The effect of narratives in United Nations Virtual Reality

Tianxiao Jiang

Experimental High School Attached to Beijing Normal University, Beijing, China

tianxiao_jiang@ldy.edu.rs

Abstract:

Viewed as an empathy machine, Virtual Reality (VR) film has been utilized by many humanitarian organizations. to augment individuals' comprehension of humanitarian issues and evoke empathetic responses. Despite extensive analysis on the impact of virtual reality in eliciting empathy and its narrative techniques, there exists a research gap regarding the specific attributes of UNVR films. This paper critically examines the positive effects, unresolved challenges, and ethical concerns of UNVR films, particularly through the lens of various narrative techniques, including their documentary realism, montage, external authorship, and extra-diegetic voice-over. This paper calls attention to how UNVR films, despite conveying the same content and expressing the same ideas, achieve better effects than one-dimensional or two-dimensional media, enhancing the audience's comprehensions of suffering groups such as refugees and eliciting empathy, while also pointing out the challenges that UNVR still faces. The paper also analyzes the fundamental deficiencies of UNVR in terms of embodiment and eliciting empathy. It will conclude with suggestions for future research on how to utilize narrative techniques, based on unique features of VR, to enhance the role of UNVR in addressing humanitarian issues.

Keywords: United nations virtual reality, empathy, films, embodiment

1. Introduction

As early as 2007, Riva et al. confirmed through quantitative experiments that viewers could experience a sense of "presence" in virtual reality imagery and that the emotional tone presented in the imagery had a positive correlation with the viewers' emotional perception [1]. Since the availability of affordable virtual reality (VR) headsets in 2015, VR content production has exploded, much of it with the focus on evoking certain emotion within audience [2]. The UN SDG Action Campaign began to coordinate the United Nations Virtual Reality (UNVR) Series to "bring the world's most pressing challenges home to decision makers and global citizens around the world, pushing the bounds of empathy" (United Nations Virtual Reality, n.d.), in January 2015. The role of VR in the field of humanitarianism has been met with high expectations, with Chouliaraki describing VR film formats as part of a post-humanitarianism, which refers to self-referential ways of being and emoting [3, 4].

Numerous scholars have scrutinized the narrative techniques in cinematic virtual reality (CVR) and how they differ from traditional filmmaking, encompassing distinct issues as well characteristics. These analyses are also applicable to the UNVR field, with some of them specifically examining specific UNVR films. For example,

Zhihong discusses the unique characterisics of montage in the UNVR film *Clouds Over Sidra*, while other scholars have underscored the challenges associated with employing montage in CVR [5-8]. Similar to what Pedwell calls "felt truth," many scholars have commented on the immersion and embodiment in VR experiences [9]. It is widely believed that deeper immersion mobilizes individuals to act—whether through campaigning or fundraising—in a more effective way than other conventional approaches [10, 11]. This holds significant importance for UNVR project. This paper will follow Kilteni, Groten, and Slater's definition of Sense of Embodiment (SoE) [12]. The question also arises as to whether VR possesses the widely believed remarkable ability to elicit empathy and foster pro-social behavior more effectively than other two-dimensional media in the long term [13, 14, 15]. In humanitarian issues, considering VR's significant effects on eliciting empathy, UNVR has garnered considerable attention. Although many studies include analyses of individual UNVR films, UNVR as a whole has never been analyzed in terms of its narrative features and effects. A specific and comprehensive analysis of UNVR could highlight its merits while also pointing out its limitations and potential advances that can be made.

In order to provide a comprehensive illustration of the narrative techniques and embodiment experience in

UNVR films, this paper starts with examining how UNVR films, with their documentary realism, can offer a unique perspective on social issues and potentially lead to several challenges. Secondly, this paper goes to montage used in UNVR films for transitions, considering both its merits and its drawbacks. Thirdly, this paper delves into the film techniques of UNVR through the lens of characteristics and limitations of external authorship and utilization of extra-diegetic voice-over. Finally, a general view on questionings of UNVR regarding embodiment experience and empathy elicited is provided in this paper. It will conclude with suggestions for future research to on addressing the existing issues with UNVR's narrative techniques, aiming to enhance the audience's emotional engagement and effectively convey the humanitarian message.

