

School of Media, Creative Arts, and Social Inquiry

**Re-presenting China in Digital Immersive Art: Virtual Reality,
Imaginaries, and Cultural Presence**

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**This thesis is presented for the Degree of
Doctor of Philosophy
of
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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # HRE2019-0092

Signature:

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Keywords

Digital China

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Digital immersive art

Creative industries

Soft power

Abstract

In the present day, following the ideology of solutionism, there is an expectation that technology can solve any problem and even enhance art. Advanced by digital technology, art can influence people's minds through the internet, generate new aesthetics of three-dimensional interaction, and create avant-garde digital simulations to question the nature of society. However, the functions of art are also regulated by commercial and political mechanisms. Art facilitated by digital technology is widely used and sponsored by the commercial and political spheres especially in the People's Republic of China where the market economy is run on socialist conditions. China has been stereotypically perceived as a place of backwardness. However, the 21st century has been a transitional period for China to upgrade its power in terms of culture, economy, and reputation. Hence, this project explores how digital technology, in particular virtual reality (VR) and augmented reality (AR), is playing a role in China's rejuvenation, especially in relation to cultural displays, performances, and art exhibitions. The project examines how audiences, both in China and globally, are responding to 'Digital China', a concept describing how people's everyday lives in China are becoming superconnected by digital technology. Qualitative methodology with a multi-perspectival approach is applied to advance the aim of the project, which includes analysing the cultural content of VR/AR works as texts in terms of the dynamics of their production, and their reception among the studied audiences within and outside China. The research approach is carried out in overlapping phases of data collection that include semi-structured interviews with Chinese practitioners, close reading of the cultural content of digital immersive art (DIA) works, and focus group discussions with viewers of DIA. The study suggests that the sense of presence facilitated by VR/AR has implications for changing, augmenting, or alleviating human perceptions because it eliminates the distance of art. The sense of presence is a strategy to influence audiences' minds and VR/AR facilitates such a strategy. Findings from this study indicate that digital technology has been favoured by the government to upgrade China's image through art. It contributes to the projection of a new imaginary of China. Even if the foreign audiences included in this study were not persuaded, the domestic audiences nonetheless responded with some pride. Hence, behind the immersive spectacles linked with technological development, cultural presence, and imaginaries, we have been shown a controversial China, domestically and internationally, in this transitional period.

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CHAPTER 1

Introduction

1.1 Context of the study

On an otherwise ordinary weekend afternoon in October 2016, while I was out with some friends at a shopping plaza in Shenzhen, China, an art exhibition on the work of Pierre-Auguste Renoir, the renowned French impressionist artist, attracted our attention. What had surprised me was such a spacious art gallery hiding in a retail environment. The exhibition presented Renoir's masterpieces together with the photography-based artwork of his descendants. At the end of the gallery hall, a 3D-modelled interactive project displayed stories about Renoir's life via a virtual reality (VR) headset. The interactive video presented in the VR was cartoonish and low-resolution, with occasionally dizzying moments. After the viewing, I had a talk with the staff in the gallery. This immersive project was created by a Chinese team. Even though the project was not well-polished, as admitted by the staff, they had hoped VR could help viewers learn more about the artist and attract younger visitors. Later, I realised that behind the awkward immersive experience in 2016 was an innovative practice in creative industries directed by policy, boosted by entrepreneurs, and engaged with many spectators like me. During my doctoral studies, I subsequently found many similar digital and immersive art projects fostered by 'Digital China', a government initiative creating capital inflows and advantaging developments in the manufacturing sector.

In 2020, after I have finished data collection in China and returned to Perth, COVID-19 was spreading globally – people were quarantined at home and public activities were suspended in most countries. When I realized I would be isolated at home for several weeks, I bought my first VR headset, the Oculus Quest. I hoped VR could temporarily help me escape the abnormal life during the pandemic and believed that there would be greater demand for this kind of technology because of this. It turns out that I was right. The Oculus Quest was sold out in many regions, and soon Oculus released the Quest 2, a more affordable and better-performing all-in-one VR headset. The pandemic appears to have made the world more digital. After all, as the technology columnist Kiven Roose (2020) said, 'now, more than

ever, people could really do with an escape from reality'. Moreover, in the era of COVID-19, anti-Asian sentiment is resurrected, and Sino-US relations continue to be tense. This historical juncture, a moment in human history, urges me to further consider about the project – can VR facilitate a more 'human' interaction with art when borders are slammed shut and traditional art museums have been closed? Can art, as the instrument influencing people's minds (Donald, 2006), be mediated by digital technology to against the resurrection of anti-Asian/China sentiment in the era of COVID-19?

China, as many other countries, applies government planning and policy models to direct the innovative systems of cultural and creative industries (Hartley, 2021; Keane, 2013). In 2016, the Chinese central government mandated the term 'digital' into the cultural and creative industries and proposed the concept of 'digital creative industries' ('数字创意产业'). The concept of digital creative industries was first promoted in *2016 China in the Report on Government Work (2016 年中国政府报告)* (Li, 2016), which highlighted the significance of digital technology in the creative industries. Soon after, China's State Council (2016) issued the 13th Five-Year National Development Plan of Strategic Emerging Industries, in which digital creative industries (including relevant equipment manufacturing and software development, digital and creative content creation, new media services, and services for content application) first became one of the five 'Strategic Emerging Industries'; for the 2020 outlook, the industrial scale was projected to reach about 8,000 billion RMB (about US\$1,000 billion) for advanced digital technology and the complete associated industrial chain. More recently, in 2021, China highlights 'Building Digital China'('建设数字中国') in the 14th Five-Year National Development Plan; the central government believes that digitalisation is an effective strategy to boost economic development and improve people's lifestyle (i.e., retail consumption, domestic life, tourism and leisure, and transportation) (Xinhua, 2021a).

At the industrial level, the government emphasised VR and augmented reality (AR) in the 13th and 14th Five-Year National Development Plans because the China considers them as 'flagship' digital technologies and offer the chance to upgrade China's manufacturing industries. In 2015, China had proposed the concept of 'Made in China 2025', which was closely integrated with the implementation of the policy in the 13th Five-Year National Development Plan related to digital creative industries (State Council, 2016). Present-day China wants to upgrade its manufacturing system to a more advanced level. As Li Keqiang (2015), China's Premier of the State Council, said, 'We still have to do the traditional MADE

IN CHINA, but the core of Made in China 2025 should be Chinese equipment'. China was the world's second-largest VR headsets market with revenue amounting to US\$364 million in 2018 and it had the world's most significant ownership of VR devices (PwC, 2019a), which is important to a country heavily reliant on manufacturing. The equipment manufacturing for 5G, artificial intelligence (AI), AR, and VR is considered part of Made in China 2025 by policymakers. AR and VR are media for producing or delivering digital content, and the hardware requires supply by advanced manufacturing. VR and AR are not isolated technologies. They link with other significant digital technologies, such as 5G and AI, which are also dependent on advanced manufacturing as their foundation. Some giant technological corporations in China have invested in VR businesses. In 2019, Huawei released its first VR headset – Huawei VR Glass. In 2021, ByteDance (the parent company of TikTok) acquired and wholly owned Pico, which is a VR hardware manufacturer in Shenzhen.

The emphasis on the 'digital' in creative industries reflects the functions of technology in the dynamics of the cultural system. The cultural system in China is a top-down cultural production machine oriented by the government and advanced by entrepreneurship. As a significant part of the cultural system, the creative industries seek a balance between public support for culture and the entrepreneurial spirit of the market (Flew, 2011). The digital creative industries are backed by the provision of government support. Tourism, leisure, and entertainment companies, as well as the museum sector, can benefit from policies such as tax deductions and special funding support. In doing so, 'Digital China' becomes a set of strategies to enhance the nation's 'Cultural Power' ('文化强国') (Keane & Chen, 2017). The report *Opinions on Further Inspiring the Potential of Culture and Tourism Consumption* issued by China's State Council highlighted that the new style of immersive experience-based cultural and tourism content is at the intersection of culture, tourism, and advanced digital technology (State Council, 2019). How to use digital technology to stimulate the consumption of cultural and tourism content has become an important task in building an innovative nation. Some funding that was previously available only to science and technology projects are now starting to support cultural and art projects involving the application of digital technology. For example, in 2016, in Ningbo, the Fantawild culture and technology conglomerate launched its Fantawild Oriental Heritage, an amusement park applying high technology to represent the canon of traditional Chinese literature and art. The CEO of the Fantawild conglomerate Shang Linlin (2019) stated at a forum in Shenzhen that *The Cowherd and the Weaver* (牛郎织女), one of the projects in the theme park, had received

special funding from the National Science and Technology Support Program (国家科技支撑计划). This special funding mainly addresses the needs of national economic and social development, focuses on solving major scientific and technological problems in economic and social development, and provides effective support for national economic and social development (MoST, 2015). *The Cowherd and the Weaver*, an immersive panoramic dome show which presents a traditional Chinese love story, is the first cultural project that has received the special funding; this is in recognition of Fantawild conglomerate's innovative practice in the field of digital creative industries, as proclaimed by its CEO Shang (2019).

More and more cultural and art projects are applying VR as an advanced digital technology, and this has become a part of China's 'cultural rejuvenation' ('文化复兴'). Cultural institutions in China have begun to explore the digitalisation of cultural heritage through VR technology. For instance, with the diffusion of VR in China's creative industries, digital art projects about the Mogao Caves can be displayed in different museums and even on online VR platforms. The Mogao Caves in Dunhuang was listed as a World Cultural Heritage site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1987, and it is now a public tourism destination in the western China. However, like many other cultural heritage sites, it is also facing the problem of protection and preservation. Therefore, Dunhuang Academy (the research institution for the Mogao Caves) digitalised the site – for example, high-resolution pictures of the Mogao Grottoes were created – and licensed them to technology companies, cultural institutions, and creative studios to produce immersive content, such as the immersive art exhibition *Mysterious Dunhuang* (2017) at the OCT Creative Exhibition Center in Shenzhen. Furthermore, Dunhuang Academy cooperated with the National Taiwan University to develop the virtual heritage (VH) project *Shenyou Dunhuang* (神游敦煌, lit. trans. *Wandering in Dunhuang*) (2018) on Steam VR which is an online VR content platform. As another example, the Palace Museum (the museum for China's Forbidden City) in Beijing has digitalised its museum collections as a new form of digital cultural content. In 2016, the Palace Museum curated a series of artistic projects involving digital technology in order to rejuvenate its old image. Opened in 2016, Duanmen Digital Hall (数字端门馆), which includes several immersive multi-media displays, allows visitors to interact with the cultural relics in the Forbidden City. Moreover, the Palace Museum converged the digital content with some popular cultural elements in China, such as 'meng' ('萌', lit. trans. 'sprout') which connotes 'cuteness', and 'guochao' ('国潮', lit. trans. 'national trend') which connotes 'the fashion of China'. Such a strategy has attracted more

younger Chinese visitors to the museum. According to 2018 statistics from the Palace Museum, 40% of the visitors were under 30 years old, 24% of the visitors were between 30–40 years old, and 17.5% of the visitors were in the 40–50 years old age group, which implies that younger audiences, especially those born post-1980s and '90s, have become the 'mainstream' visitors to the Palace Museum (Shi, 2018).

