Aesthetic Trends in Digital Cinema in the New Era

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Abstract: *Digital movies gradually reach the climax of innovation with the popularity of Avatar. The development of digital media technology has been making breakthroughs in the researches of digital movie aesthetics, which promotes the combination of realistic simulation and full virtual aesthetics-- the virtual aesthetics of digital movies. This paper is from audience perception perspective to shallowly discuss the perception analysis of the collision between reality and virtualization of digital movies, and explore the trend of film aesthetics which includes the combination of technical l rationality and audience senses in the new era.*

Keywords: *digital film, Virtual, film aesthetics*

1. Introduction

While literature has been developed since the birth of writing, cinema has only just started since the industrial revolution, not many years ago, but cinema filming technology and technical innovation have already begun to make many technical revolutions and theoretical innovations in today's increasingly advanced technology. The emergence of digital cinema has combined virtual aesthetics with realistic aesthetics, thus changing the viewing experience and the perspective and feelings of audiences today.

2. A digital film on the stage of history

Digital cinema emerged in the 1970s, when Stanley Kubrick made the science fiction film "2001: A Space Odyssey" in 1968, creatively using film imaging technology to present space scenery realistically for the first time, greatly broadening the audience's perception perspective[1]. The emergence of the Internet has brought the convenience and speed of digital cinema to its peak. Digital films are transmitted directly to cinemas or individuals using the Internet and satellite data, eliminating the time-consuming and costly transportation. Through the data Internet, a comprehensive digital mode of production, projection, distribution and broadcasting has been realized, fully realizing the two-way digital integration of the Internet and movies.

The peak of the digital movie boom is attributed to the popularity of "Avatar", which is a digital masterpiece across the ages, and the digital technology has used the production technology of "Avatar" and 3D technology to the extreme and even created a boom all over the world. With the development of the Internet, digital movies are not only limited to science fiction movies, but also used in drama, documentary and romance movies, and the wide range of topics used is not limited by space and time.

Thus began the digital film to board the historical express of the times, quietly filling up around us.

3. The collision of virtualization and reality

Since the birth of cinema, the first film is a documentary film called *The Arrival of a Train*, which was filmed by the Lumière brothers, known as the "fathers of cinema". However, the disadvantages and limitations of the expression of the film are obvious. The birth of digital cinema has successfully integrated virtual aesthetics and the film, which combines virtual and reality to realize the true expression of the film content and brings the audience a different viewing experience.

The virtual aesthetics of digital film is divided into two kinds——the simulation of reality and full virtual aesthetics.The first type is the simulation of reality that is also called reality simulation.[2] To achieve the combination of reality and virtualization, digital media technology is necessary to present the film content that some parts cannot be filmed in the real world. Therefore, it requires post-editing technology to complete the scene of virtual reality.For example, in classic disaster film "2012" the

tsunami and earthquake and other natural disaster scenes are made by this way. Although the audience knows that this is a simulation of realistic scenes using special effects, the degree of realism still fully motivates the audience's senses and emotions, from this example we can realize the charm of digital film's realistic simulation technology, and it is the spark of reality and virtual collide differently.

The other type is full virtual aesthetics, which refers to the use of digital media technology to create films without reference to realistic scenes and characters, reconstructing characters, places and scenes by digital media technology. The use of full virtual aesthetics is universal in animation movies. Full virtual aesthetics movies (see Table 1) are widely used in international animation movies, such as *Frozen, Robot Story, Nezha: Birth of the Demon Child and Legend of Deification*, all of which are created using 3D animation modeling. *Nezha: Birth of the Demon Child and Legend of Deification* are both mythological characters in Chinese culture. The use of full virtual technology and full virtual aesthetics to show the characters to the world by digital film technology which has broken the embarrassing situation that mythological themes and movies cannot be combined into one, and has enriched the new direction of digital film development. However,Among the full virtual aesthetics, there is also semi-virtual aesthetics (see Table 2 for details of semi-virtual aesthetics films), semi-virtual refers to the filming based on real characters, and the digital technology virtual creation in editing and post-production. With the development of editing technology and digital technology, semi-virtual aesthetics is derived from CG filming, which is an achievement of technological development (see Table 3), and the latest CG filming uses semi-virtual aesthetics to the extreme, most typically The most typical one is Guo Jingming's *Legend of Ravaging Dynasties*（see figure 1 and figure 2）, which uses real actors to perform in a green cloth studio, and then uses CG virtual technology to virtualize the actors' appearance and movements as well as the scenes in the later stage. The semi-virtual technology can solve the scenes of the overhead continent and the appearance of exotic animals that cannot be seen in reality, and can fully realize the director's imagination.

