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Playfulness, Realism and Authenticity in Cultural Presence: A Case Study of Virtual Heritage Players

RESEARCH

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ABSTRACT

The intersection of virtual reality (VR) and cultural heritage, also described as Virtual Heritage (VH), is an example of a disciplinary 'cross-fertilization' between arts and technologies (Roussou, 2007: 225). Technological advances in communication systems have accelerated the advent of new aesthetic experiences. Digital technology has created a novel perceptual dimension for the viewers of VH that Erik Champion calls cultural presence (2006). The idea of immersive art goes back to the classical world, and it now reappears in the immersion strategies of today's virtual art (Grau, 2003: 25). In order to investigate the aesthetic effects of cultural presence for the player in VH, this research takes *神游敦煌 (Shenyou Dunhuang)* 2018, a popular VH project from HTC Steam VR platform as a case study. The 敦煌莫高窟 (Dunhuang Mogao Grottoes) were included in the 'World Cultural Heritage' list by United Nations Educational, Scientific and Cultural Organization (UNESCO) as representative achievements of Buddhist art in ancient China. This research draws on data elicited through focus group discussion after the group's members had experienced the VH. The researcher organised a group of participants playing Shenyou Dunhuang to discuss their aesthetic experience. The discussion text was encoded via Nvivo software. The aesthetic experience of the participants is examined and discussed through the frame of three sub-concepts: playfulness, realism and authenticity. In so doing this research discusses how the ambivalence of immersion and distance in art reception influences players' cultural presence in VH.

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INTRODUCTION

This research takes end user data from *神游敦煌 (Shenyou Dunhuang) 2018*, presented by National Taiwan University imLab and Dunhuang Academy, a popular VH game from HTC Steam platform. The design of *Shenyou Dunhuang* intends to contribute to its user's understanding of cultural heritage through an interactive experience of the virtual artefacts and displays in a virtual environment (VE) (Han et al., 2019). The 敦煌莫高窟 (Dunhuang Mogao Grottoes) are included in UNESCO's 'World Cultural Heritage' list and the grottoes have become an icon of traditional Buddhism culture in China. The grottoes are also a public tourism destination in the western part of China, which like much other cultural heritage, faces problems with protection and preservation. As an iconic cultural heritage site in China, Dunhuang has appeared in many digitised projects.

With the development of information communication technology (ICT) and the upcoming commercial 5G technology, VR is quickly becoming a serious means for preserving and rejuvenating cultural heritage. Maria Roussou believes that virtual heritage is, "the intersection of virtual reality (VR) and cultural heritage. Also coined as virtual heritage (VH), [VH] is an example of a 'cross-fertilization' of disciplines" (2007: 225). Technological advances have accelerated the advent of new aesthetics, as "thanks to the new technologies people's perceptual experience of our existing senses are expanded and 'presence' are created as novel perceptual dimensions" (Jeon and Fishwick, 2017). Stone and Ojika proposed that the artistic and cultural significance of VH is

> the use of computer-based interactive technologies to record, preserve, or recreate artefacts, sites and actors of historic, artistic, religious, and cultural significance and to deliver the results openly to a global audience in such a way as to provide formative educational experiences through electronic manipulations of time and space (2000: 73–74).

However, even though galleries, libraries, archives and museums (the so-called GLAM sectors) and many companies are riding the wave of VR technology, it is still not clear how much these VR projects influence the audiences' cultural experience of VH projects. There is an increasing drive towards finding more systematic ways of embedding evaluation into institutional art programs and funded projects to understand audiences' feedback. Some attention is paid to surveying audience's attitudes towards content or experience, but this is normally at the level of satisfaction ratings. According to Candy and Ferguson, because the primary purpose of surveys is usually to measure impact and thereby justify funding, there is not much room for the finer points of audience response or indeed, practitioner learning (2014: 191). As Merlin Donald has pointed out, art is an activity intended to influence the mind of an audience (2006: 4), and the theory of art reception provides a lens to examine audience's cultural experience in VH. In a VE, the audience's role is not only as a passive recipient but also as a positive player. Hence, the main goal of this research is to investigate the effects of cultural presence on the process of art reception in VH from an active player perspective.