Cultural content consumed in China tends to be more digital than ever before (F. Li & Zhao, 2017). Advanced technologies are increasingly used in creative content industries (Abbasi et al., 2017), allowing digital and immersive content to become a significant part of cultural consumption. In 2015, China had its first digital immersive art exhibition, *Rain Room*, in the Shanghai Yude Art Museum. Subsequently, a series of digital immersive shows appeared in China's art exhibition spaces, such as *teamLab: Dance! Art Exhibition, Learn & Play! Future Park* (2017) at the OCT Creative Exhibition Center in Shenzhen, *Van Gogh Immersive Experience: Fantasy of the Inner World* (2019) in China's National Museum, and the previously mentioned *Mysterious Dunhuang* (2017) in Shenzhen. It is worth noting that these exhibitions are ticketed and attended by large numbers of visitors. For example, the immersive exhibition *teamLab: Dance! Art Exhibition, Learn & Play! Future Park* attracted more than 400,000 visitors (PIKAPIKA, 2019), and the price of the admission fee was around 200 RMB (US\$30) (teamLab, 2017). Moreover, audiences can view digital immersive content at home through the internet. During a period of renovations undertaken at the Hall of Mental Cultivation (养心殿) at the Forbidden City from 2015 to 2020, the Palace Museum launched the VGugong project on its official website, where audiences could view and interact with the 360-degree digitalised Hall of Mental Cultivation. As another example, Veer VR, an online VR content platform in China, provides over the top (OTT) service to the users of VR content such as 360-degree movies, interactive animation, and VR artworks. It supports multiple VR headsets, including Pico Neo 2, Oculus Rift, and HTC VIVE.

Between 2016 and 2019, when Covid-19 had not struck China's entertainment industry, interactive and immersive content became popularised as location-based entertainment (LBE), especially for younger audiences in China's first- and second-tier cities. According to iResearch (2018), a research organisation consulting on consumer behaviours, the younger generation in China born post-'80s and '90s accounted for more than 24.5% of cultural and entertainment consumption, which was higher than those born in the post-'60s and '70s generations. In 2017, the overall market for LBE reached a record 373.51 billion RMB (US\$53 billion) and boosted by the rise of the new generation, the overall scale of the LBE

market was expected to reach 490 billion RMB (US\$76 billion) in 2019 (iResearch, 2018). Furthermore, 69.4% of consumers believe that high technology such as VR and AR can improve their entertainment experience (iResearch, 2018). With the vast market opportunity and capacity for VR and AR technological development, a new form of industry, namely, immersive entertainment is being fostered in China. According to Illusion (2018), the first association of Chinese immersive entertainment, immersive art exhibitions, which are considered as immersive entertainment by the association, represent the main growth segment in LBE. With the commercialisation of immersive art exhibitions, digital immersive art thus becomes a product that is integrated with popular culture and the mass audience. For instance, in 2018, the immersive art exhibition *GameBox*, which integrated elements of video games, popular culture, and fashion brands, was launched at a shopping plaza in Shanghai. The art exhibition included the artists David O'Reilly and Fernando Ramallo's digital media art; one of the works in this exhibition allows visitors to play the popular mobile game *Monument Valley 2* through a VR device (Artron, 2018). Moreover, this exhibition not only partnered with branded retail products, such as smartphones, smart speakers, and wine, but also involved invited internet influencers and fashion magazines for advertising purposes. Unlike conventional art exhibitions in museums, *GameBox* (2018) was more like a cultural product for mass consumption. These cultural or entertainment products have, to some extent, made Chinese audiences more exposed to immersive digital media.

Finally, 'Digital China' is related to China's reputation, visibility, and acceptance in the world. At the international level, 'Digital China' is changing China's presence in the world from a 'copycat' country to a digital superpower (Keane & Chen, 2017). The copycat image initially associated with '*shanzhai*' ('山寨', lit. trans. 'mountain fastness') culture, which connotes copies and counterfeits, has been decried by authorities in China (Yang, 2015). In 2015, the city of Shenzhen, renowned equally for its *shanzhai* culture and complete hardware manufacturing industry, started a 'maker movement' to rebuild its brand as an innovative city in using high technology (Keane et al., 2018; Wen, 2017). As the Chinese scholar Jing Wang (2016, p. 47) writes, the 'triple shift' – from "made in China" to "created in China" and now to "making in China" is a sign that innovation is now a societal concern within China. China has relied heavily on low-end manufacturing, such as toys, clothing, and food processing, which has already been recognised by the world and perceived as a stereotype, but now China wants to change this reputation. How can China harness innovation? The answer would be technology. In the world, more and more Chinese brands associated with digital technology

are being recognised by consumers, such as TikTok (short-video social media), Huawei (smartphone brand) and HTC VIVE (VR headset brand). Such change in China's image was also presented in international mass events. For instance, unlike the closing ceremony of the 2004 Athens Olympic which focused on displaying Chinese history with traditional elements like red lanterns and jasmine, *Beijing 8-Minute Show* (北京 8 分钟) (2018) was China's handover performance art presentation at the 2018 PyeongChang Winter Olympic Games that emphasised the contemporary landscape in which Chinese people would welcome the world using advanced technology. The director of the show, Zhang Yimou, said, 'We made every second count during the eight short minutes to showcase a confident China not only for its profound 5,000-year-old history, but also the remarkable technological achievements the country has made today' (X. Sun, 2018).

1.2 Research questions

This project examines how digital technology is playing a role in China's rejuvenation, especially in relation to cultural displays, performances, and exhibitions; it examines how audiences, both in China and globally, are responding to 'Digital China'. In the 2008 Beijing Olympics opening ceremony, the renowned Chinese film director, Zhang Yimou, demonstrated China's cultural presence by utilising advanced technology to highlight China's 5000-year-old culture. The opening ceremony changed many viewers' minds about what Chinese culture was (Gong, 2012), and digital technology played a significant role in this (C. Chen et al., 2012). Since then, China has continued to highlight digital technology as a way to increase its people's confidence in Chinese culture and prove China's capability on the international stage.

I design the research questions to facilitate a nested research strategy focusing on how digital technology enables cultural presence from two perspectives. The first perspective of cultural presence is from the viewpoint of the nation, specifically the cultural presence of China in the world. There is a significant global presence of Chinese products and services today compared with a decade ago; for instance, electrical goods (i.e., Huawei and Lenovo), online platforms (i.e., TikTok and WeChat), Chinese art exhibitions, and ownership of cinema distribution (Keane et al., 2020). Regarding China's cultural soft power project, a key problem is that the viewer situated outside China already has an existing preconception of

China, positive or negative, and sometimes neutral; they stand at a distance and observe (Berger, 2008). John Berger (2008) argues that seeing is a political act, an historically constructed process. The reality of China for people living outside China is largely constructed by Western media (Keane et al., 2020). It is an imaginary that is at odds with the reality of China in the 21st century. The second use of cultural presence is specific to digital immersive art (henceforth DIA), which refers to 21st-century media art facilitated by digital technology. This use of cultural presence refers to how technology can create the impression that the viewer is immersed in the artwork, thus allowing the viewer a unique kind of virtual experience. Ideally, the distance between the viewer and the artist is collapsed. Art can act as a kind of illusion (Wolf, 2013). In virtual reality, viewers are temporally and spatially removed from their normal world of preconceptions (Grau, 2003).

The central question, then, is this:

Can the cultural presence of digital immersive art (DIA) overcome preconceived ideas that may exist amongst its audience and influence their perception of (the culture or politics of) China?

Answering this question involves identifying and examining the context of ‘Digital China’: specifically, factors that influence the functions of digital technology in China’s cultural system, a top-down mode of cultural production; and the aspirations for asserting China’s cultural presence in the world as made manifest in DIA works. This, in turn, leads to two questions that augment the central question:

Can DIA thus be used as a means of augmenting China’s cultural soft power? Can this change perceptions of China?

As a way of responding to these questions, this project analyses Chinese practitioners’ perceptions regarding the functions of DIA facilitated by VR/AR and the implications of those views. More broadly, the project also engages with understanding how domestic and international audiences perceive ‘Digital China’ through DIA works.

1.3 Why digital immersive art and China

DIA is a new form of art which is mediated by digital technology such as AR and VR. Art has traditionally had many roles and functions. The anthropologist Ellen Dissanayake (2015) lists the functions of art, ranging from ceremonial to attracting mates. Art has been used as display, adornment, and even spectacle. It is also the carrier of culture and ideological values (Acciaioli, 1985; Egbert, 1967). For the last 170 or so years, art has also had a specific social and political avant-garde function; that is, it raises questions about the nature of society in the hope of critiquing and potentially changing it. Arguably, this is addressed in some international contemporary artworks found in major art events such as the Venice Biennale and Manifesta (European Nomadic Biennial). For instance, the work by Jordan Wolfson, *Real Violence*, in the 2017 Whitney Biennial of American Art is a VR piece that depicts the artist beating a man to death with a baseball bat. The work considers the seductive spectacle of violence in digital immersive technologies (Kuo & Wolfson, 2017). Art had revolutionary aims in early modernist times, but this was erased by the market in the West and by the state control of art in the socialist bloc (Groys, 2008). It cannot be ignored that the functions of art are regulated by commercial and political mechanisms – as a commodity and as a tool of political propaganda (Groys, 2008). DIA is widely used and sponsored by commercial spheres and politics especially in China where the market economy runs on socialist circumstance. As I have discussed in the previous section, in China, VR and AR technologies are being used in commercial art exhibitions by entrepreneurs to attract more visitors and by the government at the Olympics to display China's new cultural image. DIA is no different in terms of being produced as a commodity and used as a tool of political propaganda. Hence, this project not only focuses on art itself, but also how digital technology augments the functions of art and how the mechanisms of production and reception regulate them.

DIA is the interface of digital technology and art. In the present day, there is the ideology of solutionism, or the expectation that technology can solve any problem. Thanks to ubiquitous technology, low-cost sensors, and easy-to-deploy microelectronics, it is possible to connect 'just about anything and everything to the internet' (Greengard, 2015, p. 32). At home, appliances have become 'smarter' to speak to and they can also listen in. Dating apps can alleviate people's loneliness. Information technology and now VR are considered as technological solutions and monopolised by entrepreneurs. For instance, in 2014, the internet giant Facebook acquired Oculus to augment its social media system, and in 2021 Facebook

changed its name to ‘Meta’, aiming to build a virtual world with VR technology on the internet. With regards to China, the scholars on China’s creative industries Michael Keane and Ying Chen (2019) employ the term ‘entrepreneurial solutionism’ to describe a proclivity to see digital technology as a solution to China’s social and economic problems and as a way to accomplish China’s cultural rejuvenation. However, the solutions to technological challenges are usually implemented through fierce struggle, which is a staged conflict between dominant monopolies and emergent expertise, whereby politics, law, and media have to rise up to the occasion and either resist or facilitate the changes (Morozov, 2013). Michael Keane et al. (2020) have taken a critical view of these changes in China. Keane and Chen (2019) believe that internet-centric ‘solutionists’ (Morozov, 2013) are typified by the leaders of China’s internet giants, such as Baidu, Tencent, and Alibaba; but China’s reversion to hard authoritarianism under Xi Jinping renders this description in terms of ‘Digital China’ problematic. Moreover, AR and VR, which are the flagship technologies in ‘Digital China’, are highlighted in DIA works (as mentioned in section 1.1). The *newness* of the technology is considered in this project as the means to upgrade China’s industrial structure, rejuvenate China’s culture, and influence audience perceptions. However, newness is a temporal concept. This is because ‘newness’ is a process of change, whereby new ideas (and new technology) are taken up socially and used (Hartley, 2021). The widening population tweaks, amends, and applies any given invention to suit their own horizons and purposes (Hutter, 2015; Mokyr, 2011). Therefore, this study evaluating the legitimacy of newness is required when considering the application of the given new technology or innovation. To this end, this project critically examines the functions of digital immersive technology (the newness) in both cultural and social terms within the context of ‘Digital China’. More specifically, drawing on empirical data, this study will provide an empirical analysis of how digital immersive technology (AR and VR) influences the audiences’ perceptions and China’s cultural rejuvenation through DIA.

