Simulation Analysis of Aesthetic Effects of Context in Film and Television Animation Based on Unity3D

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Film and television animation generally belongs to the art form of film and television category, but it also contains a large number of characteristics of art visual communication. To explore the research scope of visual communication of film and television animation aesthetics, we may as well start from the perspective of methodology. If the methodology of aesthetics is also applicable to the study of film and television animation aesthetics, we can choose the most commonly used methodology in literature and art and aesthetics to analyze the aesthetic application of film and television animation works from different angles, such as "symbolic research method", "psychoanalysis method", etc., so as to find the key to the existence of the aesthetic significance of film and television animation works.

INTRODUCTION

Through the study of the history of animation development, it is found that the beginning of animation film is different from the way of film creation. Animation is a pure fictional world. It uses a single frame by frame shooting method to make up nonexistent pictures. Although it is clear that these images are fictional, people are willing to believe in the authenticity of the animation world. With the development of technology, people's pursuit of animation character credibility is higher and higher [1]. This credibility is not only the pursuit of character modeling, but also the pursuit of the credibility of the whole virtual world in animated films. The more credible a work is, the more popular it is. The credibility of this kind of animated film does not mean to be similar to the real world. This credibility can surpass the reality, or even far away from the real world, but the overall values and world structure can fit in with the real world firmly. By analyzing the characters in different animation works, this paper summarizes the creative ideas of animation characters. The creation of animation is a process from scratch, and the creation of animation characters is also a process from scratch [2]. The animation character is not completed by the performance of the actors, but through the animator's brush to directly transform the text into a specific image that can be moved. Combine the art elements without life to create a living thing. How to increase the credibility of fictional characters is the main content of this paper. It should be said that film and television animation generally belongs to the art form of film and television category, but also contains a large number of characteristics of art visual communication. Therefore, to explore the research scope of visual communication of film and television animation aesthetics, we might as well start from the perspective of methodology. Methodology is the way we know the world [3]. Aesthetics is a science that studies the aesthetic categories of beauty, ugliness and sublimity, human aesthetic consciousness, aesthetic experience, and the creation, development and law of beauty from the aesthetic relationship between human beings and reality, with art as the main object. Aesthetics

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is a subject that focuses on the study of the essence and significance of beauty. Therefore, the methodology of aesthetics should also be applied to the study of film and television animation aesthetics. In this paper, the author tries to select two most commonly used "symbolic analysis" and "psychoanalysis" methodology to analyze the aesthetic application of film and television animation works.

SIMULATION OF ARTISTIC CONCEPTION AESTHETIC EFFECT IN FILM AND TELEVISION ANIMATION

Artistic Conception Characteristics in Film and Television Animation

Nowadays, film and television animation scene has been widely used in real film shooting. The visual shock effect of the film makes the application of digital virtual technology in film creation recognized by the audience [4-7]. Through the digital virtual technology to simulate the natural vegetation, sky, mountains and other scenes of the outer planet, the real scene is shocking. This new thinking subverts the traditional real scene shooting in film making Digital virtual technology will be more and more widely used in film scene design. Digital virtual scene is not only applied to film scene production, but also has made remarkable achievements in other fields of science and technology. The use value of virtual scene involves all aspects of science and technology, and the technology will be more and more advanced. In terms of scene design of film and television animation, China's virtual scene is far away from European and American blockbusters [8]. According to the survey, China's computer virtual technology has reached the international level, but the application and film and television industry system is not perfect. We still need to pay close attention to the research and construction of film and television animation scene model library, and improve the production efficiency of film scene and the reuse of resources as the ultimate goal. Based on this, the production process of film and television animation is designed, as shown in the Figure 1.