PRESENCE AND CULTURAL PRESENCE

People are usually considered 'present' in an immersive VR when they report a sensation of being in the virtual world (Schuemie et al., 2001: 183–201). Presence is related to two kinds of experience: 'first order' mediated experience and 'second order' mediated experience (Lombard, 2000). First order mediated experience is the normal, or natural way we perceive the physical world and provides a subjective sensation of being present in our environment. Second order mediated experience is not only mediated by the human senses but also by technology. From an ecological view, both technology and people play a role in creating presence in a virtual environment. Heidegger suggests using a tool precludes the user from possessing a stable representation of the tool (1990), because the user is no longer aware of the tool itself but only of the usefulness the tool has in whatever task is performed. In the VE an audience's experience is mediated by technology, and it temporarily forgets the existence of technology (ISPR, 2000). James Gibson describes affordance as the possibilities or opportunities that the environment offers or affords its inhabitants. At the same time, a particular affordance is also dependent on the dialogic outcome between the inhabitants and their environment (2014).

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Presence is not just how real the user feels the VE is, but also how logical the actions are allowed within the depicted context (i.e. the cultural framework). Riva and Mantovani promote the concepts of cultural presence that link the idea of culture and presence together, and provide a socio-cultural approach of three key concepts: presence, communication and cooperation which link to the users experience in VR (2000: 32–38).

Erik Champion suggests a definition for cultural presence that 'the feeling of being in the presence of a similar or distinctly different cultural belief system' (2010: 179). He also applies the concept of cultural presence in the field of VH to argue for the autonomous value of cultural presence in addition to the existing relationship between social presence and cultural presence. Social presence and cultural presence are both relevant to collaboration/communication/sharing, but the aim of cultural presence is not just communicative (in fact over-communication in presence may impact negatively upon the quality of learning in VH) (Tost and Champion, 2007). An important aspect of the multiple values of cultural presence is the feeling of being 'there' and 'then' (ibid). Their research on cultural presence has focussed on the evaluation of cultural learning and neglected the aesthetic and artistic value of cultural presence, but the VH experience also relates to artistic, religious and cultural significance (Stone and Ojika, 2000). Cultural presence is a useful concept when used to evaluate the aesthetic experience in VH.

IMMERSION AND DISTANCE IN ART RECEPTION

In the aesthetic illusions stage of art reception, there is a pleasurable mental state that frequently emerges during the reception of representations (i.e. texts, artefacts or performances) (Wolf et al., 2013: 51). Werner Wolf also suggests that the ambivalence of aesthetic illusion is a combination of immersion and distance in art reception (ibid: 16). Aesthetic illusion is located on a scale between the poles of total rational distance and complete (and predominantly emotional) imaginative immersion in the represented or constructed world (ibid). The idea of VR goes back at least as far as the classical world (Grau, 2003: 25), and it now reappears in the immersion strategies of present-day virtual arts. Immersive VR dissolves the interface of artworks to achieve more naturalistic and intuitive designs. Based on an illusion, the elements of a message are developed through immersive visualization that aims at influencing the audience's mind with regard to contributing to cultural understanding or even achieving a political purpose (ibid: 101).

Aesthetic illusion is an effective way to evaluate audience reception, because aesthetic illusion can satisfy people's various desires without serious consequences such as addiction. Through representations of experience as if in real life, an artefact can trigger aesthetic illusions in the recipient. Emotionality may be conducive to aesthetic illusion and can be symptomatic of its existence and Wolf notes that 'aesthetic illusion thus elicits quasi-experiences' (2013: 12).

In the theory of 'the antinomy of distance' (Bullough, 1912), there are two powers in aesthetic experience: one power pulls people toward aesthetic objects, and the other power pushes people away from aesthetic objects. The interaction of these two forces ultimately creates an aesthetic experience. As Theodor Adorno expresses it, 'distance is a phenomenon of works of art that transcends their mere existence; their absolute proximity would mean their absolute integration' (1997: 460). Distance makes recipients think of an artefact as a work of art, as a 'quasi-experience' rather than real life experience itself. As a rational pole in art reception (another pole is immersion) distance always comprises the possibility of attaining an overall view, of understanding organization, structure, and function, and achieving a critical analysis (Grau, 2003).