The 21st century has been a transitional period for China to upgrade its power in terms of culture, economy, and image. However, the West has often viewed China as ‘backwards’ and as a communist nation that globally sits in stake contrast to the neoliberal, post-colonial countries (Hartley, 2022; Vukovich, 2013). As Edward Said has said in his seminal work *Orientalism* (1985) (originally published in 1978), the West produced the non-West as timeless, exotic, and backwards. In the book, Said shows how the idea of the Middle East as an exotic land full of scoundrels and terrorists is deeply rooted in the Western imagination.

He further argues that this caricatured cultural heritage consistently confuses many Europeans and Americans about the complexity and variety of the region. In this vein, the views about China or/and even Chinese people are often imagined by the West and the images of which are represented in art and literature of their respective periods precisely. For example, from 1920s to 2000s, Hollywood produced a series of motion-pictures about Dr. Fu Manchu, a supervillain. Fu Manchu is the representative of ‘yellow peril’, whose image builds the stereotype of Chinese men who are ugly, sinister, and cunning (Mayer, 2013). The imaginary East stands in prejudice. In other words, there has been a disconnect for over a hundred years: how the West imagines the East compared with the reality in the East. As Gregory Lee (2018, p. 3), a UK scholar on Chinese studies, argues, ‘the “China” we have created, that we have imagined, that we have dreamt up and of which we have dreamt – the China that frightened us as well as fascinated us – has slipped our grasp’.

China’s presence as digital power is rising globally (Keane et al., 2020). Moreover, Asia is recognised as an emerging powerhouse of digital technology in terms of its significant internet population and its diversity of cultures and geopolitics (Lim & Soriano, 2016). There are artworks curated in the West that acknowledge the technological prowess of China, but the discourse of these representations is not straightforward (see Chapter 6). Sometimes they tap into the fear of the other as per the framework of techno-orientalism. Techno-orientalism was applied to read the techno-racist stereotypes of Japan or Japanese in the 1980s in the context of Western fear and anxiety about Japan’s rise as a global technological power (Morley & Robins, 2002). The recent evolution of ‘yellow peril’ is its configuration through the lens of techno-orientalism, a framework that is primarily used to examine the explicitly fictional genres of novels, video games, and films (Roh et al., 2015).

This project tries to deploy orientalism in the current historical conjuncture wherein a resurgence of xenophobia has targeted those who look ‘Asian’ in the COVID-19 global pandemic (Siu & Chun, 2020). As explained in the previous section, China has mediated A/VR in the arts to represent ‘Digital China’ as the new image to the rest of the world. Therefore, the significance of this project is to investigate whether this use of DIA has the potential to combat orientalist views of Chinese representations in art. As I have discussed, there is a considerable global presence of Chinese digital products and services compared with a decade ago. However, such presence is still being considered in terms of hard authoritarianism, even though some other countries in Asia have a proximate cultural background to China. For example, as believed by the authors in the book *China’s Digital*

Presence in the Asia-Pacific, China's digital platforms and products have yet improved China's cultural presence in Singapore and Malaysia; there is residual suspicion about Chinese online products and applications because of their association with the Chinese government, even though many Singaporeans are willing to use them because of the familiar, shared language interface (Keane et al., 2020, P. 132). The significance of a nation's presence in the world is not just specific to China but also to other Asian countries. As I will discuss in Chapter 6, South Korea's K-pop culture and Japan's 'cool' culture are forms of soft power that global audiences have more widely accepted (Nye & Kim, 2019).

1.4 Research approach

With much scope for research to be done around the creative practice of DIA in relation to 'Digital China', this project could have conceivably adopted many different formats and approaches. While this project bears an affinity to other recent works conducted in the interdisciplinary field of cultural studies and immersive media studies (e.g., Bender, 2021; Grau, 2003; Pett, 2021), nonetheless it has emerged from exclusively ethnographic research. Qualitative techniques are preferred over other methods in the research design because of the exploratory and interpretive nature of the investigation, and also because, at the commencement of this project, standard rules for qualitative techniques (such as participant introspection) were yet to be well valued in the context of immersive media research due to the trend in objectifying the sense of presence via quantitative analysis (Messham-Muir, 2018; Slater, 2004). The CEO of NextGen Interactions, Jason Jerald (2015, as cited in Evans, 2018, p. 50) defines presence as a subjective feeling of immersion rather than the characteristics of immersive media, so a VR experience may be immersive for one person but not for another. Some scholars (Pujol-Tost & Champion, 2007) in the field of virtual heritage (VH) suggest that a qualitative framework is also needed in VR studies. This means that qualitative studies that engage with these issues would have increased methodological value. Hence, in order to critically engage with immersive experience and related practices in the context of 'Digital China' for DIA works inside and outside China, and in line with the thinking of, Douglas Kellner (2003) who is a leading theorist of media culture, a 'multi-perspectival' approach was used in this project. I used this approach to analyse the DIA works as texts, in terms of the dynamics of their production, and in terms of their reception among the studied audiences within and outside China. The data collection phase of this

study therefore focused on the social and political contexts surrounding the production of DIA, as well as the textual and audience-oriented aspects of the project. The ‘multi-perspectival’ approach therefore comprised three central components to satisfy these needs carried out in overlapping phases of the data collection. Phase one involved semi-structured interviews with practitioners to explore the mechanisms of the cultural production. Phase two focused on examination of the content of DIA works. This examination was conducted under the umbrella of ‘textual analysis’, where textual content or elements of the works were examined using a derivative form of close reading. Phase three comprised focus group discussions with viewers of the selected case studies. The transcripts from said discussions were evaluated using NVivo software and follow-up text analysis of the DIA works then completed the research process. At the conclusion of the data collection phase, which occurred over approximately one year in 2019 in China, I examined a total of five DIA works as case studies; in addition, 17 practitioners had taken part in semi-structured interviews, along with 27 participants in three focus groups regarding their experiences in the DIA works.

1.4.1 Interviews

In the first phase, interviews with practitioners served to identify the dynamics of the commercialisation of DIA, which contributes to finding out what mechanisms influence the production of DIA as a cultural product adopting digital technology. To fully understand how these mechanisms regulate cultural production, it is imperative to include interviews as one of the most important sources of data. Due to the exploratory and interpretive nature of the project, it is not enough to simply look into secondary data or published material. Instead, it is important to obtain subjective perceptions from practitioner interviews to unveil the digital landscape in question. Moreover, due to the complexity in the cultural production of DIA, practitioners involved in different functions had to be selected for the interviews. There are two types of practitioners performing key roles in the production and distribution of cultural products: cultural producers and intermediaries, which respectively correspond to the production and distribution parts in creative industries; entrepreneurs are one of the intermediaries that play a significant role in selecting, refining, and testing the value of the cultural products (Chang et al., 2021). After also taking into consideration the particularity of DIA as art and the significant role of art museums in supporting the presentation of DIA exhibitions to the public, three types of practitioners, namely creators, entrepreneurs, and

curators, were selected as the interviewees. The interviews were conducted in China in Shenzhen, Beijing, Nanjing, Qingdao, Guangzhou, and Hong Kong from March to December 2019. These interviews also helped me to identify potential case studies for the text analysis and audience study.

1.4.2 Case studies

The second phase of data collection for this project involved on-site observation, in-depth exploration, analysis, and documentation of the technology and content that constitute the selected DIA works, and, in particular, the aspects of technology affordance and the cultures surrounding their use. The data pertained to the cultural presence of DIA works. Hence, works which have relatively high immersive experience (i.e., VR and AR works) and in which the technology affordance generates the sense of cultural presence in relation to ‘Digital China’ for viewers were selected as the case studies. Case Study 1, *Boost Your Art Energy: 8-Minute Guided Session* (2019), is a VR piece incorporating elements of popular culture and pop art. Case Study 2, *Shenyou Dunhuang* (2018), is a VR project simulating the Mogao Caves, a World Cultural Heritage site in China. Case Study 3, *The Worlds of Splendors (瑰丽)* (2019), is an exhibition of four VR works representing Chinese traditional art elements from painting and calligraphy. Case Study 4, *Beijing 8-Minute Show* (2018), is a performance with immersive technology. As I have mentioned in section 1.1, this work showcased China’s new cultural image at the closing ceremony of the 2018 Pyeongchang Winter Olympic Games. Case Study 5, *Blueprints* (2020), is an art exhibition which includes five multi-media works. The VR piece in this exhibition, *The Eternal Wave* (2020), represents the cultural background of Sino-Soviet relationships in the 1950s and 1960s.

1.4.3 Focus groups

Following the initial close reading of the 5 case studies, the next key task of this project was to carry out exploratory study into audience responses and interrogate the case studies in order to answer the question of how cultural presence is generated and how it influences the viewer’s perception. Since Case Study 4 occurred prior to the commencement of my PhD, and Case Study 5 was exhibited in the UK, which is beyond the scope of my fieldwork that

had to be conducted in China (this will be explained in Chapter 3), three focus groups comprising China's domestic viewers of the other three case studies (1, 2, and 3) were undertaken for the data collection in this phase. A discourse analysis approach was applied to the collected data using NVivo, a software program for qualitative data analysis. Questions given to participants during these procedures in order to generate this data were developed linking with the interviews and text analysis carried out in the first and second phases of research and delivered in a semi-structured interview format. In order to focus on the factors influencing cultural presence and the viewers' perception, I designed key topics to frame the semi-structured questions in the focus group. These key topics included 'the most liked and disliked parts of the work'; 'the understanding of the cultural elements in the work'; 'the understanding of the artistic meaning in the work'; 'the feeling of the immersive technology used in the work' (see Appendix A for the complete list of questions). Additional data, such as art critiques in media reports and online reviews by internet users, was collected for the audience study in Case Studies 4 and 5.

1.5 Chapter outlines

Chapter 2, 'Theorising Digital Immersive Art as the Interface of Culture and Technology', applies an interdisciplinary approach to critique the intersection of digital technology with art, processes of cultural consumption, and cultural innovation in China. Firstly, this chapter provides a brief introduction to the approaches I use. Secondly, it introduces the relevant theories. The first section focuses on the definition of DIA and how digital technologies such as VR and AR enhance digital art. In the second section, I consider two kinds of 'cultural presence'. The first kind refers to how technology can help create the impression that the spectator is immersed in the artwork, in this way allowing the user a unique virtual experience of culture. The second is from the viewpoint of the nation, and references China's cultural dissemination outside the People's Republic of China (PRC). As I will explain, these two kinds of cultural presence are connected to the ontology of culture from two different perspectives. In the third section, I focus on how digital technology impacts on the mass consumption of culture.

Chapter 3, 'Methodology from the Multi-perspectival Approach', outlines the methodological approach and reasoning behind the selected research methods. It also looks at how the

research design operated during the data collection and data analysis stages of the research. In this study, the multi-perspectival approach is applied to explore how cultural presence is generated through DIA and its implications for viewers' perception of China. The multi-perspectival approach makes up for the biased opinions and parochialism caused by the heavy emphasis on the subjective (Kellner, 2011). The multi-perspectival approach includes three levels of analysis: the production and political economy of culture; cultural text; and audience reception and effects (Kellner, 2011). Furthermore, this approach also provides a reasonable and multiple analysis perspective for cross-checking claims against observational data in qualitative methodologies (Livingstone et al., 2008).