Figure 1.
Design flow chart of film and television animation production
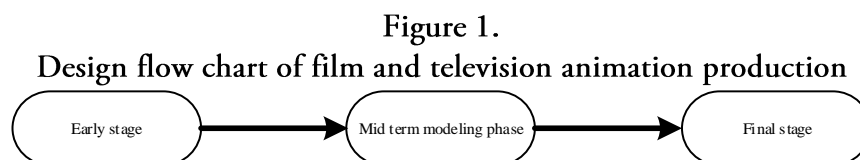
At present, there is not enough material library to support the development of film and television industry in China [9]. The national animation public material library, which is researched and built by the National Library of China, includes personas, biological world, indoor scenes, outdoor scenes, life props, industrial props, facial expressions, pictures and so on. However, the quality of works is uneven, and most of them are realistic models with weak artistry [10]. There are still some shortcomings when it is used in commercial film and television animation creation. The national animation public material library is to achieve the reuse of resources in a snowball way. Its operation mode is doomed that the models of the model library have no unified standard and cannot meet the requirements of commercial films [11]. The operation mode of film and television animation public material library is further studied as follows (Figure 2):

Figure 2.
Operation mode of film and television animation public material library
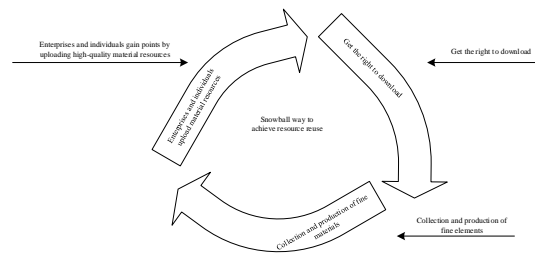
From the domestic market research, the existing large resource pool can be divided into two categories: resource pool with property rights and resource pool without clear property rights. Many people in the industry collect and integrate a large number of Chinese architectural models through various channels to form shared resources [12]. This kind of resource library generally has no clear ownership information. For example, "SketchUp master Chinese model library" contains the main Chinese architectural models, including classical and modern styles. Although it has Chinese style, it has sketch level model structure and low-quality rendering Display is far from the actual needs of film and television animation creation. As far as China's film and television animation industry is concerned, the scene resource management system is weak, which leads to low reuse rate, lack of standardization and uneven quality level of basic landscape materials in enterprises. In order to meet their own production needs, large-scale production enterprises such as universal digital, China Film Group and crystal stone have set up a technical specification system for material collection and arrangement in the internal production process [13]. Some enterprises and colleges have also tried to collect materials from the actual needs, but there are problems such as limited scale, poor external access, uneven service level and lack of unified standards. It is difficult to play a role outside enterprises and colleges. Therefore, it is an inevitable trend to study the relevant modeling methods, optimize the modeling process, and establish a virtual resource library application platform that meets the requirements of commercial film and television animation production.

Optimization of Artistic Conception Aesthetic Design Mode of Film and Television Animation

The concept of "film and television animation" is not limited to the scope of "film animation". It is not narrowly defined as a computer-generated cartoon. In a broad sense, it is understood as using computer animation technology to simulate the scene content of films, TV dramas and cartoons in the way of digital virtual production, including natural landscape (plants) and human landscape (Architecture), so that they can be integrated There are three animation forms [14]. Film and television animation production process optimization technology is an optimization technology produced by the combination of traditional film and television animation production and new technology. Fully drawing on the advanced production process and management experience, based on the optimized production mode, the process optimization of key parts is researched and developed; At the same time, it studies the management security technology and digital resource management system in the collaborative production of film and television animation, and builds the model library of role, expression, plant and scene related to film and television animation, so as to provide management security and media resource support for the establishment of film and television animation collaborative production platform [15]. The art style reflected in the details of film and television animation works is often not limited to one. This kind of mixed and mixed phenomenon of different painting styles in film and television animation is not only obviously reflected in the commercial animation of various countries, but also reflected in the film and television animation works which are close to art short films in production, such as "Peach Blossom

Land" which won international awards a few years ago [16]. As the world's leading real-time project developer and seller, the products developed by dexsoft games only focus on the visual effect of the model, but cannot meet the needs of commercial film and television animation in the vertex number and topology optimization of the model. Instead, they only focus on the development and construction of high-quality model library, games and real-time demonstration, which does not have strong adaptability and cannot match the current film and television animation development It should be adapted to the standard. The basic information is shown in the Table 1.