2. Documentary Realism

Documentary realism is closely linked to observational documentary, as Moon observed, with the latter embodying objectivity and non-intervention in documentary filmmaking [16]. This objective and realistic mode of representation creates a sense of direct witness for the audience, thereby enhancing their trust and engagement with the film's content. The core philosophy behind using documentary realism to elicit empathy thereby achieving better impacts via UNVR films lies in the capacity of documentary realism to create a compelling sense of immediacy and presence for the viewer. By adopting a fly-on-the-wall perspective, the UNVR filmmakers position the audience as passive observers. Compared to mere narration or reporting, the documentary realism of UNVR includes more authentic details, and the specific environmental features enhance people's deeper comprehensions of the victims of social issues depicted in UNVR, thereby creating a powerful feeling of being a direct witness to the unfolding events. With a deeper emotional connection between the viewer and the content as well as stronger trust in the authenticity of the representation and engagement with the subject matter, the unobtrusive nature of this style make the UNVR audience feel the freedom to form their own interpretations and conclusions, uninfluenced by overt authorial guidance or narrative framing. The non-interventionist approach employed in observational documentary also supports a more immersive viewing experience, encouraging the viewer to focus on the minutiae of everyday life and the subtle dynamics at play, such as the different textures of sand near the Zaatari refugee camp in *Born Into Exile* and the damaged wooden house in *Ground Beneath Her* [17, 18]. The non-interventionist approach, with deeper immersive experience, encourages the audience to independently reflect upon the documented facts, ultimately aiming to "inspire viewers towards increased empathy, action, and positive social change."(United Nations, n.d.) The utilization of a non-interventionist approach combined with VR technology creates a unique platform that render the line between observation and participation blurred. This blurring is specifically crucial since it moves the audience beyond mere spectatorship with no suffering experience presented in UNVR movies to a position of active engagement and emotional involvement with those victims to natural disasters such as earthquakes and human-made disasters such as wars. Distant and complex social issues are transformed from abstract concepts into relatable human experiences, in the same way the word *war* -a concept common but far from most viewers' reality- is transformed into the details shown by damaged buildings and insecure facials on people's faces in *Clouds Over Sidra* [6]. When viewers are placed "inside" these stories, they hold more potential to feel a personal connection, which can motivate them to engage with these social issues in a meaningful way.

In a VR film, positioning the camera at eye level with the viewer can effectively cultivate "a sense of presence by establishing an empathetic connection" between the audience and the protagonist (Fig. 1), as Zhang and Weber suggests [19]. This technique is commonly employed in UNVR films. For instance, in *I Am Fatmira* with the story of an Albanian girl whose name is Fatmira, UNVR, with the camera at eye level of viewers, immerses viewers into the identical dilapidated house and make them "experience" selling used clothes, shoes, and scrap metal just as Fatmira once did, hence letting them form "empathetic

connection" with Fatmira [20]. Eventually, this method successfully highlights Fatmira's resilience as a woman and activist while addressing issues of gender equality within poverty-stricken and conservative environments.

Fig.1 Positioning the camera at eye level with the viewer. From *I Am Fatmira* **[Virtual reality film], by United Nations, May 2018 [20].**

However, many scholars have also raised concerns about the degree of authenticity and realism in UNVR's use of documentary realism. Although unscripted content and minimal interference are recognized as fundamental characteristics of documentary realism, Ryan discusses the highly acclaimed UNVR film *Clouds over Sidra*, suggesting that while it is undoubted that " the images are documentary", the "status of the narrator is more questionable," with Nichols similarly challenging the common perception that documentaries are purely factual or objective [21, 6, 22]. Instead, Nichols highlights the filmmaker's role in shaping the narrative and guiding the audience's understanding of the subject matter, emphasizing that selecting, organizing, and presenting material inevitably involve interpretation and bias to some degree. Ryan also noted that "the perfect coordination between the images and the narration" indicates that the script was "written by a scriptwriter who imagines what it is like to be Sidra" rather than being an adaptation of what Sidra's original words. Therefore, no matter how objective it seems, it cannot be without any piece of subjectivity in any UNVR or other documentaries.