Chapter 4, 'Economic and Cultural Dynamics of Digital Immersive Art in China's Creative Industries', considers DIA as a cultural product, thus investigating the production, distribution, and consumption of DIA, and the mechanisms regulating their use in China's domestic market. Historically, art has had many roles and functions. It has been used as display, adornment, and even spectacle (Grau, 2003). It has had a non-commercial aspect, notably the gift economy, in which artworks are exchanged without requiring payment. However, in recent decades in China, art has become a business, and this brings new and different actors into the art world (Berger, 2008). Digital technology has also offered new opportunities for artists to expand their horizons and reach new audiences. The 'value' of art, therefore, can be analysed from an economic perspective (i.e., contribution to economic growth) and from a cultural perspective (i.e., contribution to aesthetics and the diversification of cultural elements). In order to explore how the value of DIA is diffused from creators to audiences, I examine the different actors (i.e., creators, entrepreneurs, and curators) involved in the process of cultural production, drawing on practitioner interviews.

Chapter 5, 'Illusion and Playfulness in Virtual Reality: Generating Cultural Presence through Digital Immersive Art', focuses on how VR impacts viewers' cultural experience in art. I will use three case studies, namely *Boost Your Art Energy: 8-Minute Guided Session* (2019), *Shenyou Dunhuang* (2018) and *The Worlds of Splendors* (2019) to examine Chinese domestic audiences' cultural experiences and perceptions of DIA. These three case studies represent the aesthetic features of DIA, the application of different cultural elements (i.e., traditional Chinese culture and popular culture), and the use of digital immersive technology. Empirical data from focus group discussions is used to evidence the conceptual structure of cultural presence and how it influences viewer perceptions. The arguments I raise are based on

reoccurring themes from the focus group data. In this chapter, I discuss the ‘illusion’ and ‘playfulness’ of VR and address questions about the ‘authenticity’ of experience in DIA.

Chapter 6, ‘Digital Immersive Art and the Problem of China’s Soft Power’, examines the approach of DIA in high profile international case studies presenting China’s cultural presence on a global stage, and analyses the creators’ views and audiences’ reactions outside China. Drawing on publicly available interviews, media reports, online comments, and close reading of the art content in relation to the selected case studies, namely *Beijing 8-Minute Show* (2018) and *Blueprints* (2020), I argue that digital technology provides an opportunity to structure ‘Digital China’ as China’s cultural image in the world through DIA. However, I acknowledge that digital technology is also generating criticisms about China based on audiences’ preconceived ideas, which are different to the perceptions that the Chinese government has tried to foster through its public diplomacy and propaganda campaigns.

Chapter 7, ‘Conclusion’, rounds out the study by answering the question of how DIA can influence viewers’ perceptions about China and how it can be used as a means for augmenting China’s cultural soft power. The chapter does this by drawing attention to the interface of digital technology and the cultural production of art, and providing an insight into how the connotative functions of the technological affordance of DIA are restricted in the current cultural system of China. Finally, the chapter points out some directions for future research on the use of advanced digital technology in cultural products.

1.6 Concluding notes

Before proceeding to address issues around cultural presence, DIA, or China’s soft power in any real depth, there are some basic features of this research which are important to reiterate or expand on prior to concluding this chapter, in particular regarding the specificity of the data provided, the terminology used, the nature of the technologies being studied, and the position I take here.

In relation to the exploratory aims of the project, it is perhaps also worth reiterating here, then, that critically investigating the experiences of DIA viewers was one of the driving forces behind this study. The analysis conducted in the respective phases of this research was entirely qualitative. For example, the data about participant experiences of the DIA works

collected in the focus group discussions was not in any way interpreted like content analysis. I did not count examples of any particular phenomenon occurring in the case studies but, in the vein of textual analysts, simply sought out dominant themes and patterns occurring in the experience of viewers.

It is worth considering the use of the terms ‘audience’ and ‘viewer’ in the study. This project tries to find generalisable patterns within the sample groups and uses viewers’ individual experiences to evidence these patterns. ‘Audience’ refers to a group of people, whereas ‘spectator’ or ‘viewer’ refers to a single person. Some of my case studies that use a VR headset are for a single viewer or spectator. To further complicate matters, many people refer to a VR ‘user’, rather than a ‘viewer’, because the interactive feature of the media allows people to not just passively view the work (Candy & Ferguson, 2014). However, the subject of this study is art, which is not simply used as such but addresses the nature of seeing and looking, for example, from a historical or political view (Berger, 2008). Hence, the term ‘viewer’, referring to a person who is looking, seeing, and understanding artworks, is used when addressing the individual experience of the case studies. Conversely, the term ‘audience’ is used when the people are considered as a group who have collective features or behaviours. For instance, in Chapter 4, audiences are regarded as Chinese mass consumers of DIA in a commercialised context. In Chapter 6, the term ‘audience’ is used to address a different group of people who have other collective ideas. For example, Western audiences and Chinese audiences may have different perceptions of China.

It is also critical to remember digital technology is consistently developing. Indeed, in focusing on AR and VR, this project takes as its subject of inquiry a form of technology that is constantly in flux. This also means that while both AR and VR were very much live and increasingly populated at the time of writing, this will inevitably not be the case at some point in the future. In this sense, VR and AR are considered the media of art driven by technological development and as a strategy that generates immersive experience of art to influence people’s perception. Immersive strategies have already been used for centuries in art, for example, in the form of panoramas and domes in a cathedral (Grau, 2003). Nevertheless, readers might consider when engaging with this study that, while it can take some time for gaps in our knowledge among different technologies and their functions in cultural or societal contexts to be appropriately filled by academic work, the time it takes for technology to progress is much shorter (Cassidy, 2013, p.37).

Finally, I should reiterate my own position and subjectivity. As was apparent in the anecdote that began this thesis, I am subjectively close to the culture being considered. I was born in China in the 1990s, and there does not exist for me a time when China was not going through great changes. I certainly can place myself in the position of my audience participants in relation to the ubiquity of digital technology and the importance of cultural preservation. In saying this, I am, therefore, aware of my own preconceptions. To remove my own ‘self’ from this research would not only limit my ability to reach some of the conclusions that I have drawn about domestic audience perceptions, but it would also diminish my level of access to the study’s participants. The word ‘I’ also runs through this document as a corollary. This study is based on much more than a collection of anecdotes and personal reflections. In addition, it is not a description by an inside observer of ‘Digital China’ who is seeking to avoid hard questions of power. I use keywords such as ‘Digital China’ and ‘cultural soft power’, which many outside China might read as state propaganda. To some extent, this is a valid critique, considering the limited knowledge in the West of the ‘real’ China. The term ‘Digital China’ is associated with the collective idea of how people in China feel about the positive changes that have come with technology. Additionally, it is associated with a growing belief within China that Chinese culture is worthy of preservation and should be appreciated and understood by domestic audiences – with confidence. In relation to soft power, China’s culture is currently being extended outside China. I personally feel that China should ‘tell its stories well’, but I am not echoing state propaganda in saying this. Explaining these keywords is a form of critique since critique is usually presented in a way that encourages rebuttal or expansion of the ideas expressed (Wood, 1991).

CHAPTER 2

Theorising Digital Immersive Art as the Interface of Culture and Technology

This study takes digital immersive art (DIA) as the research subject not only because it is a form of art mediated by digital technology, but also because art is a carrier of culture; that is, art provides a vehicle for disseminating cultural values. Some art is effective in this regard, and digitisation influences the consumption of art products. The project suggests that if art is mediated successfully, this may change the imaginaries of China in the world. The interface of culture and technology has potentially changed the production, consumption, and distribution of Chinese culture through art. DIA is an exemplary example. This chapter applies an interdisciplinary approach to critique the intersection of digital technology and art, processes of cultural consumption, and finally, cultural innovation in China. This chapter provides a brief introduction to the approaches that I use and introduces the relevant theories used in the study.

The first section focuses on the definition of DIA and how digital technologies such as virtual reality (VR) and augmented reality (AR) enhance digital art. In the second section, I consider two kinds of ‘cultural presence’. The first kind refers to how technology can help create the impression that the viewer is immersed in the artwork, in this way allowing the user a unique virtual experience of culture. The second is from the viewpoint of the nation and references China’s cultural influence outside the People’s Republic of China (PRC). As I will explain, these two kinds of cultural presence are connected.

In a philosophical sense, the term ‘presence’ originates from the German philosopher Martin Heidegger’s (1962) ontology of ‘being’. Cultural presence, thus, reflects the ontology of culture from two different perspectives: an individual ‘being’ in a cultural environment and a cultural ‘being’ in human society. This study assumes that VR and AR have the potential to generate the cultural presence of DIA. Other synonyms that can be used here are recognition, reputation, acceptance, and visibility. The use of digital technology, especially VR, can accelerate how art engages with the public. VR has helped the museum make culture accessible to a mass audience by extending the museum’s boundaries across to the modern entertainment industry (Carrozzino & Bergamasco, 2010). The institutionalisation of cultural

meaning is a defining characteristic of cultural consumption, allowing cultural meanings in art to be received by mass audiences as acceptance or norms (Dolfsma, 2004b; Jackson, 2009). Therefore, in the third section, I focus on the institutionalisation of DIA. The increasing intersection of creative practice and technological innovation has led to new market segments and consumer groups (Abbasi et al., 2017). It has accelerated cultural consumption of, and toward, the immaterial and virtual (Denegri-Knott & Molesworth, 2010).

This chapter reviews several studies which provide critical perspectives from the disciplines of art theory, human-computer interaction (HCI), creative industries, political economy, and cultural studies. Following the studies of presence in VR, this chapter theorises the concept of cultural presence (E. Champion, 2010) as part of art reception for DIA. In relation to China, Michael Keane et al. (2020) and Gregory Lee (2018) provide perspectives on how Western audiences consider China's old and new cultural images. The theorist of cultural science John Hartley and the scholar of creative economy Jason Potts (2014), highlight the significance of cultural elements in groups and provides insight into how culture is disseminated on a group scale. In his book *Art Power*, the art critic Boris Groys (2008, p. 12) argues that art can be produced and distributed to the public in two ways: as a commodity or political propaganda tool. In line with him, this study takes a critical view to see how commerce and politics regulate the functions of digital technology and the consumption of DIA. By referencing the theories of these scholars, I examine the implication of aesthetic and cultural values contained in DIA for audience perceptions of China, and the influence of the convergence of digital technology and culture on a nation's cultural presence in the world.

2.1 Digital immersive art: Definition, digitalisation, and diversification

This study considers DIA as a new form of immersive art. Media researcher Janet Murray (2017, as cited in Banis, 2017) notes that immersion is a pleasant experience encountered through centring to a carefully simulated space. The pleasure comes from the feeling of being surrounded by a completely different reality. Another digital media researcher, Marie-Laure Ryan (2015), believes that immersion is a process of recentring whereby recipients consciously locate themselves into another world. In the process of recentring, recipients not

only convert their attention to the simulated world but also temporarily believe in the reality of the simulated world. According to the explanations by these researchers, immersion is the strategy used to generate the illusionary experience of being in another world for viewers.

The idea of immersion as an art strategy goes back as far as the classical world. In art historian and media theoretician Oliver Grau's book *Virtual Art* (2003), he notes that the feeling of immersion generates an illusion. For example, the *Battle of Sedan* (1883) by Anton von Werner is a painting measuring 115 metres long and 15 metres high. Standing on a panoramic viewing platform, which had a diameter of eleven metres and corresponded geographically to a plateau near the village of Floing, the viewer was completely surrounded by the circular painting depicting the battlefield. The experience was described by viewers as the first deep impression of feeling personally involved in what was taking place (Grau, 2003). The immersive strategy is still in use in contemporary art. For example, Japanese artist Yayoi Kusama's static art installation *Infinity Mirror Room – Phalli's Field* (1965) uses LED lights and mirrored optical illusions to create seemingly endless rooms.

