere or elements, and further analyze the spatial layout of buildings, objects, etc. on this basis to do the foundation for 3D modeling. In this chapter, we focus on the aesthetics of the layout of the picture, i.e. the composition, the rhythm of the spatial blocks, although there will be small modifications in the subsequent production process, but generally to ensure that within this framework to avoid the destruction of the overall visual aesthetics when dealing with details, compared to the subsequent creation of this link is more emotional and more test the creator's own artistic and aesthetic base. The sense of space and lighting in this part needs to have a general explanation, while grasping the overall picture while simply explain the shape of small and medium-sized objects in the picture, do not consider the details too much as the picture goes deeper, for some functional areas of the division in the sketch to ensure that the mind has a number, the pen has a live, the object shape a variety of rhythmic changes or angular or circular structure, in science fiction scenes generally less ambiguous rounded In addition to the special structure settings, we need to try to explain the sturdy architecture and object structure

in the sketch screen, and we can also use some texture brushes in the drawing process to make the content of the screen look relatively rich.

4.2. Basic Model and Atmosphere Establishment

In the software using independent modeling or can call the model library of the way to first establish a model of the main building, can be a rough shape without additional objects, some designers will only establish a rectangular body as a landmark building as a yardstick, establish a camera on the main building established perspective, in the camera's perspective of the rest of the building objects should be in what position, height, size, shape, shading area, etc. The most important thing to pay attention to in this part of the creation is the size ratio, to minimize the risk of repeated adjustments in the subsequent production, and to avoid wasting time by reworking to the greatest extent possible. After the general model is established, in the camera view to see the location of the light, you can choose the sky light, floodlight, spotlight and other large and small light sources with each other, a large range of light for the overall space of the main light source to explain the environment, set the atmosphere, shape the volume of space and other roles while a small range of light can play a role in enhancing the atmosphere, adjusting the light and shadow, adding details. Many conceptual artists will choose side light or backlight when doing specific projects or doing works, relatively speaking, side light is chosen more, the angle formed by the side light and the object will be shaded and produce a large contrast between light and dark in an object plane in two ranges, which can outline the outer contour of the object, more convenient in the processing between the real and the imaginary also easy to pull apart the front and back space, such a strong contrast produced by the huge visual impact and For example, the display of the deserted ground building in "The Wandering Earth" (as shown in Figure 1). After the modeling and lighting work is done, the general atmosphere and architectural space has been established clearly, and if no material texture is added, a single frame photo of the camera view can be drawn directly and imported into the software for drawing, which brings convenience for subsequent design processing.



Figure 1. "The Wandering Earth" stills

4.3. 3D Image and Digital Painting Combination

With the background of 3D rendering system, according to the three ways of digital drawing, the main part with a wider space is drawn first, then the general composition of the building is drawn, followed by the adjustment and cutting of the peripheral graphics of the building. To ensure high shading, the building graphics can be subdivided into upper atmospheric layers and depicted step by step from bottom to bottom, then priority is given to the important elements representing the structure and volume of the object, and the decorative elements are added to the next part for efficiency. Once a brief description of the following content has been

made, aspects of the building's interior can be depicted directly from the main object or the golden node. Black structures can also be painted with white, black or black brushes, followed by progressive illumination of architectural details. In this step, layer properties or brush properties such as whole overlay, color tones, and softness can also be used. In the conceptual design of science fiction movies, an image processing, generally called mapping, is often used to achieve a more realistic effect. Cropping, distorting, adjusting or tweaking the layer properties of the image material to get the consistency, shape or part of the desired content can be used to integrate a large amount of detail. However, care should be taken that the content drawn by the brush should not be too coarse compared to the parts drawn, and that mapped detail can be reduced by adjusting the contrast or diffusing through color rings so that the parts are drawn with comparable detail. After completing the drawing of the main content and details and spacing, it is necessary to add details to the main body. In addition to the necessary content, add some subjective and more reasonable objects. For example, posters, light boxes, banners and other symbolic contents can be added to the drawing of the city block, which in turn adds vitality to the overall visual effect.

5. Research on the Visual Experience of Full 3D Modeling Application in Science Fiction Movie Concept Design

In the process of science fiction movie concept design, the application of full 3D modeling technology can provide customers with a more realistic visual experience effect, but the cutting-edge stereotype is not easy to break. To ensure creative efficiency, it is temporarily impossible to model each element independently when building 3D scenes, and creating innovative content with the help of model libraries will have higher hardware requirements. However, it is undeniable that the full 3D modeling technology has unprecedented advantages in the pursuit of production accuracy in the process of creating the science fiction scene concept map.