ACTIVE PLAYER STUDIES ON VIRTUAL HERITAGE

VR not only provides an audience with a psychological sense of being there, but also an interactive experience. The model of a passive, attentive consumer is thus replaced with a model that erodes the distinction between artist and consumer/audience (Simon, 2014: 63). Gamification becomes an important strategy for VH. The role of audiences in VH becomes one of players actively interacting with the VEs. Player studies can be traced back to audience studies which can be further separated into two areas — the active media perspective (the media has an effect) and the active player perspective (users make meanings). The active media perspective mostly starts from behaviourism and experimental psychology, which measures attitudes and behavioural change among the audience by use of quantitative methods. Theoretical resources

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include Sigmund Freud's catharsis theory (1954), George Gerbner's cultivation theory (2002), Albert Bandura's social learning theory (1978) and Dolf Zillmann' s arousal theory (1991).

By contrast, the studies of active players come from the fields of anthropology, ethnography and cultural studies, which are originally literary and art theories including Terry Eagleton's 'Readers Liberation Movement' (1982) and Wolfgang Iser's reception aesthetics theory (1980). Such studies emphasize an audience's subjective initiative and artistic experience, rather than the text of the artwork or the artist's intention. This theoretical approach is fundamentally different from the active media perspective, which focuses more on the motivation of participation, identity and emotional experience. Tost and Champion attempt to verify the validity of the concept of cultural presence in VH in a quantitative way, but they point out a qualitative framework is also needed (2007). Active audience perspective has been widely used in the research of presence and VR. Freeman and Avons used focus groups in this case discussing people's experience while watching stereoscopic TV. Results show that non-experts describe sensations of presence and relate presence to involvement, realism, and naturalness (2000). Carrie Heeter applied a similar approach, questioning users after they had used immersive VEs (1992).

METHODOLOGY

This research employs focus group to explore the previously identified VH project *Shenyou Dunhuang*. This project allows users to explore Mogao Cave No. 61. Viewers can see a digital restoration of the deteriorated murals and the ruined statues. For example, the Manjushri statue in Mogao Cave No. 61 is missing but now can be digitally reconstructed and re-appears vividly in the virtual cave. Also, the viewer can see animations on the walls, which illustrate the stories behind the murals, such as 'Mount Wutai' and 'Hua Yan Jing Bian'.

The data of this research is collected from the focus groups. The researcher organised two focus groups (including one pilot focus group) on 14th May 2019 at VIVE VR Club in Shenzhen (***Figure 1***). Participants knew about immersive media but were to experience this project for the first time. The group included 9 people (excluding the pilot study). The participants already had experience or interests in analysing and expressing viewpoints about the topic area, which allowed for informed discussion in the focus group.

Figure 1 Focus group research site. Photo: Xinyang Zhao.

During the process of research, the participants immersed themselves in the HTC VIVE headset exploring the virtual Dunhuang No.61 cave in turn. The researcher endeavoured not to influence the participants unless in providing necessary help during the experience process. Any participants were obliged to stay in the VEs for approximately 15 minutes. After the VR experience, the researcher conducted a sub-structure discussion in the focus group. Lastly, the coding process of the discussion materials was finished with Nvivo software.

During the process of open coding, the researcher analysed the focus group discussion, using vivo coding (Manning, 2017), such as 'play' (i.e. 'the feeling was kind of like that I was using a machine or I was playing a game'), 'sacredness'(i.e. 'I feel as if it is blasphemy against the

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sacredness of the Buddha.'), 'excitement' (i.e. 'the first time and second time I felt a little bit scared and then it made me excited'); and conceptualized coding, such as 'presence' (i.e. 'there is an immersive feeling'), 'authenticity' ('I think the real cave has sounds and specific smells'). Then, according the theory framework of cultural presence and aesthetic illusions, these codes are conceptualized again, such as from 'play' to 'playfulness' and from 'scaredness' to 'distance'. Meanwhile, art reception was linked with three differing characterisations of cultural presence establishing these conceptualized codes; 'aesthetic immersion: playfulness as cultural presence', 'aesthetic understanding: realism in cultural presence' and 'aesthetic distance: authenticity in cultural presence'.