Table 1.
Basic information of exsoft games resource library

name	Basic information	advantage	shortcoming	copyright
Gnomon Hangar Pack	Sub era scenes, mechanical models, and maps (baking maps) matched with the models.	High resolution mapping optimization; multiple model level selection; common multiple formats	Visual effects are not customizable	Commercial copyright
Sci-Fi Storage	Game style scene library, including scene model files, maps, and lighting information	High resolution mapping optimization; multiple model level selection; common multiple formats	Visual effects are not customizable	Commercial copyright
Industrial Bundle	Industrial scene model library	Multi model level selection; general multi format model setting can be decoupled		Commercial copyright

The modular dungeonkit resource library produced by unity technology is a scene resource library specially developed for its Unity3d teaching and training platform game engine. Although it can achieve real-time interactive preview and rendering, it is difficult to combine with the practical application and demand of film and television animation due to the incompatibility of its model data and format. The basic information of modulardungeonkit resource library is shown in the Table 2.

Table 2.
### Basic information of Unity3d teaching and training platform scene Library

name	Basic information	advantage	shortcoming	copyright
Modular Dungeon KitModular Dungeon Kit	Modular dungeon kits is a game style scene suite developed by unity technology, including rich architectural structure and mapping information.	Good visual effect; the model can be configured	The model is simplified; the file format is not universal	Commercial copyright

The commonly used modeling tools are Unity3d teaching and training platform, Maya and other software. Unity3d teaching and training platform is widely used in the field of building models, and Maya is mainly used in the production of human objects. The virtual scene modeling technology based on Unity3d teaching and training platform has been very mature at home and abroad [17]. The basic methods of 3D modeling include: polygon modeling, spline modeling, patch modeling, poly modeling, subdivision modeling, composite modeling and so on. The diversity of modeling methods can provide a more optimized and efficient way, which provides a technical basis for building model creation of film and television animation. The visual process needs to be realized according to the user's characteristics. The user's appreciation of the background depends on the human visual characteristics [18]. The human eye line of sight moves faster in the horizontal direction than in the vertical direction, and is not easy to fatigue. Because most of the users' visual features move from left to right and from top to bottom, it is found that the top of the user's view area has a higher degree of attention than the bottom, and the left side is easier than the right side. Therefore, the

page design needs to follow the attention degree of the page background in the user's view area, and the results are shown in the Figure 3.

Figure 3.
The results of influencing factors of film and television animation aesthetic design
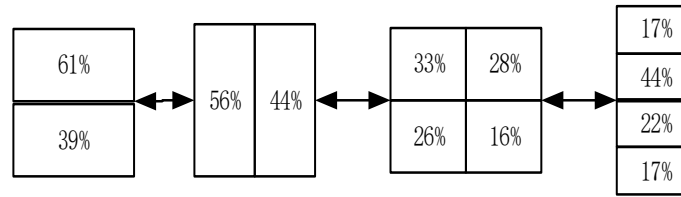
It can be seen from the figure that the top and middle top of the image are called the best view and the best place. Usually, the prominent data information of the interface design is placed in this position. In the image classification model of computational aesthetics, the data set is generally divided into training data and test data. Different evaluation methods are used for different data capacity. If the capacity is small, one method is often used. Otherwise, k-fold cross validation is used [19]. The predicted results and the experimental results are usually represented as true examples (TP), true counterexamples (TN), false positive examples (FP) and false counterexamples (FN), and can effectively evaluate the generalization performance of the classification model. The evaluation indexes include the following: precision, which represents the ratio of the number of samples correctly classified to the total number of samples. This index is suitable for two classification and multi classification problems. The precision rate, that is, the accuracy rate, indicates how many of the predicted positive samples are really positive samples, and is calculated as.