More recently, digital technology has mediated the immersive strategy in art, thus allowing DIA to become a subcategory of digital art. 'Digital art is an artistic work or practise that uses digital technology as part of the creative or presentation process' (Paul, 2003, p. 7). From the definition, the creation of digital art can be traced to two approaches. The first is to use digital media to present art, such as digitalising an existing artefact. Following this approach, the immersive strategy mediated by digital technology allows viewers to feel like they are being surrounded by or immersed in an artefact which has already existed (either in the past or in the present). For instance, L'Atelier des Lumières opened in 2018 in Paris, where projection mapping produced a large-scale space with digitally stimulated paintings of Antoni Gaudí and Salvador Dali. The second approach is to use digital technology to create new art. In this approach, digital technology allows viewers to feel they are in a newly created world. For instance, *Rain Room* (2012) is an experiential artwork by Hannes Koch and Florian Ortkrass. The site-specific sound, light installation, and 3D tracking cameras create an immersive space where visitors walk through a downpour without getting wet.

Digital technology has changed how art is distributed. Even during the pre-digital era, people sought to publicise 'high art' through its reproduction in prints, photos, and videos. In 1968, Gerry Schum executed the first television gallery 'Fernseh-Galerie Gerry Schum' in Germany. This project allowed public members to see artworks in the gallery from their

homes (Bismarck et al., 2004). Artists at that time had hoped to use the television to enable artistic creation and democratise distribution. In this way, they attempted to establish a distribution system for the public on a mass scale. This experimental form of presentation broke down the traditional art institution's barriers, allowing artworks to enter thousands of households. Today, due to the internet, digital technology allows more possibilities for the public to engage with art through the particular way digital art is presented to and interacts with its mass audiences. As the internet has developed into a more immersive and multi-dimensional space, Robin Teigland and Dominic Power (2013, p. 2) propose the concept of 'immersive internet' in which 'we can interact with others as well as with virtual and augmented spaces and sites, and even with artificial intelligence'. Such innovative ideas based on digital technology are adopted in DIA not only as a network channel (for distribution) but also as the means to provide the consumer an immersive experience. The Palace Museum in Beijing has used such technology to offer live-streamed guided tours in the comfort of the user's home. The guided tours offered virtual insight into the 600-year-old site and allowed users to experience traditional Chinese culture using online platforms (Xinhua, 2020). Live streaming, when done well, can be a step up from immersive art tours that the public can experience online. The following sections further discuss the significance of digital technology, especially VR and AR, to DIA.

2.1.1 The use of VR and AR in digital immersive art

As a 21st-century digital technology, VR has become a significant means to accomplish the immersive strategy in art. In the late 20th century, scholars predicted that VR would now or soon be used for everything from arcade games, to architectural and interior design, to new kinds of exercise equipment (Lombard & Ditton, 1997) and art (Negroponte, 1995). Immersion in art practice is achieved through immersive environments and immersive aesthetics generated by immersive media (Burke, 2006). In the most compelling VR experiences, the senses are immersed in the virtual world; the body is entrusted to a 'reality engine' (Biocca & Levy, 2013). Marcello Carrozzino and Massimo Bergamasco (2010) have calculated the levels of immersion generated by different VR devices. They believe that the cave automatic virtual environment (CAVE) provides the highest immersive and head-mounted display (HMD); this wearable VR device generates considerably high immersion. CAVE is a cube and all six surfaces can be used as projection screens, surrounding the user

within an image environment (Cruz-Neira et al., 1993). HMD is a helmet with binocular displays in which the images on two monitors provide a three-dimensional perspective (Grau, 2003).

However, the quality of the digital experience depends on the rendering of the digital visualisation, including the quality of the specific hardware, server, software, browser, and more. Although we may think that virtual reality will bring a better viewing experience, its technological limitations are the main hurdle to VR access in the public domain. For example: VR HMD is expensive; there is a screen door effect¹ (Cho et al., 2017) because of low resolution which cannot be adequately avoided; and headsets are still awkward to wear. Focusing on a screen a few inches in front of your face for an extended period causes eye strain. Some people experience motion sickness during use (H. Kim et al., 2018). However, Jeremy Bailenson (2018), a researcher on the psychology of VR and AR, is optimistic about the technology because of the technical improvements that have been made in recent years.

The gallery, library, archive, and museum (GLAM) sector has adopted VR in cultural and art projects. VR constitutes a means to reconstruct artworks or artistic/historical environments that may have been destroyed or damaged, or a way to preserve and safeguard the originals. Film and media arts researcher Maggie Stogner (2011, p. 117) argues that ‘the new immersive techniques can attract more diverse and younger audiences, increase accessibility to cultural experience, enrich visitor engagement, lengthen memory retention, and inspire new ways to tell and share cultural stories’. As the information in VR is not mediated by language but conveyed mostly by sensorial feedback (i.e., images and sounds), it is easier to engage with and educate non-specialised users. As a result, the relationship between VR and cultural heritage is more than consolidated, and cultural institutions, primarily museums, can exploit the potential of this technology (Carrozzino & Bergamasco, 2010). For instance, as I have mentioned in Chapter 1, the Palace Museum in Beijing created the virtual heritage (VH) project in 2017 named ‘Duanmen Digital Hall’. This VH project includes several immersive multi-media displays (i.e., VR HMD), allowing visitors to interact with simulated cultural relics.

With the interface of digital technology and contemporary art, VR has also become a means for artists to create new forms of art. In the 1990s, Australian media artist Simon Penny et al.

¹ The screen door effect is a mesh-like appearance that occurs where visible gaps between pixels are seen on an electronic screen, usually when viewed close up.

(2001) first linked the concepts of telepresence and immersion in their art project *Traces* (1999). *Traces* is a project for networked CAVE installations. The first public presentation of *Traces* was at Ars Electronica in 1999 in Linz, Austria (Penny, 1999). The work not only provided an immersive experience but also achieved interaction among users in different places. *Traces* marks a critical stage in developing telepresence art. Users enter the virtual spaces to interact with traces of light that represent the dynamics and volumes of human bodies. Interactions take the form of real-time collaborative sculpting with light, generated through dancing with telematic partners (Grau, 2003). Instead of mirroring or simulating an existing artefact, contemporary artists can use VR to create a virtual world beyond the real and facilitate real-time interactions between people who are physically far apart. Human-computer interaction (HCI) researcher Nicholas Negroponte (1995, p. 116) suggests that VR ‘can make the artificial as realistic as, and even more realistic than, the real’. Such creative practices like *Traces* have broken down the restrictions of the real world. Richard Wages et al. (2004, p. 223) even suggest that VR art should not be restricted by real-world constraints.

AR is also being used to generate immersive experiences. Tobias Höllerer and Steven Feiner (2004, p. 2) define an AR system as ‘one that combines real and computer-generated information in a real environment, interactively and in real-time and aligns virtual objects with physical ones’. Immersion can be applied to AR in a way that builds reality on the basis of the actual space nearby but adds virtual objects to that real space. For instance, Moment Factory, a Canadian multimedia studio, orchestrated an immersive and epic experience for visitors to the Notre Dame Basilica by projecting computer-generated images on the internal surface of the basilica. AR technology is also being used in mass events to present spectacles to audiences in front of a screen. For example, on the opening day of the 2019 Korea Baseball Organization season, SK Telecom used its self-developed AR hologram technologies to present a fire-breathing wyvern in the stadium to the audiences watching the event on TV, while those in the stadium using their smartphones could also see this high-tech spectacular (Hwaya, 2019). The project scientist on computer vision Todd Margolis (2014) believes that this form of media is not just an overlay of virtual objects but stories that connect these objects to the people and places that give them meaning. In other words, using AR in conjunction with the internet platform provides a kind of social immersion that brings people together through their common interests.

Today, VR and AR technologies are growing rapidly and they are being cross-fertilised (Jung et al., 2016), which makes the application of VR and AR within DIA more complex. VR and

AR offer different interactions with reality: VR isolates viewers from the real world, and AR overlays computer-generated information with the real world. However, in the practice of DIA, these two technologies are used in negotiated ways. For instance, *Flesh and Sand (Carne y Arena)* (2017), an American short VR art project, places the viewer among a group of illegal aliens moving across the Mexican border into America until the border patrol stops them. When viewers are immersed in the HMD, they can see that there is sand on the physical ground and that they are wearing a backpack, which enhances the virtual experience. The virtual experience of border crossing is thus augmented by the actual experience of stepping on the sand. VR and AR are digital forms, so their digital capacity enables them to transform from one to another. Transformation is a dimension of creativity for art (Boden, 1994). Visual artist and scholar Desmond Hui (2019, p. 18) believes that the transferability between AR and VR provides an interesting direction for artists to explore since the variability between the augmented real-world and the virtual world may enable the creation of unexpected sensory effects. Accordingly, my study does not aim to isolate the different uses of AR and VR, but rather considers how these two advanced digital technologies contribute to immersive strategies of art.

2.1.2 The digitalisation of art for the public

Driven by digital technology, particularly VR and AR, digitalisation has become an important way to restore and protect the artefacts in galleries and museums (Jones, 2007). In line with Benjamin's idea of mechanical reproduction, digitalisation seems to create the illusion that there is no longer any difference between original and copy (Groys, 2008). Moreover, it is now possible for multiple copies of these works to circulate within information networks. Museum arts can be more accessible to the public. So, why should we still exhibit these artworks in galleries or museums? Why not just let them circulate freely through information networks or be experienced through VR headsets?

The museum is, to some extent, the guarantor of the authenticity of the artefact. 'Its [the museum's] anonymous and indirect validation enhances the aura of specific and fallible authorship' (Hein, 2006, p. xix). Historically, the museum and gallery were spaces for collecting, preserving, and displaying artefacts, and for the private contemplation of these artefacts. However, nowadays, they have become gathering places that publicly generate

private experiences for people; they also have the function of educating and shaping the public's ideology (Hein, 2006). Art historian Cher Krause Knight (2011) argues that the art museum has increasingly paid attention to its role and to issues of civic engagement especially during the 1990s and 2000s. She believes that the public's agency at museums – like the populist intent in public art – is on the rise and gathering critical attention (Knight, 2011, p. 50). Moreover, in its annual conference in 2003, the Australian Society of Archivists (2003) introduced the idea of GLAM, the unity of different cultural institutions with a mission to gather public support and interest in their collections and activities, and to provide access to knowledge. Therefore, the GLAM sector, or the galleries and museums in this particular case, have an obligation to safeguard the authenticity of the artefacts, which cannot be achieved by anonymous circulation through the internet.