3. Montage Narrative Technique

Frequently employed to organize shots, the montage technique can achieve a more effective narrative than traditional linear storytelling in UNVR films. In documentary films, the necessity to include the long-term and multifaceted development of characters or events cannot be ignored. This time span requires extensive coverage in traditional linear storytelling, which can make the narrative pace tedious as well as lengthy. Consequently, linear narratives captured through documentary-style footage often struggle to evoke strong emotional resonance while maintaining an adequate narrative pace. Montage techniques, in contrast, more readily facilitate emotional transitions by condensing time and space. By simultaneously fostering empathy and enhancing narrative pacing, it smooths transitions between different emotional states or narrative threads, linking scenes through visual or thematic elements. This approach, which fosters a more cohesive and immersive experience, facilitates the emotional transition of the audience from one narrative segment to another, thereby supporting UNVR's mission to provide "a deeper understanding for those living in the most complex development challenges" (United Nations, n.d.). As Zhihong observed, in the film *Clouds Over Sidra* [5, 6]:

"contains 15 panoramic shots, with transitions using fade-outs. By examining the keyframes before the transitions, it is evident that there is no strong progressive narrative

connection between consecutive shots. Even if the order of the shots in the short film is switched, it would not significantly disrupt the narrative rhythm. To some extent, this reflects VR's lack of a strong inclination toward linear storytelling, instead placing more emphasis on the presentation of scenes within individual spatial shots."

Fig.2 Before the transition. From *Clouds Over Sidra* **[Video], by UN SDG Action Campaign, January 2015 [5]**

Fig. 3 After the transition. From *Clouds Over Sidra* **[Video], by UN SDG Action Campaign, January 2015 [6].**

The success of montage technique is guaranteed by the natural and continuous transition between shots, which is achieved by strategically positioning cameras and accurately determining the start and end of each shot. However, unlike traditional films where camera poses are predetermined, CVR projects allow viewers to control the viewpoint [7]. Multithreading scenario cannot be realized in normal UNVR films, and elements between two shots, such as color, brightness, the main motion, the depth of main body, "are likely discontinuous" [8]. Fig. 2 and Fig. 3 non-panoramically display the scenes in *Clouds Over Sidra* from the same angle before and after the transition, showing that it is difficult to achieve seamless montage techniques comparable to those employed in traditional

films [6]. Aiming to enhance audience empathy, UNVR needs to gradually establish and accumulate this empathy through a series of thematically coherent montage shots. However, a lack of continuity in these shots can cause even emotionally powerful scenes to end up failing to naturally evoke the audience's innate empathy. However, this is not the only issue with using montage techniques in UNVR films due to discontinuity. The negative impact of discontinuous elements on subjective feelings has already been demonstrated in some studies. In VR, these types of elements may cause the audience to lose their focus or feel disoriented, leading to potential dizziness [8]. However, if UNVR use montage techniques with the intention to clearly emphasize humanitarian ideas and evoke empathy, it must make every effort to prevent the audience from confusion or dizziness.

4. External Authorship With Extra-Diegetic Voice-Over

The majority of UNVR films demonstrate issues widely existing in global by utilizing specific characters, events, and regions to enhance the authenticity of the subject matter. This is achieved through external authorship and extra-diegetic voice-over techniques, which lend a sense of credibility and authority to the narrative. Additionally, these techniques establish a closer connection between the audience and the narrator, who is often the protagonist of the story and a victim of natural or human-made disasters. Emotionally, extra-diegetic voice-over is beneficial, as it also imparts the audience with essential context and background information that may be challenging to convey solely through visual or dialogue elements. Traditional films can smoothly zoom in from a wide environment to focus on a small object, but this is difficult to achieve in VR. Capturing the audience's attention towards a particular feature of an object in the documentary scenes of VR imagery necessitates the audience's active attention. While subtitles can guide viewers in many VR films and games, utilizing the protagonist's extra-diegetic voice-over to direct attention or elucidate information behind the scenes. With more background information, the audience can naturally deepen their understanding of the protagonist's sorrowful experiences in UNVR, leading to greater empathy. In *Waves of Grace* [23], the VR scenes alone fail to convey the full extent of the Ebola epidemic's impact on Western Africa. However, when combined with Decontee Davis's prayers and narration, viewers gain a more profound comprehension of the epidemic's catastrophic effects. She recounts her feelings of helplessness as she lay in darkness after being diagnosed in August 2014, surrounded by the constant deaths of those around

her—a sense of despair that the dark image of this part cannot fully communicate on its own. The typical West African landscapes or buildings viewed in VR may not evoke empathy by themselves, but Davis's poignant tone as she says, "I hear again the voice of men walking and children playing," helps the audience understand that what might appear as ordinary scenes are, in fact, profoundly precious to Western Africans who have endured the epidemic. These extra-diegetic voice-overs, when paired with the VR imagery, more effectively achieve the purpose of "capturing a young woman's tale of love, loss, and rebirth amid the Ebola epidemic" [24]. By utilizing Decontee Davis's external authorship, viewers gain a deeper understanding of the kind-hearted Liberian woman's inner world and the true emotional impact of Ebola on the people, which in turn elicits empathy from the audience.