$$f_P = \frac{TP}{TP + FP} \quad (1)$$

Recall rate, that is, recall rate, indicates how many positive examples in the sample are predicted correctly, which is calculated as recall rate.

$$f_R = \frac{TP}{TP + FN} \quad (2)$$

For film and television animation, a relatively real space in line with the physical laws of the objective world is a necessary prerequisite for complex narrative, and the role of scientific modeling method is to enable film and television animation to use "painting" as a pseudo qualitative way to build a relatively real spatial relationship, so as to make complex narrative possible. For the art style of film and television animation, the reproduction of the plastic arts tradition has more inspiration in aesthetic thought than in art techniques [20,21].

Realization of Artistic Conception Aesthetic Effect Simulation of Film and Television Animation

Animation, like other works of art, not only embodies the creator's unique perspective and artistic expression of the world, but also embodies the unique spirit of the times at that time and local. The background of the times is the premise of all human creative activities including artistic creation. Artists can't choose the time when they were born, so they can't change the influence of the times and artistic traditions on their aesthetic and expressiveness. Similarly, under the influence of the environment of the times, the artistic style of video animation works can't be free from the influence of popular aesthetic orientation and fashion factors. Scene design is usually defined as the design of all static objects except character performance in the film. Scene is the core content of the whole film. Character performance cannot be separated from the setting off of the scene. With the progress of real-time rendering technology, virtual shooting technology, virtual reality synthesis technology and collaborative production technology, film and television animation production mode has changed greatly. The realization of film and television animation production process optimization technology can not only effectively improve the quality and efficiency of film and television

animation production, but also save and control the cost of film production, and achieve the reuse of resources. Through the research and development of key technologies of optimization mode, such as depth camera action recognition, facial expression recognition and animation character matching and scene resource reuse, the technology level of film and television animation production in China can be improved to a certain extent (Figure 4).

Figure 4.
The steps of artistic conception aesthetic simulation in film and television animation production
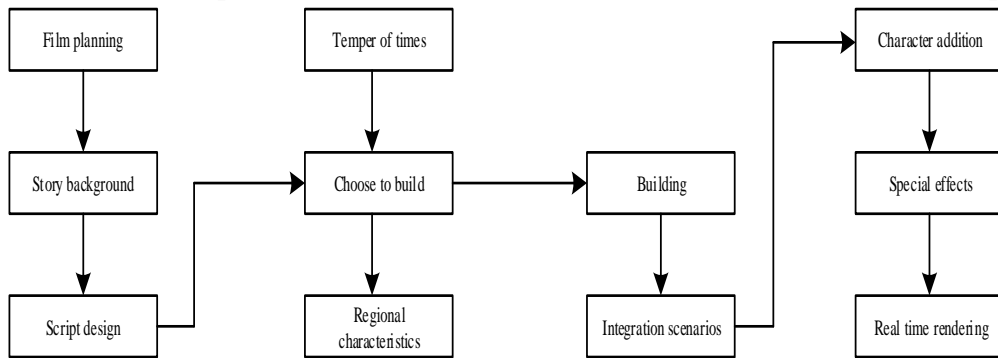
Domestic film and television animation companies basically have a safety management mechanism, but few companies manage the whole process of film and television animation production safety. At present, the film and television animation industry usually strengthens the process supervision by implementing safety plans and measures to ensure that the film content is effectively protected in the process of setting, shooting, post production, marketing and distribution. At present, the MPAA security plan formulated by the American Film Association is more representative in film and television production and security management planning. It covers the specifications, technologies and systems of hardware security infrastructure, network security settings, digital content transmission security, etc., and comprehensively covers the security management of all aspects of film and television animation production and distribution. By combining with the actual situation of film and television animation production in China, this paper studies the process management of film and television animation, provides a variety of film and television animation production process templates and means of digital resource security management and transmission, which can improve the confidentiality and security in the process of film and television animation production. The resource files of model base are divided into two categories: Reference Atlas and model engineering files. The reference atlas includes the photos of domestic major film and television base buildings, video capture files of movies and TV series, CAD engineering drawings, existing model reference materials and hand-painted drawings. As shown in the Figure 5.

