The Exploration of VR Documentary Narrative

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Abstract—**Since 1950s, virtual reality (VR) has made considerable and rapid development. With the advance of science and technology, it gradually penetrated into all sectors of the social development, and especially has brought new creative forms and watching mode for the film industry. During this period, documentary is the first form of film that is integrated with VR technology. The traditional documentary is subverted from its shooting, editing and narrative language by virtual reality technology. Thus, this paper will focus on the narrative problems of VR documentary and suggest the future narrative model for VR documentary by analyzing representative cases of VR documentary at home and abroad.**

Keywords—virtual reality; documentary; narrative language; Montage

I.   INTRODUCTION

Since the birth of the first VR documentary Kindergarten in Mountain Village in 2015, the combination of virtual reality and film stepped into the first year of virtual reality in 2016. As a new media form, VR has changed the connotation and creative form of documentaries. At the meantime, with the guidance of VR technology, documentaries have subversive changes in narrative contents, narrative perspective, shooting methods, editing style, etc. A new, multi-perspective, multi-dimensional and multi-functional artistic carrier of narration is emerging.

II.   THE INEVITABLE INTEGRATION OF VR TECHNOLOGY AND DOCUMENTARY

In the past documentary works, visual experience that the audience can experience was limited and documentary plots are "verisimilitude". The so-called "verisimilitude" refers to the fact that the essence of documentary is "truth", it means to present the recorded real things to the audience through artistic means. Affected by the director's thinking and Montage's narrative rules, part of "truth" will be cut off because of the overall effect of the film, which is "verisimilitude".

However, since 2016, the first year of virtual reality, VR technology has taken the lead in integrating with documentary as an artistic carrier. Creators have begun to try to create documentary under the VR paradigm. This not only makes a break at the concept of "picture frame", expands the narrative in the 360-degree picture, but also expands the audio-visual language system of traditional documentary. It gradually transfers the traditional director-oriented system to the audience- oriented so that the interaction between the audience and the scene is greatly increased, thus greatly improving the reality of the documentary.

There are three points behind this:

- Pre-production — "No place for staff to hide"

Because 360-degree cameras are everywhere capturing all direction, the staff has to leave the shooting scene quickly after it starts and leave the documentary protagonist to give a real performance in the scene. Therefore, it will ease the extent of deliberate guidance and intervention to the characters in the film, and will maximize the reality of the documentary characters in the pre- production stage.

- Post-production: Subversion of Audiovisual Language System

"Narration is communication, so it assumes there are two sides: a sender and a receiver. Each side has three different personalities. The sender side is the real author, implied author and narrator; but the receiver side is the real audience, implied audience and narrative object." [8] S. Chatman said. Due to the 360-degree VR camera, a single shot usually lasts more than 20 seconds. The long take of the whole story will give the audience the feeling of the detailed internal environment of the film. The documentary is further more true by enhancing the reality of the scene.

- Moviegoing Experience: The Turn Up of Head Mount Display

Unlike traditional 2D watching, viewers need to put on multi-functional devices, such as helmet or eye mask, to access a virtual space presenting real scenes. All audio-visual contents, with its unique immersion and presence, convey to the audience the soul connotation of the documentary "Pursuing Truth and Presenting Truth".

Because the single shot of VR film lasts for more than 10 seconds, the whole film is mostly run through with long take, and fades in and out between scenes, so this narrative rhythm and the high extent of documentary retelling cannot meet the development of the plot of the feature film. (The director of feature films is good at using the director's thinking to achieve the integration of the plot development through the clues in the picture, and then promotes the ups and downs of the plot through the post-production of tension music or suspense music in the climax of the film with the quick clipping-fast switching of pictures.). Thus, the combination of VR technology and documentary is inevitable, and the holographic technology of virtual reality is also in line with the nature of documentary, "reflecting reality and pursuing

truth", which greatly improves the reality of documentary film.

III. CASE ANALYSIS AND NARRATIVE CHARACTERISTICS OF VR DOCUMENTARY

At present, the domestic academia is still exploring the narrative of VR documentaries. Case analysis and study of the creation form of VR documentary are the main research ways. Starting with three representative VR documentaries, this paper makes a thorough study of their creation subjects, shooting methods, editing features and narrative methods, and then analyses and summarizes the common features of VR documentaries.