DISCUSSION

AESTHETIC IMMERSION: PLAYFULNESS AS CULTURAL PRESENCE

From the perspective of the origin of art, one hypothesis is that art is a form of playfulness. Marx Weber diagnosed the previous epoch—the industrial age—as one disenchanted with the world where play was separated from work, and where people were not inclined to play anymore (1946); Homo Ludens had evolved into Homo Sapiens. However, today the desire for play seems to have returned through the integration of art, technology and science (Jeon and Fishwick, 2017). VR provides more technological affordance for an audience to play in VEs. As to the creative practice of VH, the new experience of presence evokes the audience's desire for play especially at the beginning stage of art reception. In the focus group, there are several discussions about playfulness in cultural presence:

> Participant 1: It did this. Even if I felt a little bit scared at the first and second time when I tried to move, it then created a sense of excitement, yes, then I deliberately flew up to the top of the dorm.
>
> Participant 2: It was more like a gameplay at that moment. It felt like the god perspective, like what you were talking about. It is more exciting and may satisfy some people's preferences.
>
> Participant 3: For example, I didn't know how to play this VR before. When I went in, I felt panic, and I feel that it has a kind of religious mystery. I felt insecure. At the beginning, I was a little bit flustered, and then it slowly started to work on me.
>
> Participant 4: The feeling was kind of like that I was using a machine or I was playing a game, but the game was lacking in good interaction. It didn't tell me specifically what this thing is for and how to play at next step.

Many participants mentioned that they felt like they were playing a game. Huizinga's definition of play is "[...] a free activity standing quite consciously outside 'ordinary' life as being 'not serious', but at the same time absorbing the player intensely and utterly" (1955: 13). The idea of the 'magical circle' as 'rules of play' and employed magic circle as the core concept for game design (1999: 2–7). Technical affordance makes the magical circle of play returning in the process of art reception in which the normal rules and reality of the world are suspended and replaced by the artificial reality of a game world (Jeon and Fishwick, 2017). Affordance in VH makes up novel rules for players which is based on, but then develops beyond, the reality of the world. The viewers can feel the first presence naturally in the real site of the cultural heritage. However, VH not only generates the quasi-experience of the real immersive experience, but also makes the audience experience that which is not easily accomplished in the real world, such as zooming into the details of murals infinitely and flying to the ceiling of the dorm. Inside the physical structure, it is difficult for viewers to have a close-up view of the caisson ceiling or the murals in higher locations because of height restrictions (Han et al., 2019: 41). The affordance in a real environment and a virtual environment are different. In a real environment, the aesthetic illusion is aroused from a panoramic mural on the internal walls of the cave, the lighting, the peculiar smell, vivid colour and even the ambient temperature. In VE the affordance provides specific spatial narrative and an interactive experience which allows an audience to be aware they are playing a game. Further on, participants use their emotional experience to describe their feelings of playing. Playfulness in VH brings about a more intense emotional involvement with the game

which is a more important facet of the state of mind engagement with the game. As mentioned previously, emotionality can be conducive to aesthetic illusion and is symptomatic of illusions' existence (Wolf et al., 2013). Players in VH are not only emotionally stimulated from play, but also bring emotionality back into playfulness to achieve a pleasurable mental state during art reception. Some participants related their feeling of being scared in the immersive environment with their awe of the Buddha. Plus, through their interaction with the murals and the sculptures of Buddha a feeling of cultural presence was generated, which also strengthened the immersive, emotive pole of aesthetic illusion. Playfulness as immersion in aesthetic illusion reduced the mental distance between players and the artefact. However, some participants mentioned that because of the project's lack of navigational guidance, sometimes they did not know what to do and missed opportunities in exploring the VE, resulting in a negative influence on their personal art reception. Players have active intentions to explore in VH, while their intentions are ruled by the magical circle. Playfulness is created out from the ambivalence between player's intention to explore and the rules of games.

AESTHETIC UNDERSTANDING: REALISM IN CULTURAL PRESENCE

Cultural heritage (such as the Dunhuang Mogao grottoes) not only has cultural value, but also aesthetic value. Each cave's murals and sculpture have plenty of background cultural details and historical stories; it is important to use rationality to understand both cultural and aesthetic significance. Players use their rationality to understand artefacts, but both rationality and emotionality are involved in aesthetic.

> Participant 1: It is more convenient than actually seeing the caves on site, and it is clearer…Even though there is no time limitation, going to the real cave to see it is not convenient. The real cave is more than ten meters high. Even if [one] raises an electric torch to view, it is not clear … VR is clearer.
>
> Participant 2: Even though sometimes it is very dark in the real site of Dunhuang Mogao grottoes, it is impossible to use an electric torch. However, for this project, [it is] not only possible to see the dark side of the cave, but also I can carefully look at some of its details… through clicking the yellow box to move closer to the mural.
>
> Participant 3: He (the designer) should consult some of the better experts in this area to restore the authenticity. It is inaccurate. It represents the cave 500 years ago and restores the colour of one thousand and one hundred years ago, when it was the period of Five Dynasties in China. It is not very precise in this aspect. I think it is not created by experts in cultural relics restoration, or archaeology.