Figure 5.
Content system of artistic conception aesthetic simulation in film and television animation production
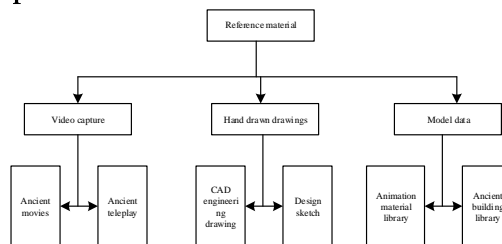
Engineering documents are independent intellect ual property rights. They are the collation and reference of reference materials. They are the

database of models based on the existing graphics and classification schemes, including adsmax model components, Photoshop mapping, parametric design and other different types of documents. There are many kinds of documents in the process of project implementation, so the documents can be classified and managed according to the format and purpose of the documents, and the unified version is used in the production process to strengthen the division and cooperation of various functions. The digital resource management system of film and television animation is used to manage reusable digital resources. It is the digital resource management module of the whole process film and television animation collaborative production platform, and is a necessary part of the platform. It is mainly composed of digital resource management system and related resource database. Digital resource management system is used for classification, retrieval, reuse and expansion of digital resources; resource library is used to store all kinds of digital resources, including image material, two-dimensional graphics material, audio material, video material, three-dimensional model material, etc. Among them, the image material and two-dimensional graphics material are easy to obtain, and there are many forms of material library based on manufacturers' research and construction or social network sharing to choose from. In the aspect of audio, there are mature sound effect libraries for commercial film and television animation production; in the aspect of model, there are also different manufacturers and domestic and foreign institutions for model library research and development.

SUGGESTIONS ON THE OPTIMIZATION OF ARTISTIC CONCEPTION AESTHETIC SIMULATION IN FILM AND TELEVISION ANIMATION PRODUCTION

In the case of art teaching standards maintained at a high level, the use of feasible means to stimulate students' creative desire, so that students have a strong willingness to learn art, is an effective way to promote the ability of art appreciation. Art works are not only the epitome of various social phenomena, but also the subjective expression of human social material and spiritual life. For students, opening the door of cognitive world through art works can not only effectively improve their artistic quality, but also maximize the influence of local art resources on the premise of maintaining a high level of art appreciation ability. Table 3 reflects all the basic elements and corresponding artistic value of local art resources.

Table 3.
Summary of basic elements of art resources

Elements of local art resources	Basic artistic value
Artistic image	Different artistic images correspond to different artistic information, which is the basic standard of shaping art appreciation ability
Form of composition	The form of art works directly reflects the use value of art resources
Color organization	Color matching reflects the appreciation value of art works
Emotional expression	Emotional expression is an effective way to express the appreciation value of art works

The psychological feeling brought by color and shape has always been the object of visual art exploration and practice. Different colors express different emotions. Different shapes have their own visual personalities. Light colors are light and bright, dark colors are heavy and sticky, curves are soft and relaxed, and straight lines are hard and serious. These basic laws of visual psychology are embodied in the film and television animation, which is the emphasis on the characteristics of different art styles. At the beginning of the birth of film and television animation, there was no style or audience expectation. Like all other art styles, the development of film and television animation is also a process from scratch, from simple to complex, from single means to composite means. Its highly differentiated art style is also developed from the very simple style at the beginning. In this sense, the

audience's appreciation of film and television animation art style is accompanied by the development of film and television animation itself. Both of them are formed under certain plastic arts tradition and national cultural environment; If the formal characteristics of film and television animation at the beginning of its birth shape the audience's appreciation habits and gradually form a style in the audience's unconscious screening, then today, when the audience has gained greater autonomy and the right to choose, the influence of the audience's point of view on the art style of film and television animation is more important than any era.