Groys (2008) believes that digital art loses its authenticity and 'aura' through its digital copies. Authenticity is the specific and mysterious attribute that only the original art object has. 'Aura' is the invisible value of authenticity in art. Walter Benjamin (2008) believes that only the original artefact has this 'aura'. In his 1935 essay, Benjamin (2008) notes that the traditional artwork loses its aura when it is reproduced in the age of mechanical reproduction. In the digital age, digital art itself is the invisible data that is stored on a computer and can be copied, so the availability of the copies dissolves the authenticity of digital art. Moreover, as Groys (2008) argues, the visualisation of image data causes the loss of 'aura'; the aura is invisible, and nothing is more disruptive to the 'aura' than visualising the invisible:

...the loss of aura is especially significant in the case of the visualisation of an image file. If a traditional 'analogue' original is moved from one place to another, it remains a part of the same space, the same topography – the same visible world. By contrast, the digital original – the file of digital data – is moved by its visualisation from the space of invisibility, from the status of 'non-image' to the space of visibility, to the status of 'image'. (p. 85)

Although different from mechanical reproduction, digital art is nonetheless easy to copy. The original artwork is first digitised as a data file stored on a computer and then visualised as the image we see. Digitalisation is not only a process of copying but also the visualisation of the invisible. A digital image, which is to be seen, should therefore not be merely exhibited but staged and performed (Groys, 2008, p. 84).

Virtual heritage (VH) aims to recreate navigable worlds of three-dimensional images while also providing something much less tangible, including historical, artistic, religious, and cultural significance (Stone & Ojika, 2000). HCI and VR researcher Maria Roussou (2007) believes VH is a representation that disseminates knowledge concerning the past and history. In the exhibition and staging process, museums play a significant role since curation modifies the performed image in a substantial way. VR and AR have the potential to demonstrate beyond the visible world, which means that contemporary curatorial practice can possibly do something that the traditional exhibition could do only metaphorically, that is, exhibit the invisible (Groys, 2008, p. 91). In other words, the digital reproduction of a 'real' non-digital artwork can capture some invisible 'aura' of the original work or site through curation. For example, the art museum L'Atelier des Lumières, which I introduced in section 2.1, digitalised artists Gaudi's and Dali's works by projecting the massive digital images on the interior of the exhibition space. The invisible 'aura' of Gaudi's and Dali's works is exhibited in the museum, which allows visitors to explore the limitless 'inner' worlds of the works.

The intersection of immersive technology (AR and VR) and the internet creates a hybrid public space in the digital age which further fosters DIA to the public. As Teigland and Power (2013, p. 2) have discussed, in the 'immersive internet' people can share and create information with others as well as with virtual and augmented spaces and sites. Nevertheless, before the concept of 'immersive internet' was promoted, users had already built up various two-dimensional virtual worlds on the internet. The idea of virtual world is originally derived from the term 'metaverse' in Neal Stephenson's science fiction novel *Snow Crash* (1992). Some scholars in media and games interpret this term as a virtual world, as a computer-simulated environment in which users can simultaneously and independently explore the virtual world, participate in its activities, and communicate with others (Aichner & Jacob, 2015). More recently, the idea of the virtual world has integrated with immersive experiences. For example, VRChat, the VR social media, allows users to create their own spaces, and through networking, users can communicate and interact in real-time in these virtual spaces (Alexander, 2017). Moreover, with the launch of the online VR platform, Rec Room is trying to build a 'metaverse' of gaming where users can create and play games together across different platforms, including smartphones and VR HMD (Takahashi, 2021).

The intersection of VR and digital networks as a public space has been readily adopted in DIA by artists. 'Public space can take the form of archiving and filtering public contributions, merging physical and virtual spaces, and augmenting physical sites and architectures' (Paul,

2008, p. 163). For DIA, such creative contexts are not only display channels but also the means to provide immersive interaction among audiences, objects, and virtual spaces. Artists in the late 1960s and 1970s had already experimented with live, networked performances that anticipated the interactions now taking place on the internet and through the use of streaming media (Paul, 2008, p. 165). For example, in Max Neuhaus' project *Public Supply* (1966), he established a connection between a radio station and a telephone network whereby participants could intervene in the performance by making a phone call. 'Metaverse' and the intersection of VR and public space can potentially promote the popularisation and accessibility of DIA to wider audiences. AR and VR have helped in making culture and art accessible to the mass audience. Meanwhile, it has already started a process of the 'desacralisation' of art institutions (i.e., museums) (Carrozzino & Bergamasco, 2010), which would extend the boundaries of DIA across the modern entertainment industry (see section 2.3).

2.2 Cultural presence in two theoretical contexts

As noted in the introduction, this thesis explores the concept of cultural presence from two perspectives, so in this section, I focus on the dual definitions. The first usage of presence is specific to DIA, a 21st-century cultural technology. This use of cultural presence refers to how technology can help create the impression that the spectator is immersed in the artwork, in this way allowing the user a unique kind of virtual experience. Ideally, the distance between the viewer and the artist is collapsed. The arts can act as a kind of illusion (Wolf, 2013). In VR, for instance, viewers are temporally and spatially removed from their normal world of preconceptions. Grau (2003) believes presence is the sense of centring in another world. He explains the aesthetic paradox of presence in VR art in terms of how this presence 'enables access to virtual spaces globally that seem to be experienced physically while the same time it is possible to zap from space to space at the speed of light and be present simultaneously at completely different places' (Grau, 2003, p. 271).

The second usage of presence is from the viewpoint of the nation, namely 'cultural soft power' (文化软实力), a term now used by the PRC government to refer to the influence of Chinese culture in the world. David Shambaugh (2013), an American researcher on contemporary China and international relations, argues that China is a partial power, with

‘greater presence’ but not necessarily greater influence. As I have introduced in Chapter 1, China has more global presence of digital products and services compared with a decade ago. However, A key problem for the cultural soft power project is that the viewer situated outside China has an existing preconception of China, positive or negative, and sometimes neutral; they stand at a distance and observe. This distancing exists in most public artwork, as discussed in John Berger’s *Ways of Seeing*, first published in 1972. Berger (2008) argues that seeing is a political act, an historically constructed process. The Western media has largely constructed the image of China for people living outside China (Keane et al., 2020; Sautman & Hairong, 2009) and it sometimes structures an imaginary that is at odds with the reality of China in the 21st century (Lee, 2018).

2.2.1 Presence and cultural presence in VR

People are usually considered ‘present’ in an immersive VR experience when they report a sensation of being in the virtual world (Schuemie et al., 2001). Presence is a general and multi-dimensional concept which can be easily understood as an individual’s feeling of being there (Minsky, 1980). Scholars have defined the special experience in VR as presence (Lombard & Ditton, 1997; Steuer, 1992; Witmer & Singer, 1998). For example, the scholar on media studies, Matthew Lombard (2000), suggests that presence is related to two kinds of experience: ‘first-order’ and ‘second-order’ mediated experience. 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 (i.e., being in a forest or at a concert) (Lombard, 2000). Second-order mediated experience of presence is the mediation by technology. The feeling of presence varies in different degrees (i.e., presence does not occur, presence is greater, or presence is maximised) depending on the different mediation of technologies (Lombard, 2000). The viewer in an advanced VR experience can have a real sense of presence and partially acknowledges the role of technology in generating their experience. When an audience member’s perception in VR cannot accurately acknowledge any role of technology in the experience, presence reaches its maximum (ISPR, 2000).

With the proliferation of terms across different disciplines, there are various definitions of specific aspects of presence. For example, the terms ‘spatial presence’ and ‘physical presence’ refer to the experience of individuals feeling they are in a physical location and

environment different from the actual location and environment in the real world while partly neglecting the mediation of technology (ISPR, 2000). For example, in a VR experience that occurs via a HMD, spatial presence is achieved when the virtual space reacts to the user's body in the same way as in the real world. Moreover, when viewers devote all of their mental effort to processing what the technology creates rather than concentrating on the technology itself, they will feel 'psychological immersion' (ISPR, 2000). For example, VR can arouse people's sensation of nervousness when they play horror games in VR (Bender, 2021).

With the appearance of these newly-coined concepts relating to presence, some researchers have started to realise that presence in the context of VR not only relates to the user's physical feeling of 'being there', but also to functional perspective, such as interaction, virtual environments (VEs), and social construction (Flach & Holden, 1998). From an ecological view, the psychologist James J. Gibson (2014) explains affordance as the possibilities or opportunities that the environment offers or affords the animals (humans). At the same time, a particular affordance is dependent on both environment and animals (humans) (J. Gibson, 2014). For example, for a human, the ground affords walking; the surface of the water in a ditch does not afford support or walking for humans, but it does for water bugs. In a VE, affordance provides usefulness and allows users to act on VEs. Some works try to enhance the presence in VE by providing the user with a realistic experience. However, presence is not just the user feeling how real the VE is but also how logical the allowed actions are in a context (i.e., cultural framework).

Since this study concerns the cultural aspect of VR, this section primarily identifies the term 'presence' in the context of culture. However, before moving on to a discussion of this, it is necessary to address social presence, the concept with which cultural presence is associated. In order to improve the sense of presence in VR, Giuseppe Riva and Giuseppe Mantovani (2000) propose the concept of social presence. Social presence can be understood as users feeling they are communicating with one or more other people or entities in VEs (ISPR, 2000). More recently, Riva and other scholars in media technology (2014b) explain the concept of social presence by considering VR as communication media: social presence is regarded as an interactive experience that allows the self to identify and interact with others by understanding their intentions. There are three layers of social presence: other's presence – the ability to imitate a human being; interactive presence – the ability to identify a human being who is intimating me; and shared presence – the capacity to see oneself in another person, to get inside another's thought and state of mind (Riva et al., 2014b). These layers

emphasise the social attributes of presence, which is significant for multi-user VR (Riva et al., 2014a). In this context, culture is considered a part of social construction. In addition, Riva and Mantovani (2000) note that two elements should be considered: a cultural framework, and the possibility of negotiation for both actions and their meaning; based on this understanding, the two researchers link the idea of culture and presence, and provide a socio-cultural approach incorporating three key concepts, namely presence, communication, and cooperation, which link to the experience in VR. Riva and Mantovani (2000) believe that it is necessary for communication to build up a common ground in VE, namely via a cultural framework. The concept of social presence shows the importance of symbolic references in a cultural framework and the user's understanding of them for the sense of presence in VEs. To this end, the cultural framework influences the user's expectations and interpretation of a VE (Pujol-Tost, 2018). For instance, users from different cultural backgrounds may have different understandings of the cultural elements in a VH experience.

Nevertheless, the significance of cultural presence and social presence is not the same. The archaeologist Laia Pujol-Tost and media technology researcher Erik Champion (2007) argue that cultural presence and social presence should be separated since social presence does not necessarily lead to cultural presence even though culture is a projection of society. They assert that the value of culture lies in learning and inheritance (Pujol-Tost & Champion, 2007). Social presence and cultural presence are both relevant to collaboration, or communication, or sharing, but the aim of cultural presence is not just communicative. In fact, over-communication in presence may negatively impact the quality of learning in virtual heritage (Pujol-Tost & Champion, 2007). Cultural presence refers to the feeling that people belonging to a specific culture occupied, or had occupied in the past, within a (virtual) environment (Pujol-Tost, 2018). Champion (2010, p. 179) defines cultural presence as 'the feeling of being in the presence of a similar or distinctly different cultural belief system'. Cultural presence also can be generated in a cultural context which is proximate to the viewers. Alternatively, it can be generated in an alien cultural context. Champion and Pujol-Tost use cultural presence as the criteria for evaluating VH projects. The aim of digital media is to facilitate understanding and appreciation, and communicate, safeguard, and respect the authenticity of cultural heritage (ICOMOS, 2008). To this end, the value of cultural presence in VH should involve not only physical immersion but also the cognitive and emotional aspects of digitally mediated learning (Pujol-Tost & Champion, 2007). Hence, it requires

understanding how viewers interpret or receive the representations in the VEs rationally and emotionally.

