

Analyze the Application of Multimedia Technology in the Special Effects of Film and Television Animation

-- From the Animated Short Film of "Day after Day"

Wen Zhang¹ and Yiqing Wang²

¹College of fine arts, Jiangxi normal University, Nanchang 330022, China.

Abstract

The advent of the information age has made computer information technology progressing. In this process, multimedia technology has been widely applied in the special effects of video and animation. As a new industry in recent years, the speed and quality of the development of film and television animation have been influenced by the development of computer multimedia technology to a large extent. This effect is particularly evident in the treatment of the later special effects of film and television animation. The adoption of multimedia information technology has gradually changed the late special effect editing methods and ideas of the traditional film and television animation, and greatly improved the expressive force and influence of the contemporary film and TV animation special effect editors. This paper introduces the virtual production technology and the general application of the later special effect technology in the animation visual effect production, and will analyze the visual effects through the production of the experimental animated short film "day by day". The development trend of the later visual effect production technology is speculated, and the industry goal is to meet the market demand, and to break the boundary between art creation and technology application by improving production efficiency and reduce production cost, and improve the overall development level of visual special effect production.

Keywords

Multimedia technology; film and television animation; late special effects; development trend.

1. Introduction

Movie special effects began to form from the era of Merrie, and along the way, the entire film industry has crossed the relatively simple special effects of early shutdown, disassembly, double exposure, etc. The movie special effects have gone through the early stages of freeze-frame animation and blue-green screen keying. Today's film special effects technology has fully entered the digital image era and 3D visual era of movies from the traditional film special effects technology. While using multimedia digital special effects to meet the creator's rich imagination and rich picture requirements, it has gradually formed New visual senses. Rich technical means to satisfy the people's growing aesthetic visual experience. "Day after Day" experimental animation video combines the effects of real shots and post-animation visual special effects to express the author's state of mind in the special context of "postgraduate entrance examination".

2. Connotation of Special Effects in Multimedia and Film and Television Animation

2.1. The Connotation of Multimedia Effects

Special effects generally refer to digital special effects. They use computer software to digitize the motion deformation of various scenes, characters, and animals in movies and televisions. According to different special effects generation methods, they can be divided into post-special effects software processing and computer graphics technology. And digital image synthesis. It should be noted that, due to the different film and television works produced, the required film and television special effects are also different, so the post-special effects professionals should choose the software based on the needs of the work and the characteristics suitable for their work.

2.2. Connotation of Special Effects in Film and Television Animation

The special effects of film and television for short is called film and television special effects, in order to achieve the pictures that creators and audiences want, but it is impossible to complete in reality or it takes a lot of time and money to complete, and then use computers or workstations to reconstruct the scenes and even the image of characters To achieve the visual effects that the creator expected. In general, the main method for the production of special effects in film and television animation is to use green and blue screen keying synthesis and 3D software animation rendering to recreate the camera shooting material into special effects shots, and fuse the scene by editing the clips. Compose a complete animated short film. The production of special effects in the late stage of film and television animation is an important technical means to enrich the picture and enhance the visual impact of the film. It has an indispensable position in animation short films.

However, from a practical point of view, special effects are only used to create unconventional virtual scenes. Conventional expression methods mainly include 2D, 3D, models, special effects animation software, etc.-during filming of film and television animation, they are often subject to field conditions. Restrictions on hardware and technical means have caused many images to fail to achieve ideal results. The emergence of special effects in the late stage just fills the gap in this inadequate shooting. For example, it can not only simulate natural phenomena such as storms and lightning, but also simulate physical phenomena such as virtual air crashes, building collapses, and universe wars. As for the microorganisms that are invisible to the naked eye The world can be presented as well. The rational use of special effects in the process of animation production can enhance the sensory stimulation of the work. Looking at the development of China's film and television animation post-production, in fact, it has been a long time, but until the 21st century special effects production is still in its infancy. However, as China 's relevant policies gradually increase support for the animation industry, a large number of outstanding film and television animation works have appeared one after another, and film and television animation special effects have gradually opened a new development model.

3. The Development Direction of Film and Television Animation in the New Era

At present, it seems that the film and television animation industry is an emerging industry, and its position in the cultural industry is increasing day by day, which has an important role in enhancing China's "soft power" and improving the cultural literacy of the people.