5.1. Three-dimensional Modeling Scene Node Coordinates of the Calculation

In the Three-dimensional software production grid is the space constituted by the face, edge, vertex, which is often referred to as the point, line, surface, and Three-dimensional software grid space is composed of countless points and vectors of x, y, z coordinate system, that is, the human eye to see all the Three-dimensional objects, here can be achieved by establishing the interconnection between the point, line, surface. In 3D modeling there are several preset basic shapes and geometry, rectangular, cone, ball cylinder and other basic geometry can be directly built, on the basis of the image editor and other methods to deformation, line, surface, etc. to increase or modify the operation to get the required basic object shape, in 3D modeling can also be strictly according to the actual proportion of the planned to complete the basic object shaping work In 3D modeling, the basic objects can be shaped strictly according to the planned actual scale, and the grid distance can continuously provide detailed data for the construction of the scale objects.

5.2. World View Model Scale Control and Mapping

By dealing with detailed coordinate data, the relationship between different elements can be better controlled and can be achieved by equipment ranging from a few millimeters to hundreds of meters. If you want the world view in science fiction movies to be more rigorous in creating scale, you should choose "white model" when creating the model, and then add different materials for different elements of the object by adjusting the parameters in the material editor with the required material resources. If the object is a garment, add cotton material and select the color; if the object is a steel, find the most suitable texture, add metal material, and adjust parameters such as diffuse reflection. After perfecting the material on the model, all that remains to be done is to perfect the pattern and graphics. In the past few years

since the development of 3D software, many users, programmers and designers have redrawn patterns for different materials, and then sold or shared on the Internet, forums and other network platforms, which invariably provides a rich library of texture resources for creators to better support the creative effect of science fiction films.

5.3. The Integration of Lighting Effects under the Control of Details

The actual operation of lighting effects is to spend a certain amount of time to complete, to achieve dust, fog, clouds, rain and other atmospheric effects, the most important work is to play light, in the "The Wandering Earth" the film on the clouds and fog and other special effects manufacturing process is very focused on the details, presenting the audience with a very shocking sense of reality (shown in Figure 2).



Figure 2. "The Wandering Earth" stills

Light is the objective existence of nature, in the absence of light, the human eye can see the image of the material, except for the sunlight in the air or the light of the material, the reflection of other materials is rarely in a particular situation, because the surface of the secondary structure of the material are very smooth, will produce a strong reflection. If the environment is set on the earth can be arranged according to the light sources seen every day, and through the camera view to adjust the appropriate light source angle, so many designers are accustomed to setting the environment in the dark as an artificial light source, including fire candles, flashlight illumination, etc., floor lamps, light strips, etc.. The effect of doing so can make the stronger contrast in the picture is not entirely concentrated in the special account of the area here, but only through further enrichment of the details to produce good film and television effects.

6. Conclusion

To sum up, in recent years, the domestic science fiction industry has ushered in a brand new spring, which also enables Chinese people to see a new hope for developing the domestic science fiction industry and a new breakthrough in cultivating the confidence of Chinese science fiction humanities. Designers must have a full understanding of the conceptual design stage, rather than over-emphasizing or imitating the artistic styles of foreign masters. With the gradual maturity of film and television animation and its post-production industry, it is believed that more people will devote themselves to the concept design stage of film, which will give people great shock and amazement in this territory of fantasy film.

References

- [1] Guarding Anthropocentrism - Posthuman Imagination in Hollywood Science Fiction Films [J]. Jia Binwu. Cultural Studies. 2018(02).
- [2] The Construction and Communication of National Image in Domestic Films in the Cross-Cultural Communication Perspective --Taking the Domestic Science Fiction Film "The Wandering Earth" as an Example [J]. Zhao Ruixu. Audiovisual. 2019(10).
- [3] The use of film and television special effects in the movie "The Wandering Earth" [J]. Liu Fei. Communication and copyright.2019(09).
- [4] Nostalgia from the future - the logic of making Chinese visual effects landscape of The Wandering Earth [J]. Zhou Yanwei. Journal of Beijing Film Academy.2019(09).
- [5] Aesthetic Considerations of Spatial Displacement Experience in Film [J]. Hu Yihao. Chinese and foreign culture and literature. 2020(01).