The cultural presence of DIA requires viewers to exercise their imagination from the emotional side and understanding from the rational side. Aesthetician Werner Wolf (2013, p. 51) notes that when people appreciate artworks, there are two poles in the process of art reception: one is the emotional pole – immersion which triggers recipients' imagination that the aesthetic experience is a similar kind of experience to that in real life; and the other pole is the rational pole – distance – when people experience aesthetic illusions, they are still in their 'right minds' and able to 'read' a representation (Wolf, 2013). Immersive technology aims at eliminating the distance between viewers and artworks. Presence in virtual art is indeed a mediated perspective that surmounts great distances (Grau, 2003) because of the more interactive and immersive designs in VEs. When the user is immersed in a high resolution 360-degree immersive space, VR dissolves the interface of artworks to achieve more naturalistic and intuitive designs (Grau, 2003, p. 202). Moreover, the presence of interactive experience that VR generates, in turn, allows viewers to become the art – to be part of a world, even to be a character (Rubin, 2018). Some scholars have focused on users' emotional or sensational reactions to VR. For example, immersive media researcher Stuart Bender (2021) examines users' emotional responses in VR by monitoring their heart rates or facial expressions and using eye-tracking.

The other aspect of art reception, when the distance is dissolved, is equally significant, that is, whether viewers of DIA are still in their 'right minds' and able to 'read' a representation. Wolf (2013) believes that in art reception, distance as the rational side contradicts immersion. According to the theory of the horizon of expectation, a person comprehends, decodes, and evaluates any text (including visual content of art) based on cultural codes and conventions particular to their time in history (Baldick, 2008; Jauss & Benzinger, 1970). Art is self-reflective or, to use another word, 'metacognitive', as defined by Canadian psychologist Merlin Donald (2006). 'The artistic object compels reflection on the very process that created it – that is, on the mind of the artist, and the society where the artist emerged' (Donald, 2006, p. 5) (i.e., in a historical context or a cultural framework), so a cognitive distance is required for viewers when decoding the artworks (Berger, 2008). Distance always comprises the possibility of attaining an overall view; understanding organisation, structure, and function; and achieving a critical appraisal (Grau, 2003, p. 202). The Philosophers Hans Jonas (1973) and Hartmut Böhme (2014) advance arguments against aesthetic experience where distance is

absent, and both believe in the significance of the subject-constitutive, epistemological quality of distance in aesthetics. Presence in VR is not only an index for audience evaluation by measuring the embodied experience of immersion; it also helps to refine and improve theories related to the intersection of culture and technology (Grau, 2003; Jeon & Fishwick, 2017). Therefore, this study not only aims to explore whether the concept of cultural presence in VR contributes to DIA as an art strategy that creates immersive feelings; more importantly, it aims to examine whether this cultural presence impacts on viewers' perceptions (cognitive distance) in DIA.

2.2.2 Cultural presence in relation to 'Digital China'

The second concept of cultural presence in this study refers to cultural influence or reputation, and is often used in the global context, together with the concept of soft power, a Western created concept. This concept is somewhat problematic, however, as I will explain below. David Shambaugh (2013) has calculated China's lack of global presence in the economic, cultural, and security areas. Similarly, Keane and Chen (2017) believe that China has achieved a remarkable global presence – for instance, people everywhere are aware of made-in-China goods, but China's cultural reputation has yet to improve on the global stage. Meanwhile, China's near neighbour Japan has infused elements of Western modernity into popular culture; their cultural products resonate with the idea of 'cool' cultural presence under a global gaze (Iwabuchi, 1998).

Moreover, in line with Keane et al. (2020), who highlights the recent digital platforms of Chinese media and its international reach, China's 'cultural presence' is not only mediated by conventional soft power strategies, for instance, overseas delegations, performances, and festivals but also is remediated in real-time through online communication. This simultaneous transmission allows China's cultural images to be presented and represented in the global digital context. In this respect, the medium is the message, to paraphrase Marshall McLuhan (1964).

Cultural presence is similar to soft power, and more specifically, in the context of 'Digital China', it relates to China's cultural assets that are disseminated online. Soft power was coined by the American political scientist Joseph Nye (1990). 'In public diplomacy, the term usually describes a government's ability to influence foreign public opinion in its favour, and

to generate goodwill among the citizens of other countries for its foreign policy' (Schneider, 2019, p. 205). It refers to the attractiveness of a nation's culture and values – the ability to 'attract' followers rather than using force (hard power) (Keane & Chen, 2017). As noted above, in the global rankings, China has been evaluated as lacking soft power. However, Keane et al. (2020) believe that the metrics are heavily based on liberal norms like democracy and human rights. For example, in the US-based Portland Soft Power index, China came in at 27 (4th from last) in 2019; in the evaluation index of polling and government, China was ranked second last (SP30, 2019). The problem of soft power is how to measure it. Many evaluations are based on subjective assessments, and it is evident that liberal bias is built into the Western model. In order to emphasise its advantage in terms of culture, especially traditional culture, Chinese scholars and policy makers have instead proposed the concept of 'cultural soft power' (文化软实力) (Hu, 2007) which refers to China's cultural image outside the PRC.

China monitors the output of its cultural products, such as films, TV programs, artworks, and science fiction, to the rest of the world (Keane et al., 2020). This approach reflects China's foreign policy. Tim Winter (2019), who is a researcher on geopolitics, believes China uses cultural heritage as an instrument of spatial and social governance, and he calls it 'heritage diplomacy'. For instance, China's new Silk Road policy (the Belt and Road Initiative) is not just the bundling up of geopolitical power and geography but also the bundling of material objects (the heritage of the Silk Road) from the past into a grand narrative of connectivity, past and present (Winter, 2019, p. 24). Moreover, Keane et al. (2020) argue that China's digital presence has the potential to enhance China's international reputation from a stereotype of China as a copycat nation to that of an innovative nation. For example, 'Internet+' in the context of digital China contributes to the rise of China as a global power and has also motivated Chinese internet companies, such as social media and video-sharing platforms (i.e., TikTok), to be part of the culture export efforts (Keane et al., 2020, p. 48). In this way, China is fostering an integrated approach for digital technology and culture to build a digital Silk Road; this is reflected in the way in which digital infrastructure and network applications have been granted a central position in the Belt and Road Initiative (BRI) (Fung et al., 2018; H. Shen, 2018).

The evaluation of China's soft power has until recently been predicated on its non-digital media, that is, older art forms, including heritage, art, and performance (Kang, 2012; Shambaugh, 2015; Winter, 2016). As DIA is positioned at the intersection of advanced digital

technology and art, the question, then, is this: Can DIA thus be used to augment China's cultural soft power and, in this way, change global perceptions of China? To answer this, it is necessary to understand how foreign audiences understand China's cultural presence. As discussed in Keane et al. (2020), the Singaporean sociologist Chua Beng-Huat (2009) notes three levels of understanding of China according to where viewers are present: first, by the Chinese native (living in China), second, by overseas Chinese (with a new lens from a distance), and third, typical foreigners (the imagined audiences in the West). For example, people from outside China may be 'dragon slayers' (someone who thinks the situation in China is terrible) and 'panda huggers' (someone who believes that almost everything going on in China is good) (Gifford, 2007). However, many people in China identify with a resurgent China, so the 'Chinese Dream' is an imaginary that legitimises how the government operates (Z. Wang, 2014). The concept of the 'Chinese Dream', which appears widely in China's cultural products (e.g., exhibitions, TV programs, and movies), is received by many Chinese audiences as the shared identity of a rejuvenated China in terms of its technology, economy, and people's daily lives (Keane, 2016; Pow & Kong, 2007). As I have discussed in Chapter 1, advanced digital technology (i.e., VR and AR) is applied in the production and distribution of China's cultural products and used as the instrument to enhance the nation's 'Cultural Power' (文化强国). Within China, this term is suggestive of how its people feel about the changes that have come with digital technology in terms of the 'Chinese Dream', and the 'Cultural Confidence' (文化自信) associated with a growing belief that Chinese culture should be appreciated with confidence (Xi, 2017, as cited in CGTN, 2020).

Each understanding of China above is based on the idea of imaginaries. Different groups of people have different imaginaries or shared understandings. The philosopher Charles Taylor (2003) uses the term 'social imaginaries', referring to how people collectively come to see themselves. The philosopher Cornelius Castoriadis (1987), who developed the idea of 'collective imaginary', argues that when the collective imaginary (also called the 'instituting' imaginary) breaks down, it is necessary to create a new one. Hence, there have been revolutions and coups in many societies. It is important, therefore, to note that an imaginary in this sense does not belong to an individual: it is something that a group of people collectively identify with. Hartley and Potts (2014) believe that a culture-made group or association forms a 'we-community' built around culturally-made meaningful identities. Groups can occur at many different scales; for example, a family or a nation.

The France-based cultural theorist Gregory Lee (2018, p. 3) says that an imaginary is a ‘clutch of phrases, images and beliefs which make up the commonly held understanding we have of a group or community (be it an ethnicity or a nation, our own or someone else’s), and which dictates the way we perceive it or them’. In the past, European and American sinologists and novelists have imagined their own China, and narrated and imposed on China according to this imaginary (Lee, 2018). Such an imaginary developed from orientalism (Said, 1985), stereotypes that relegated China to a space of backwardness and barbarism. There has been a cultural disconnect for over a hundred years: how the world imagines China compared with how China and its people imagine China. Lee (2018) argues that in the 21st century, ‘China’, whose shape and form and categories those in the West invented and maintained, is starting to escape from these limitations. In the present day (as I have discussed in Chapter 1), China is arguably a ‘digital power’, and its ‘digital power’ has been diffused through the production of culture and artworks (Keane, 2019), both within and outside China.

As I have discussed in the previous section, art is naturally ‘metacognitive’, so art is considered the instrument of defining cultural periods and providing tribes, of whatever size and complexity, with their self-identifying symbols (Donald, 2006). The fundamental nature of art is its contribution to the collective processes of thought, memory, and perception in society, even in the chaotic and fluid imagery of modern secular society which conveys many different worldviews (Donald, 2006). Therefore, to examine how digital technology can play a role in China’s rejuvenation, it is necessary to ‘see’ the fluidity of China’s cultural presence in the 21st century and the gap of the imaginaries between audiences inside and outside China. To do this, we need to ‘see’ how the creative industries have adopted digital technologies.

2.3 Creative economy, virtual consumption, and mass audience

In this section, I review the theories in relation to mechanisms which regulate the use of DIA. As I have discussed in Chapter 1, ‘Digital China’ reinforces the significance of digital technology in the creative industries. The creative industries (or the creative economy) are a collective concept related to creative practice, such as advertisement, entertainment, and gaming, which contribute to the economy (Hartley, 2005; Howkins, 2002). The sociologist on

postmodern city and media John Hannigan (2005) argues that the increasing development of historic preservation sites, megaplex cinemas, themed restaurants, simulation theatres, and VR arcades constitutes a 'new urban economy' dominated by tourism, sports, and entertainment. From Hannigan's discussion, it is not difficult to locate the importance of digital technology to the creative industries. Moreover, according to research by the US National Research Council, digital technology (or information technology) is the glue that links scientific practices, cultural practices, and business practices in the creative industries (Mitchell et al., 2003). The increased interaction of digital technology with creative practice has not only led to new forms of artistic expression (Abbasi et al., 2017), but also brought about new industrial formats, such as DIA and immersive entertainment. The increasing intersection of creative practice and technological innovation has led to new marketplaces and consumer groups (Abbasi et al., 2017). Meanwhile, the lowering of the threshold of perceived accessibility to cultural content is resulting in new population segments of consumption demand (Casarin & Moretti, 2011). Following Max Weber's thesis on rationalisation and disenchantment, the sociologist George Ritzer (2005) believes that these 'new means of consumption' are being rationally designed to have an 'enchanted' character to maximise consumption.