Film and television animation has distinctive characteristics of the times. It can be seen from two aspects: On the one hand, the continuous development of multimedia technology industries such as TV column packaging, CG movies, and the production of the game industry has gradually

raised the audience's visual requirements and promoted the demand for professional talents in the film and television industry year by year. The number of post-editing talents for film and television animation that really meets the development needs of the industry has increased. On the other hand, with the development of the integration of the world economy, in order to strengthen our cultural soft power and seize all opportunities and challenges, our film and television industry and the world Opportunities for market cooperation are increasing day by day, resulting in increasingly high demands on the quality of professionals in the industry. Future development trends indicate that it is easier for compound talents to "take the market". In all fairness, the requirements of film and television animation post-editing on the practitioners are not out of reach and difficult to achieve. Based on solid professional knowledge, supported by good professional quality, and skilled professional skills as a guarantee, professionals can engage in various aspects of 3D animation production, composite editing, and post-production of special effects in the field of film and television animation, and can also combine Diversify your own expertise.

4. Application of Multimedia Technology in Special Effects of Film and Television Animation

Multimedia technology is the most active, comprehensive, fastest-growing, and most effective artistic method in the animation and film industry today. According to the current needs of the development of animation and film and television industry, the creation of film and television animation should integrate art with science. In recent years, the types of software in the field of multimedia technology have been increasing, and related technologies have been continuously updated and expanded. These advances have greatly promoted the widespread application of computers in the field of film and animation.

Under the premise of media integration, we pay attention to the interactive research and diverse presentation of various multimedia technologies. In addition, the continuous development of today's Internet technology has put forward new requirements for film and television animation to enhance the expressiveness and appeal of works-this requires the need to take different ways to perform special effects editing and integrate the shooting content with people's lives at all levels . With the continuous development of science and technology and the acceleration of computer updates, the related software and operating instructions have become more complete and simplified. Most of the later effects of film and television animation also borrow this technology to facilitate and simplify procedures and improve editing efficiency. With the mouse and keyboard operations, you can complete some special effects editing work. At the same time, the use of multimedia technology can also "call" real scenes, or create mysterious unknown worlds based on imagination, and even express some shots that are difficult to obtain in real life. It integrates multimedia special effects technology and time-space art throughout animation. The work has both visual and spatial properties, as well as audio-visual and temporal characteristics. The film and television animation under the background of the digital integration era must pay attention to the development prospects and wide application of multimedia technology, and make full use of it in the later special effects editing to improve the artistic and appeal of film and television animation works. The author believes that the application of multimedia technology in the special effects of film and television animation can be discussed from the following aspects:

4.1. Application of Audiovisual Technology in Special Effects

The main feature of film and television animation is the use of two-dimensional animation planes to affect the audience's hearing and vision. In practice, you can use technologies such as

simulated music, lighting, and sound effects to equip scenes and characters with backgrounds in your work.

The post-special effects production staff will observe the style of the work as a whole, combine the author's overall idea, use different equipment and methods, try different schemes and check and choose the best scheme. However, we know that this three-dimensional operation does not work in traditional film and television animation. In fact, the rational use of multimedia technology in the special effects editing of film and television animation and the professional concept of "from technology to art" can promote the perfect combination of technology and humanity, technology and art. By adopting a variety of methods to integrate and use multimedia technology as the technical basis for post-production of film and television animation, film and television animation works can better meet the aesthetic needs of the audience [1].

In addition, the organic integration of multimedia technology in film and television animation, combined with live simulation, makes the post-processing of sound effects more perfect. For example, using multimedia to process human voices can produce natural sounds such as wind, thunder, and rain; analog radio stations, analog incoming calls, and lower human voice frequency bands. You can also use related technology software to build a variety of sound effects environments, such as noisy game halls, quiet classrooms, and lively squares. This is particularly evident in the later dubbing of film and television animation. The use of multimedia technology software makes the character's voice more consistent with personality characteristics and makes the scene performance more vivid.

4.2. Application of Imitating Real and Virtual Space in Special Effects

The rational use of multimedia technology can allow creators to create and re-create more flexibly and freely based on their own knowledge of film and television animation based on their own understanding and imagination. The powerful creativity and simulation capabilities of multimedia technology can produce surreal audio-visual effects, presenting the space and time in the mind of the creator one by one. In particular, it has a strong professional system to operate 3D animation software such as Cinema 4D, 3DMax, etc., which can create a simulation space in a short time. On this basis, the numerical value is adjusted to make it more accurate, thereby enhancing the artistry of film and television animation post-production [2]. This greatly enhances the adjustability and controllability in the production of film and television animation, and further stimulates the creators' imagination and simulation of the unknown world and virtual spacetime, thereby enhancing the forward-looking and innovative nature of film and television animation.