Starting with the first film The Displaced by the New York Times, the story is about the bombed schools in eastern Ukraine, the people suffering from the civil war in Sudan and Syrian refugees in Lebanon. It presents their displaced lives to the audience from the perspective of three war-torn children. Another film is "Clouds over Sidra" co-produced by Chris Milk and Gabo Arora, which tells the story of a 12-year-old Syrian girl, Sidra, in the Zaatari Syrian refugee camp in Jordan. She came from Zatari refugee camp in Jordan, where sheltered 84,000 poor refugees fled from the Syrian civil war. At the beginning of the film, facing the camera, Sidra began to talk about her family, her school life and her poor living environment in the refugee camp. The third film listed here is the first documentary produced with virtual reality technology in China, Kindergarten in Mountain Village. The film is mainly about the Left-behind children, migrant parents and volunteer teachers working in the rural area. The film is shot in Songtao in Guizhou and Guzhang in Hunan. It is presented from three perspective: first, narrating by the grandmother of the left-behind children; second, expressing all kinds of irony from the childish gossip of the left-behind children who have long been accustomed to this situation; third, looking at left-behind children from the perspective of volunteer teachers as third party, and further bring out the educational environment in the mountain villages. [8]

Through the watching and analysis of the above three films, the current mature VR documentary works present the following commonalities:

- The theme of the film that is mostly social focus or about hot spots has typical and scarce characteristics, such as refugees' lives in war, people fighting against Ebola virus in Africa, the theme of celebrating the 30th anniversary of the Chernobyl nuclear disaster and so on. This kind of theme reflecting the current world can make the audience more immersed in touching images, however, meaningless and boring theme will greatly reduce the height of a documentary.

- The film mainly used fixed lens for shooting. There are a few novel scenes, for example, the film Displaced, are recorded with a self-timer pole.

- The length of most of the film is about 10 minutes. Considering that when the effect of 360-degree wide angle or panoramic view is presented, the audience will feel dizzy if they wear VR head display device for too long, which greatly reduces the user experience.

- Most of the films take fade-in and fade-out as transfer; similar scenes will be directly transferred by overlapping. For example, about the two minutes of the film "Displaced", three little boys play in a ruin, and the post-production transfers directly in two similar ruins with overlapping, which is quite harmonious.

- The films mostly record the life of the protagonist from a third perspective, but it narrates in the first person. The mean of emphasizing voice with less prominent scene quite matches the tone of the film.

- The films mainly used parallel Montage to narrate the story, which interweaves the stories of different protagonists and tells them in parallel.

It is not difficult to find that, through parallel analysis and comparison, VR documentaries present more commonness than the specific character; and the narrative is mainly characterized by sequential narration, long narrative time and slow narrative rhythm. As from the use of fixed lenses in the early stage of shooting, or the large number of long-shot used in the post-production, as well as the singleness of the transfer effect, the narrative function of the traditional film language can not be brought into full play, and the Montage language is also limited.

IV. NARRATIVE BOTTLENECK OF VR DOCUMENTARY

A. The Singleness of the Shooting

The traditional narrative of documentaries often uses a series of conventional narrative ways, "panorama, long shot, mid-shot, close shot, close-up and push, pull, shake, move, follow" has become a set of fixed shot language. In panoramic video shooting, 360-degree vertical and horizontal synchronization is required, which is mostly used for fixed focal length. This kind of shooting abandons the controversial moving shot such as push, pull, shake, move and follow. This really enhances the reality of documentary, but it also loses the effective tool, the close-up. When the characters become emotional, they can't catch their tears, and can only be remedied by approaching shooting. Fixed focal length also brings three grammatical changes: first, the lack of depth of field, shallow focus once became a powerful means to highlight the subject and beautify the characters, and hazy out-of-focus shot became rare. Secondly, the lack of long-focus shot has lost the means of magnifying and observing small objects. Thirdly, the absence of shot range excludes Montage and invalidates the grammar of combinations of a large number of shots. [2]

B. Homogeneous Narrative Rhythm

The long take of VR films will give an expression of procrastination and can make people boring in movies with the same rhythm and type. If the narrative rhythm is changed or accelerated, the viewer will easily feel dizzy under the

interactive helmet, and will miss a lot of important information that should be paid attention to, thus affecting the development and effect of film narrative.