Some participants compared the VR project with the real site of Dunhuang Mogao grottoes. Different from the real site of the cultural heritage, the time and space dimensions are dissolved in VH. VH allows more capacity for players to better understand the information conveyed by the artefact; such as being able to view for a longer time and to see the dark interior of the cave, so from this perspective the accuracy of the information becomes more important. Moreover, some participants who have been to Dunhuang Mogao grottoes also questioned the accuracy of the project. For example, according to the design of the project, the illuminated part of the mural is restored to its condition 500 years ago by default; triggering the controller restores the mural to as it was 1000 years ago (Han et al., 2019: 48). However, one of the participants who learnt this about this cave from other documentaries questioned the accuracy of restored colours.

Suspending disbelief is one of the key aspects of narrative engagement and perhaps the most central goal of an immersive virtual environment. However, an increase in realism might paradoxically lead to a decrease in believability, because players use their 'recognition of reality' to detect incongruities (Wages et al., 2004). When participants identify incorrect information in VE, realism in cultural presence is decreased.

> Participant 4: Because I have seen the real one, I know very well that this is virtual. Then I also looked at its pixels and look at its resolution. Then I tended to look at its technology and see how high the reduction is. I didn't feel the feeling of being completely immersed. I just want to compare the differences.

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Realism in VH is not the real world itself, but refers to whether the virtual environment provides the experience expected by the user, both consciously and unconsciously (Gilbert, 2016). For the players of VH, reality is represented by the artists/designers. VH is the agent to communicate between players and artist/designer, which is using an experience (of the player) to understand another experience (from artist/designer). On the one hand, the players have their own expectations and motivations for cultural heritage. Even though realism strengthens the feeling of presence in VH, it may also divert the player's attention towards the incongruities of the information, rather than understanding the cultural and aesthetic meaning of the cultural heritage. Moreover, cultural presence is not only the feeling of being real, but also relates to understanding the people, story and history behind the cultural heritage. The preoccupation with representation is one of the most fascinating dimensions of virtual heritage (Roussou, 2007: 227). It is the artist's task to find ways to represent the realities behind the objects of cultural heritage to help recipients understand the cultural and aesthetic meaning of cultural heritage.

AESTHETIC DISTANCE: AUTHENTICITY IN CULTURAL PRESENCE

'Authenticity' is a particular attribute of cultural heritage. The display of cultural heritage, whether it is tangible or intangible cultural heritage, should be considered for its uniqueness. This is also an important reason as to why many people are consistently curious and concerned about cultural heritage. According to Lionel Trilling the provenance of the word authenticity '... is in the museum, where persons expert in such matters test whether objects of art (and by extension, ethnographic objects) are what they appear to be or are claimed to be, and therefore ... worth the admiration they are being given' (2009: 93). However, there is a paradox of authenticity for VH: even though people already know their experience is fake before immersing themselves into VE, they still expect authenticity in VH. The authenticity in VH is not as simple as realism, which adds an aesthetic layer onto its formal representation through its smell, its 'patina' and 'aura'. Erik Cohen argues that new cultural developments may also acquire the 'patina' of authenticity over time - a process designated at 'emergent authenticity' (1988). In different cultural contexts, the reality of authenticity is questioned. Richard Peterson promoted the concept of fabricating authenticity (2013). He believes that authenticity can be recreated. Moreover, Hansen and Mossberg argue that end users prefer to look for reliable and unique cultural elements from immersive experience, rather than investigate whether the culture is fabricated (2013). These points emerged in discussion as follows:

> Participant 1: [The VH experience] should give us a kind of feeling like inner reverence, a kind of moving. Maybe not just in visual way, but also the atmosphere of the space, the sounds, and the smell, such as burning a musk incense. Of course, I am talking about a very ideal state. But if we really want to achieve this ideal state, a big improvement is still needed.
>
> Participant 2: Because I have been to Dunhuang before, comparing the two, I feel that through technical means, this cave gives us a feeling of being too bright and colourful. Because in the real cave, it has the traces of history, and it is more mottled.