4.3. Application of Digital Technology in Film Visual Effects

In the long history of the development of the film and television industry in the past, the production process of movies has revolutionized due to digital technology. CGI is computer-generated image technology. At present, this technology has been widely used in the production of visual effects for movies and televisions. It is mainly used to produce lens pictures that are dangerous, expensive, or impossible to shoot at all.

The CGI screen production process is roughly as follows: create a three-dimensional model in the software, then assign texture materials to the model, then edit the animation of the virtual object, then render the completed animation, and finally combine the rendered image with other image materials. Processing this process varies according to the content of different projects and the quality and quantity of production will be limited by the software and hardware conditions of the computer.

5. Production process of the short film "Day after Day"

5.1. Preparatory Stage

The two key elements of the success of movie special effects production are planning and technology, which are the root of film special effects.

5.1.1. Planning Stage

It is mainly the creative decision of the script script of the special effects of the film.

Planning: Constructing the creative idea of the film in the mind, including the picture, sound and style of the film. Through a series of studies, he conceived other movies, arts, life and other behaviors, and then developed these ideas into the film's style, rhythm, and tone planning.

5.1.2. Script Stage

The main purpose is to design a shot script for the special effects shot of the movie before shooting the movie.

Before the start of the short film, according to the designed scene scheduling, camera movement and CG picture processing content, the corresponding early-stage text script and screen shots were made.

5.1.3. Equipment Technology Stage

The main purpose is to prepare shooting equipment and technical support for film special effects production. After technical analysis, the film special effects lens is divided into layers to process the background layer, the foreground layer and the special effect layer in order. For example: blast, fluid, particles, etc., and then use 3D virtual camera to simulate the motion trajectory of the camera.

5.2. Short-term Effects Technology

With the initial preparation of the film quite adequate, the film production entered the shooting process. At the same time, movie special effects are also in the middle stage.

On-site shooting stage: The main purpose is to capture the characters and background material shot on the scene.

5.3. Late Stage Special Effects Technology

After going through the early and middle stages, we get live shooting pictures, and then go through the production process of post-editing and special effects and color correction.

According to the needs of the early stage script and the script will cut the shooting material into a film, the shooting content and script will use special effects synthesis software and three-dimensional software (CINEMA 4D, 3DMax) to produce special effects shots. The post-production software used in the film mainly includes graphic graphic design software, post-special effects synthesis software, 3D production software, etc.

6. Conclusion

With the advent of the era of multimedia information, multimedia technology will be widely used in more fields, and it will also have a more important impact on people's lives. The special effects editing of film and television animation is no exception. Only in accordance with the trend of social development and effective application of multimedia technology can the development of film and television animation industry be promoted.

References

- [1] Chen Jianjun. Research on the Application of Multimedia Computer Technology in the Production of TV Special Effects [J]. *Wireless Internet Technology*, 2012.24 (12).
- [2] Chen Shujuan, *Film Technology in the Digital Age* [N], *Computer World*, 2006.
- [3] Feng Jing, computer effects "invented" the film industry again [N] *Computer Newspaper*, 2007.
- [4] Hu Rong. *Classics of world film and television special effects* [M]. *Communication University of China Press*, 2012.
- [5] Jaegeol Yim, Jaehun Joo, Silvana Trimi. A method of recognizing objects on camera photos of smart phones using electronic maps [A]. 2002.
- [6] Robert Kolk (US). *Film, Form and Culture* [M]. Dong Shu, Translated, *Peking University Press*, 2013.
- [7] Li Hengji, Yang Yuanying. *Selected Works on Foreign Film Theory (2nd Edition)* [M]. Life. Reading. Xinzhi Sanlian Bookstore, 2006.
- [8] Liu Xinyang. Definition and analysis of the concept of film visual effects [J]. *Film and TV Production*, 2012.
- [9] Wood Yu's analysis of the role of digital technology in enhancing film visual effects [J]. *Electronic Technology and Software Engineering*, 2017 (12).
- [10] Pamela Greentonkamp (US) *Industrial Light and Magic; The Art of Innovation* [M] Translated by the *Martian Times*. *People's Posts and Telecommunications Press*, 2013.
- [11] Zheng Di, "2012": Deconstruction of 140 special effects shots [N], *21st Century Business Herald*, 2009.