C. Human-computer Interaction Is Limited

VR documentary virtual reality system is a technology that encourages audience to engage in reality construction. When the audience really put themselves in the film, there will be an impulse to engage in the plot. For example, in a VR animation, when the hero Henry sits in a chair at home crying, the viewer wants to comfort Henry but finds that there is nothing he can do due to the limitations of the current equipment technology. "You are in front of me, but we are still not in the same world." This sense of loss will break the immersion instantly and make the audience realize that "I am only watching a VR film". Therefore, the existing technology cannot fully support the real immersion.

V. THE NARRATIVE COUNTERMEASURE OF VR DOCUMENTARY FILM

Just as the above analysis of the weak narrative function of VR documentaries, VR documentary directors should explore a new and mature narrative mode from how to narrate the story more completely and how to balance the impact of VR interaction on the creative form. This paper uses the guiding of stage show directors as reference, and analyzes the factors that can affect the audience's attention, such as voice, character's position and action, light and shade, subtitle position and so on, hoping to provide ideas and help for VR director's narrative exploration.

A. Exploration on Perspective of Narration

1) Subtitle position guides visual focus: In traditional documentaries, subtitles can prompt, supplement and emphasize the picture information. In VR documentaries, subtitles also play a guiding role in the audience's visual focus because of their position and direction. Therefore, guiding the audience to follow the direction of the subtitles to track the direction of the core contents of the scene is a great help to enhance the audience's attention and it is also helpful to the contents of narrative. Take documentary "Kindergarten in Mountain Village" and "Most Beautiful Place in China" series as example, the position of subtitles changes with the position of the subject of the screen, thereby leading the audience to focus on the key contents of the screen.

2) Bright light highlights the subject of the picture: Through analyzing the narrative characteristics of stage shows, it is found that the use of follow spotlights and down lights plays a role in focusing on the characters and scenery in the stage. Similarly, in VR documentaries, the subject can be guided by light brightness and color shade, thus assisting the development of VR film narrative.

3) Movements in the scene guides visual direction: According to the habit of watching movies, audiences tend to pay attention to objects moving in the environment. The VR director guides the viewer's visual direction through the relative moving objects and characters' movements in the scene, thus helps the viewer to watch the film completely and smoothly. In addition, the visual direction of the actors in the scene will also affect the visual direction of the audience. For example, in the VR film The Dream Collector, when the old man and the dog turn around and look up at the fireworks in the sky, the audience also follows the protagonist's visual direction and focuses on the subject of the scene - the blooming fireworks.

B. Exploration of Montage in Scenes

When the narrative function of traditional Montage language is limited by virtual reality technology, VR directors should explore as much as possible the possibility of montage narration existing in the scene. For example, in order to show the passage of time, the directors of traditional documentaries will usually take a set of scenes by time-lapse photography, which can't be achieved in post-production of VR documentaries, so they can choose to add innovative points in the scene. For example, in open grassland, the director of VR documentaries can add a flower as the focus of the scene, and shoot the blooming and withered flower in the alternation of seasons in four sections with the camera position remains unchanged. The four scenes are overlapping processed during post-production, which completes the design of the Montage in the scenes under VR technology.

C. Exploration of the Diversified Interactive Ways

At present, the interaction behavior of VR documentaries is relatively unitary, so the audience just has felt strong involvement. Therefore, exploring the interaction function of VR documentaries, developing various ways of interaction and enhancing the audience's involvement will help the narrative exploration process of VR documentaries if the current "shallow interaction" can develop into "deep interaction". Then at that time, the audience will participate in the plot "actively" as the characters in the play instead of passive watching. They can interact with the environment and characters in the film, thus promoting the development of the story and the innovation of the narrative structure of VR documentary.

VI. CONCLUSION

The innovative changes in traditional documentaries brought by virtual reality technology can not be underestimated. However, due to the limitation of existing device, the exclusive narrative method of VR documentaries is still under exploring, and the deficiencies in its interaction also confine the development of VR narrative. It is believed that with the continuous development of science and technology, hardware will no longer be a problem, and it will gradually change narrative problems and its countermeasures. The Montage that is exclusive to VR films may happen and audiences will no longer only participate in the films as viewers. Making theoretical and practical preparations, as the future VR documentary is expected to be more mature and perfect.

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