Figure 1: Legend of Ravaging Dynasties' Film footage

Figure 2: Legend of Ravaging Dynasties' Shooting Poster

Table 1: Full virtual aesthetic movie.

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Toy Story 2	1999 Pixar Animation Studios, USA
Walle	2013 Walt Disney Company, USA
Nezha: Birth of the Demon Child	2019 Horgos Colorful House Pictures；Chengdu Coco Cartoon Co.,Ltd.; October Cultural Media Co. , China
Final Fantasy: The Spirits Within	2001 Columbia Pictures, USA
Legend of Deification	2020 COLOROOM; Enlight Pictures, China

Table 2: Semi-Virtual Aesthetic Films.

Beowulf	2007 Paramount Pictures, USA
Avatar	2009, 20th Century Fox Film Corporation, USA
Transformers	2007 Paramount Pictures, DreamWorks, USA
Assassin in Red	2021, Huace Pictures (Shanghai) Co., China
Avatar: The Way of Water	2022,20th Century Fox Film Corporation, USA

Table 3: Semi-virtual aesthetic live-action CG film.

Legend of Ravaging Dynasties	2016 LeTV Pictures (Beijing) Co.; Tencent Pictures, China
Killing City: O	2016 Toho Company, NetFlix, Netflix, Japan
Alita: Battle Angel	2019 20th Century Fox Film Corporation, USA

Semi-virtual aesthetic film using reality plus virtual effects for film creation, combining realistic field shooting and virtual effects technology to create a new digital film presentation effect, which is derived from a live-action CG film relying on the virtualization of real people, scenes are created by CG (Computer Graphics) effects.

There is no clear definition of virtual aesthetics between full virtual aesthetics and semi-virtual aesthetics, and there is even a certain combination of full virtual aesthetics and semi-virtual aesthetics (see Figure 3). In full virtual aesthetic films, scenes and characters are created by digital media technology, but in post-production, for the fluency of the characters' body language, actors in green screen special effects suits are generally used to perform special effects on the basis of the characters' movements; the scenes are made through special effects on the basis of realistic terrain; semi-virtual aesthetics uses real people as the main basis for character The semi-virtual aesthetics of the characters are mainly based on real people, eliminating the rigidity of the characters' body language. *Avatar: The Way of the Water* is the sequel to *Avatar* and will be released in 2022. Would *Avatar*"was released in 2009 with a combination of realistic live action and special effects, *Avatar: The Way of the Water*"differs from the first film in that it also uses a small amount of realistic filming.However throughout the film, it uses of post-production animation, allowing reality to assist the virtualization. To achieve the ultimate semi-virtual aesthetic effect of digital film. The protagonist of the film is a Na'vi living on the planet Pandora, in reality there actually there is no Na'vi in our world, human beings and species, but the use of digital technology special effects on the basis of real actors so as to complete the reproduction of the imagination, the film's scenes are based on the reality of the original forest form and production, in the daily life of the forest under the digital effects into a sense of mystery and beautiful alien ecology. The CG character shooting in semi-virtual aesthetic films still requires actors to shoot in the studio and then make the relevant scenes. The virtual aesthetics of digital cinema is still based on reality, combined with virtual co-creation. This requires the creators and producers to give full play to their imagination and grasp of the storyline for further production, not only limited to the virtual aesthetics itself, but also focus on the original content and the depth of the film, in order to better use the virtual aesthetics in the digital film. The combination of virtual aesthetics and digital cinema makes people's imagination no longer distant."The real is no longer that which can be reproduced, but that which is always reproduced, that is, the super-real." [3]
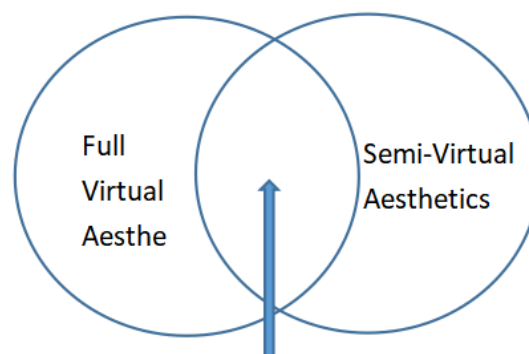
Figure 3: The relationship between full virtual aesthetics and semi-virtual aesthetics