Vallance and Towndrow argued that *Clouds over Sidra* uses external authorship to express emotion or the vulnerabilities of sufferer such as Sidra, which "dilutes the storyliving concept", with the viewers' feelings of presence reduced by improper handling of the audience's positioning in many VR movies [25, 26]. Since the use of external authorship can hinder the maximum impact of achieving the desired effects of immersion and empathy, with UNVR films always utilizing external authorship rather than rendering the audience the experience with first-person perspective, UNVR has hardly taken full advantage of VR technology which especially benefits from its immersion experience when the audience can take part in the documentary stories in a first-person perspective.

Beyond the previously mentioned *perfect* coordination between the images and narration, which raises questions about documentary realism, Sidra's "infantile" voice and the fabricated English accent have also been criticized (the original narration was in Arabic but was overrun by English extra-diegetic voice-over with accent stereotypically associated with native Arabic speakers). The "flattening and standardizing" of the unique experiences of refugees from different regions and conflicts "creates a false sense of unity and universal experience among refugees, obscuring the differences and complexities of their individual lives and experiences" [27]. The original intent of UNVR was to better represent widespread disasters through specific events, but it has also been criticized for "abstracting their predicaments from specific political, historical, and cultural contexts," ultimately leading to the "silencing of refugees" [28]. Some typical techniques related to the extra-diegetic voice-over in UNVR films have also be questioned. The demonstration (in which the voice plays a crucial role) of typical refugee figures, the overemphasis on children (extra-diegetic voice-over throughout the movie is apparently childish) in *Clouds Over Sidra* have

also been criticized for "failing to examine the colonial and racial basis of 'the human' and ultimately affirming racial hierarchies" [6, 29].

5. Limitations of UNVR Films

5.1 Low Level of Immersion

Although head-up VR 3D renders viewers an "intensity of immersivity that has no comparison with other, weaker forms such as the two-dimensional computer screen, or the one-dimensional printed page" , UNVR films have not achieved the best immersive effect [30]. Researchers have found that the intensity of the audience's reaction to general virtual stimuli can be enhanced by virtual embodiment, and the immersive experience, as well as the embodied nature of VR, gives the audience a distinct sense of presence and control, allowing them to feel emotions and empathize more easily [31, 32]. There is no difficulty in seeing the significance of embodiment in enhancing the sense of immersion in VR. Considering Kilteni, Groten, and Slater's definition of the *sense of embodiment* as an "ensemble of sensations that arise in conjunction with being inside, having, and controlling a body, especially in relation to VR applications," it becomes obvious that to enhance the effect of embodiment in VR, two crucial elements are indispensable: the audience's sense of presence in the VR world and their active engagement with it, both of which remain unattained by UNVR [12].

Merely placing the audience into a VR environment is not enough to make them feel completely as if they are in the real world. As Rueda and Lara indicated, when people feel present but are actually immersed in VR, their reactions are the same as in the real world [33]. However, making people feel present is a challenging aspect for documentary films, and the limitations of immersion in UNVR films are due, in part, to the absence of a strong sense of embodiment among the audience. Using *Ground Beneath Her* as an example, Sabita narrates the impact of the 7.8 magnitude earthquake on her surroundings and life [18]. The film only includes scenes of the natural and cultural environment of the valley in Nepal where Sabita lives, along with folk music mixed into the background. Rather than resembling an interaction between people who presence in the same space, Sabita's narration is more like a common monologue in a diary. Meanwhile, the a range of scenes in the film, set in different crude rooms or at various locations in the valley, fails to successfully suggest the presence of another person—the audience—in this space. This leaves viewers with the impression that, aside from having a broader perspective while watching the documentary, the experience is no different from that of a two-dimensional medium—they cannot feel their presence in the story nor experience a deeper sense of immersion. Sabita's narration does not include any potentially dialogue that could make the audience fee, leaving viewers with the impression that, aside from having a broader perspective on watching this documentary, the experience is no different from that of a two-dimensional medium-they cannot feel their presence in the story nor experience a deeper sense of immersion. In order to enhance the immersive effect and emotional impact, most VR films incorporate interactive elements. The design of narrative interaction nodes enhances users' embodied cognition, thereby enriching their immersive experience [34]. Through interactive design, the audience is no longer passive observers but active participants in the story. This active involvement allows them to truly immerse themselves in the narrative and leads to deeper emotional engagement. However, none of the existing UNVR films have integrated interactive elements yet, which somewhat diminishes the immersion experience in UNVR films. Apart from that, the sense of embodiment is unavoidably entangled with the cinematic perspective [35]. UNVR also suffers from a reduced sense of intimacy, embodiment, and immersion due to its cinematic perspective not being in the first person, which has been discussed thoroughly in the part 4 of this paper.