On the one hand, the reason why film and television animation can achieve all kinds of exaggeration and deformation of objects lies in the high assumption of animation as an artistic style; In real shooting, real-life movies and TV plays, the scene, light, actors, lens movement and other factors are subject to the constraints of realistic conditions, but in film and television animation, the space for character activities and plot development is almost unlimited. On the other hand, in the long-term development process, film and television animation has gradually formed the tradition of seeking truth, beauty and freedom of expression. The content of beauty naturally appears in the form of beauty. The artistic style of film and television animation tends to be aesthetic and pure, which is also the embodiment of the audience's special appreciation expectation of film and television animation. Focus is a concept of communication. In communication activities, to understand the characteristics and needs of the audience and process the information for different levels of the audience can often achieve more ideal communication effect. Similarly, for film and television animation, theme selection and art style design for a specific audience level are often conducive to the realization of the expected business goals; and many levels of film and television animation audience based on age, gender, nationality and education level are also one of the important reasons for the rich diversity of film and television animation in terms of theme and art style.

It can be seen that the relationship between the art style of film and television animation and the audience's appreciation habits and expectations is mutual influence and common development. At the beginning of the birth of film and television animation, the comic style of single line flat painting once occupied a dominant position. However, with the development of production technology, the style of simulation art expanded rapidly. Today, 3D animation produced by digital technology has attracted the attention of the audience. The audience decides the market, but the taste of the audience is not unchangeable, especially in today's era when the trend is constantly changing and new styling styles are constantly emerging and being eliminated. The taste of the audience is changing with the fashion factors and the popular aesthetic orientation, and the appreciation habits, general expectations and the psychology of seeking novelty and change of the audience are combined together, which affects the development trend of the art style of film and television animation. In addition, the acceptance factor of film and television animation art style cannot be as controllable as the theme and cost in the operation of pre production. In order to avoid risks, many commercial animation feature films often use the paradigm that has been confirmed by the market. Visionary animation artists often use the paradigm that has been confirmed by the market as a reference to modify and innovate, so as to attract more audience's attention on the basis of ensuring safety. That's how Disney works. However, the more enterprising animation artists are bold to break the stereotypes. Their works often stand out from similar works and enter the audience's vision in a subversive manner.

The study of aesthetics aims to study the relationship between the connotation of artistic spirit and representation. As for the image art of film and television animation, the purpose of film and television animation aesthetics is to study its connotation and form. To explore the aesthetic of film and television animation lies in the decryption of the spiritual connotation, which mainly focuses on the form research of creative thinking, lens design, style characteristics, picture content and so on. These things hidden behind the works play an

important role in the process of showing the works. Their conceptual nature is undoubtedly the most important core in the early stage of film and television animation creation, which will provide reference for the quality of later works Ensure and grasp the direction. However, the common problem in the early stage of film and television animation creation in China for a long time is the neglect of the construction of these theoretical basis. When the creation goes to the next stage, there are usually confusion in the direction, lack of moving power, no accurate details, etc. it is obviously impossible to go back to remedy it. Therefore, it is a feasible method to analyze the elements of the works through a certain aesthetic methodology. This paper explores the spiritual ties between the author and the audience, provides a solid theoretical basis for creation, and promotes the vigorous development of animation creation in China.

CONCLUSIONS

It has been more than 100 years since the birth of film and television animation, but from the perspective of discipline, film and television animation still belongs to a new comprehensive research discipline. Its emerging is that the performance concept and content arrangement of animation are always synchronized with the most fashionable elements of the times, and the development of technology is always tracking the pace of the most high-tech of the times. In the post-modern society where globalization and globalization coexist, the audience's aesthetic demand for film and television animation, the development prospect of film and television animation and the aesthetic trend of plastic arts will also have endless changes. We often can't make a conclusion immediately about the special phenomenon in the evolution, and the research and analysis can only be phased, which requires the industry to keep a positive state of emergency and pay attention to it The development of animation art style also needs the close attention and further research of communication, psychology and aesthetics.

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