The emergence of digital cinema has allowed the aesthetics of reality and virtual aesthetics to combine with each other and to carry out the collision between reality and virtual. Most of the films on the market today are virtual mixed with reality and virtual with reality, and the collision between the aesthetics of reality and virtual aesthetics has enabled the film industry to carry out unprecedented booming development today.

4. Audience perception changes in the digital film era

The biggest beneficiary of the development of technology is the film audience, whether it is the emergence of virtual aesthetics and realistic aesthetics of movies, the ultimate purpose is to cater to the contemporary audience's viewing experience and demand, the emergence of realistic aesthetics at the beginning, the film audience is to watch the camera record the original real life and the film storyline appears in common with their own lives at the beginning to achieve empathy, and then the sublimation of emotions to The audience will have a rich sense of cinema. Since the emergence of digital cinema, the audience's perception has obviously changed compared to the previous ones. The emergence of digital technology has broken the limitations of time and space, and has changed the way of filming and post-production methods.

First of all, the emergence of digital cinema has prompted the film capital market to start a batch of large IP adaptations, large IP adaptations of the film in its own IP has a large number of original IP fans, as the saying goes: "A thousand readers have a thousand Hamlets in their hearts." Each audience has a different imagination and conception of the character of IP, and the adaptation of big IP using digital technology will first lead to the disappointment of the original IP fans, plus the magic of the screenwriter to the original plot of the big IP will lead to the resentment and resistance of the film audience.

Secondly, the digital film has led to the collision of virtual aesthetics and realistic aesthetics, thus giving movie audiences a unique viewing experience. In the virtual aesthetics digital film, the use of special effects and digital technology to create realistic natural disasters such as tsunamis and earthquakes, the simulation technology fully mobilizes the audiences' audio-visual senses, as if they are experiencing the suffering of the disaster experienced by the protagonist and putting themselves in the shoes of the protagonist. The virtual aesthetics integrates the content of the film and the audience's senses, tasting the heartache of others in the film, and singing the pain in their own hearts.

Finally, the increasing popularity of the full virtual aesthetics of digital film production methods has led to strong competitiveness in the field of full virtual aesthetics of digital production technology, which has also enhanced the audience's perception of the film and increased their demand for the quality of the film's picture technology and content. The reason is that its production quality is relatively rough, and the hair of the character "Legend of Deification" is the roughest 3D model, which seriously affects the audience's perception of the film, but the production of a full virtual aesthetic film requires a stable supply of funds in addition to time support, so the broken capital chain and the compression of time costs lead to the film's picture quality. The compression of time costs lead to the film picture quality and content of the shortcomings are vulnerable to the general criticism of the audience.

Audience viewing from the previous realistic aesthetics focus only on the content of the subject matter and actors and actresses characters since the emergence of virtual aesthetics of digital cinema, added new requirements for film quality and film production quality, the transformation of film audience perception also contributed to the continuous breakthrough and development of film aesthetics.

5. Conclusions

The collision between virtual aesthetics and real aesthetics caused by the emergence of digital cinema is not a coincidence but the result of the development of the times. Its success is not only the success of technological innovation but also a manifestation of people's new understanding of aesthetics in the new era, a showdown between digital technology and traditional editing and post-production technology, and a mutual collision between the rationality of virtual aesthetics technology and audience perception. The development of science and technology in the future is a constant complement to film aesthetics, signaling a new aesthetic development and new height of future film aesthetics.

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