Distance is the rational pole of aesthetic illusion, which makes recipients think of works as art. The feeling of 'presence' when immersed in aesthetic illusion dissolves aesthetic distance. However, in the representation of reality, the feeling of presence also strengthens the realism of cultural heritage in VH. Aesthetic distance is extracted from the authenticity of cultural heritage. Some participants discussed that the faded colour, the dim light and the 'patina' gave them feelings of reverence and sacredness in VH. However, as I have discussed, aesthetic immersion in VH is gained not only from the feeling of presence, but also from playfulness. In VH, the audiences are both viewers and players. It is playfulness which dissolves aesthetic distance in VH. As one participant described,

> Participant 3: I was thinking in the physical scene, of standing there to pay my respects and worship. I was feeling that I am very small compared with the Buddha. But it (Shenyou Dunhuang) can't give me this feeling. I can touch or look at it closely. I feel as if it is blasphemy against the sacredness of the Buddha. I don't think it is good.

Dunhuang is at the heart of Buddhist cultural heritage in China. It is a representative of Buddhist culture and art and also a sacred place for Chinese Buddhism, which has its own religious

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meaning, cultural value and artistic mystique. Even though the participants had different motivations before experiencing this project, some were just hoping to learn knowledge, some were hoping to satisfy their curiosity, many of them already had a cultural and aesthetic expectation for this project which can be understand as the expectation of authenticity. Walter Benjamin discussed the impact of mechanical reproduction on artistic value. He argued that the original artwork has a certain value which he called its 'aura'. Authenticity is one of the significant conditions for aura, but mechanical duplication dissolved authenticity (Benjamin 2008). Participants described VH as a gameplay experience reinforced through an experience of technological 'shock'. VH fabricates authenticity through building cultural presence. However, the experience of playfulness brought about by digital technology also eliminates the authoritative authenticity of cultural heritage.

CONCLUSION

This research has presented some subjective audience interpretations, avoiding behavioural or experimental methods. The audience's experience in art reception was chosen as the coding basis to lead the research topic. This research classified three attributes, playfulness, realism and authenticity in cultural presence and framed them from the perspective of art reception: aesthetic immersion, aesthetic understanding and aesthetic distance, attempting to establish an aesthetic link with cultural presence in the VR example of *Shenyou Dunhuang*.

Nicholas Negroponte considered that VR 'can make the artificial as realistic as, and even more realistic than, the real' (1995: 116). However, making VR feel real is not the only answer; immersion and distance in art reception are combined in the ambivalence of aesthetic illusion. In the integration of VR and cultural heritage, ambivalence becomes the oxymoron of reality and virtuality. VH is the communicating agent of two cultural experiences. On one hand, artists use their cultural and aesthetic understanding to represent cultural heritage to an audience. Further on in the process audiences bring their own expectations and intentions. What VH emphasizes is not just a realistic recreation of cultural heritage, but also through VE lets the audience achieve a basic pleasurable mental state — an aesthetic illusion. From the above discussions, an audience desire for cultural presence plays a significant role in aesthetic illusions. The balance between the feeling of immersion brought by playfulness and the sense of distance from the authenticity of cultural heritage itself creates new possibilities for achieving rich audience aesthetic experience.

The above-mentioned case study shows the transformation of VR into a technology viable for cultural heritage, no matter what the creative intention of VH and the experience of the audience might be. However, this also highlights the contradiction between the novel experience brought by technology and the audience's demand for a more authentic cultural experience. The challenges of VR are surmountable because of the technical improvements that have been made in recent years (Bailenson, 2018), so much contemporary research focusses on the improvement of audience experience from the perspective of technological implement. However, cultural heritage sites like Dunhuang Mogao grottoes are established cultural treasures of human civilization and already have their own authentic aesthetic significance. On the one hand, the interactive, immersive and game-like experience brought by VR has changed the role of audience from a viewer to a player, further dispelling the original sense of distance from the cultural heritage, making the 'aura' of the artefact disappear. On the other hand, unlike virtual art that relies more on the imagination and creation of artists, the creation of VH also depends on a deeper understanding and re-creation of an existing cultural heritage. Thus, the audience also has stricter requirements for the authenticity of VH, because, ultimately, the audience has a frame of reference — the real artefact itself in the physical site, or recorded intangible heritage.

ETHICS AND CONSENT

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number HRE2019–0092). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email *hrec@curtin.edu.au*.

COMPETING INTERESTS

The author has no competing interests to declare.

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