5.2 Empathy Elicited by VR and Its Limitations

Milk claimed that through VR "we become more empathetic, more connected, and ultimately, we become more human" in a 2015 TED presentation of *Clouds Over Sidra* [11]. Increasing attention if UNVR in humanitarian causes as well as VR realms has sparked further research on whether VR can *authentically* enhance empathy. Schutte and Stilinović showed participants a documentary about a girl living in a refugee camp [36]. Compared to the control group watching a 2D format, participants who watched the documentary in VR experienced "greater engagement and a higher level of empathy for the refugee girl." This finding was also confirmed by Nurlatifah and Sitharan, who also discovered that *Clouds Over Sidra* successfully enhanced viewers' knowledge and deep understanding of refugees "under all circumstances," and fostered greater engagement and empathy, particularly thanks to the its the VR techniques used in *Clouds Over Sidra* [37]. Researchers have also found that VR can deepen people's understanding of the struggles faced by documentary characters and encourage more altruistic actions in real life [37, 38]. However, some researchers have raised concerns about VR's ability to generate long-term empathy. Phillips, Jarden, and Bowles found that though VR experiences can "temporarily increase" viewers' empathy, this "one-time

intervention does not appear to produce a lasting change" [39]. When researchers examined the relationship between VR, empathy, and sympathy with political ideology as a moderator, they found that while sympathy could be increased, empathy did not hold [40]. Duration of effects after using VR devices and peoples' political ideologies pose challenges for UNVR in successfully evoking empathic responses and driving behavioral changes.

While VR technology has the potential to be a powerful tool for eliciting empathy, the nature of the empathy it evokes has been questioned. As Western societies are encouraged to consider refugees as "just like us" in an attempt to foster empathy, El-Enany challenges the concept of "false equivalence":

"Absent from the #CouldBeMyChild hashtag is an understanding of the specificity of colonial histories and present imperial wars and the way in which these structurally determine positions of power and privilege as between white people and people of colour" [41].

If it oversimplifies the refugee experience and disregards the specific contexts from which refugees originate, while evoking empathy, it may also potentially exacerbating underlying issues, as El-Enany argues that this approach avoids addressing certain issues. Therefore, when dealing with refugee issues that have a complex political background, UNVR should not only continue to influence the audience on an emotional level, as it does now, but also better fulfill its humanitarian and impartial stance on a rational level by providing historical context.

6. Conclusion

By analyzing the typical narrative features in UNVR films—documentary realism, montage, external authorship, and extra-diegetic voice-over—this paper examined the positive effects of these techniques in enhancing the audience's comprehension of the story and their inclination towards empathy, as well as the unresolved issues caused by limitations of these techniques. This paper also analyzed the limitations of UNVR in achieving embodiment through VR technology and raised critical questions regarding its ultimate goal of evoking empathy, including the appropriateness of eliciting empathy in this way. These in-depth explorations lead to the conclusion that UNVR deserves careful consideration: given its success in fostering empathy and promoting humanitarianism, as well as its potential for more profound impact, it should not be underestimated; however, considering the existing narrative and embodiment challenges, it has not yet fully met expectations.

Future work should aim to identify specific solutions on how to make breakthroughs in narrative techniques to better support more immersive effects in UNVR films and their humanitarian goals. Further exploration of potential solutions to the limitations of UNVR in eliciting empathy should also address the criticisms regarding its insufficient emphasis on the political context, while enhancing the audience's understanding of refugees.

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