In the art world, VR and other digital technologies are helping to make culture accessible to a mass audience by extending their boundaries across the modern entertainment industry (Carrozzino & Bergamasco, 2010). Curators use visual technology to put the image at the centre of the communication and engage mass audiences through different forms of interactive technology. However, the curators also face challenges since the use of digital technology in museum arts has been accused of desacralising museum institutions by engaging with entertainment and popularisation rather than with what has been considered more serious and traditional art practice (Carrozzino & Bergamasco, 2010). Moreover, Groys (2008) argues that the art world is not entirely occupied by various commercial interests but also regulated by political mechanisms. Hence, to explore mechanisms that regulate the use of DIA in the context of 'Digital China', the following sections focus on the literature concerning how art facilitated by digital technology can be produced and consumed by the public.

2.3.1 Toward immaterial and virtual consumption

As I have discussed in section 2.1.2, the intersection of art and digital technology is lowering the threshold of perceived accessibility to cultural content, resulting in new forms of cultural consumption. Cultural consumption refers to the consumption of goods and services with primarily aesthetic functions and only secondarily instrumental uses (Rössel et al., 2017). Cultural consumption can be immaterial, for example, a kind of service or watching a film. Moreover, the definition of cultural consumption emphasises the aesthetic value of cultural products. For instance, the consumption of a vase may be mainly for its decorative function. Cultural consumption is a significant aspect of the diffusion of cultural value to the public. Through creating new content, producers embed subjective meaning they want to deliver via cultural products and services; consumers then form their subjective meanings of the cultural products when experiencing or interpreting the cultural contents (Chang et al., 2021). The symbolic value in cultural products becomes the intersubjective experience shared by people in a common societal context when symbolic meanings are embedded in collective cultural consumption (Chang et al., 2021). Institutionalisation, a defining characteristic of cultural consumption, establishes the cultural element in the artefact as an icon or norm in a culture (Benzecry, 2014; Chang et al., 2021; Dolfsma, 2004b). Chang et al. argue that the Korean popular music industry (K-pop) is an example of cultural institutionalisation since K-pop has become a kind of cultural icon that is not only accepted by South Korean but also global audiences. The aforementioned ‘Chinese Dream’ is an instance of cultural institutionalisation in China.

As I have discussed, even though cultural presence in VR is an individual experience, it is also a shared experience when the cultural consumption of DIA happens in a societal context (i.e., ‘Digital China’) and on a group scale. Hence, to know how VR and AR contribute to the diffusion of cultural value in the context of ‘Digital China’, it is important to understand how changes in cultural consumption are mediated by digital technology. Digital media researchers Janice Denegri-Knott and Mike Molesworth (2010) note that digital technologies produce a new style of consumption – digital virtual consumption (DVC), which is seen as a consumption model that involves a hybridisation of the material and the virtual-as-imagination through the use of digital technology. They highlight the ontological properties of DVC. DVC is a kind of digitally and virtually immaterial consumption. For example, in the online mobile game *Honor of Kings* (王者荣耀), players can buy a magical epigraph to aid them in attack and defence. Such immaterial consumption does not improve players’ fighting skills in the real world but enhances the gameplay capacity. Moreover, such consumption

behaviour in the game differs from psychological (or spiritual) cultural consumption since in the virtual world, the magical epigraph could be consumed for instrumental use rather than aesthetic function. Hence, Denegri-Knott and Molesworth (2010, p. 109) believe that DVC is linked to the ‘theorisation of the digital virtual as a liminal space – somewhere between the imagination and the material’ –which is staging a virtual and experiential consumption spectacle for audiences.

In line with Denegri-Knott and Molesworth, Jaesuk Jung et al. (2021) examine the DVC experience of luxury brand fashion shows in VR. They find VR can democratise and commodify consumption experiences and fulfil consumer desires to relieve themselves from the mental burdens and anxieties of their ordinary lives. In their research, DVC is a kind of cultural consumption since viewing fashion shows either in VR or in the real world is primarily for aesthetic purposes. In this study, I also consider appreciating DIA as a form of cultural consumption to fulfil spiritual or cultural demands through DVC.

This study focuses on the ontological properties related to the DVC of DIA. Denegri-Knott and Molesworth (2010, p. 117) list four key factors of DVC. The first is ‘stimulation of consumer desire’, for example, experiences in digital virtual spaces that stimulate consumer desire for both material and digital virtual possessions. In some museums or online platforms, virtual heritage can stimulate some viewers’ desire to visit the physical tourism site (Guttentag, 2010). The second key factor of DVC is ‘actualisation of consumer daydreams’, which means consumers may actualise daydreams through ownership of digital virtual goods. In addition, through immersive art exhibitions, audiences can actualise *daydreams* through acting out their wishes in an imaginary virtual world. The third is the ‘actualisation of consumer fantasy’, such as the example of *Honor of Kings* (王者荣耀) that I previously used. The fourth factor is the actualisation of consumer experimentation, for example, performing anti-normative subjectivities, like committing a serious crime in a video game. DVC is intrinsically a kind of spiritual behaviour. *Boost Your Art Energy: 8-Minute Guided Session* (2019), one of the case studies of DIA in this study, also allows audiences to try anti-normative subjectivities, like destroying the virtual room. Accordingly, this study considers that the cultural consumption of DIA is a particular form of DVC (as will be detailed in Chapter 4). The explanation of DVC by Denegri-Knott and Molesworth is primarily related to the consumption of virtual commodities, such as purchasing equipment in a video game. Purchasing equipment in the virtual world is immaterial, but such behaviour may be defined

as material consumption in the actual world. The consumption behaviour of art is immaterial both in the virtual world and actual world.

2.3.2 Toward political education and mass audience

Commodification has seemed to gain unlimited access to the art world. Art is now sponsored by retail brands. For instance, *Carne y Arena (Flesh and Sand)* (2017), a VR art installation exhibited at the Los Angeles County Museum of Art (LACMA), was sponsored by a film company and a luxury brand charity foundation. Moreover, art itself has also become a kind of experience economy. As a new form of art, immersive cinema is produced within the commercial context of the experience screen economy (Pett, 2021). In visual culture, the images of art become entertainment content consumed by mass audiences. With the application of digital technology such as VR and AR, commerce is driving the development of blockbusters, computer games, and simulation rides with the addition of advanced visual experiences (Darley, 2002; King, 2005). However, according to this type of analysis, the art world has become entirely occupied by various commercial interests that dominate the criteria of inclusion and exclusion that shape the art world. ‘In this way, the balance of power between economy and politics in art has become distorted’, as Groys (2008, p. 6) argues.

one cannot, that is, avoid the suspicion that the exclusion of art that was not produced under the standard art market conditions has only one ground: the dominating art discourse identifies art with the art market and remains blind to any art that is produced and distributed by any mechanism other than the market. (Groys, 2008, p. 6)

Art functions in the context of the art market or, more broadly, in the creative industries, and that every artwork and its derivatives are commodities is beyond doubt. However, ‘art is not just a commodity but also a statement in public space; art is also made and exhibited for those who do not wish to purchase it – indeed, they constitute the overwhelming majority of the audience for art’ (Groys, 2008, p. 180). Especially today, the intervention of immersive technology, the internet, and art museums is changing the conventional definition of public space for art viewers (see section 2.1.2), which means there are more ways for people to encounter a work of art. Art is not the same as a commodity, the value of which is to

contribute to the economy and influence the audience's mind ideologically and cognitively (Donald, 2006).

In his book *Art Power*, Groys (2008) uses Socialist Realism as an example to demonstrate how political ideology was institutionalised through art. Socialist Realism was based on the Leninist theory of reflection and the theory of Andrei Zhdanov (1950) that art should realistically reflect reality (the superstructure should reflect the base). Socialist Realism was not supposed to narrate life as it was because life was interpreted by Socialist Realist theory as being constantly in development. 'Socialist Realism was oriented toward what had not yet come into being but what it saw should be created and was destined to become a part of the Communist future' (Groys, 2008, p. 144). By contrast, the commercial world is less concerned with the truth of work and more with its commodity form as previously discussed. In 1934, Socialist Realism was expanded in the Soviet Union to encompass all the arts, including the visual arts. The introduction of Socialist Realism coincided with the massive abandonment of the market economy in the socialist bloc, including the art market. Hence,

the Socialist State became the only remaining consumer of art. And the Socialist State was interested only in one kind of art – socially useful art that appealed to the masses, that educated them, inspired them, directed them. Consequently, Socialist Realist art was made ultimately for mass reproduction, distribution, and consumption – and not for concentrated, individual contemplation. (Groys, 2008, p. 145)

Soviet theorist Zhdanov argues that literature must become 'a small cog' in the social-democratic mechanism (F. Wang, 1988, p. 716). Once cultural policy had been formulated, it became absorbed into theories of propaganda and a legacy inherited by the socialist bloc. In the 1940s, art in China was part of ideology and art was used in propaganda successfully. As David Holm (1991, p. 52) points out in his study of the Chinese communist base camps in what is known as the Yan'an period, in determining what cultural forms were appropriate for the task of revolutionary class struggle, the Chinese leadership determined the cultural forms that were 'pleasing to the masses' while at the same time educating and arousing the masses. Socialist ideology was put into existing popular art forms to educate the public, which could be interpreted as Socialist Realism. Similar to Socialist Realism in the Soviet Union, the directive to 'tell China's stories well' ('讲好中国故事') is an example in China of how art becomes 'a small cog' in the political mechanism. In 2015, the Chairman of the PRC, Xi

Jinping, announced that China's artists, writers, and journalists should 'tell China's stories well' (China Media Group, 2019). One function of political art in China is to preserve memory (i.e., revolution); the other function is to promise a better future (i.e., 'Chinese Dream'). TV dramas in China used to have these functions (Keane, 2015). In the context of 'Digital China', as I have discussed in Chapter 1, VR, and AR connect with science and technology, which are key elements of the 'Chinese Dream' for the future. The immersive performance *Beijing 8-Minute Show* featuring AR and AI at the 2018 PyeongChang Olympics closing ceremony was described as 'telling the story of China in the new era' and 'what people's life will be like in the future' by China's state-owned media, China Central Television (CCTV) (2018). Schneider (2019) argues that the high-profile art events like the Beijing Olympics opening ceremony in 2008 and Shanghai Expo in 2010 can shed light on the meanings that inform politics in the PRC to understand China's revival, China's new branding, and the manifestation of the 'Chinese Dream' in complex modern societies. I will further analyse the mechanisms of *Beijing 8-Minute Show* (2018) as a case study in Chapter 6.

2.4 Conclusion

I began this chapter with an overview of DIA as the interface of digital technology and art. Digital technology is a driving force of the new forms of digital arts. The use of VR and AR in digital arts upgrades the forms of art in a more immersive and interactive way. The intersection of art and digital technology influences how culture is presented in art, and how people receive it. When people receive the cultural meaning in the art, it is not just an individual experience but also a consumption behaviour characterised by the consumption of cultural products (Bourdieu, 1987; Chang et al., 2021; Dolfsma, 2004b) connected to the mechanism of cultural production. The increased interaction of digital technology with creative practice has not only led to new forms of artistic expression (Abbasi et al., 2017) but it has also brought about new modes of cultural consumption. In the digital age, the consumption of cultural products tends to be virtual, immaterial, and immersive (Bailenson, 2018; Darley, 2002; Denegri-Knott & Molesworth, 2010; Grau, 2003). With reference to the thesis research questions, this chapter has defined DIA, theorised the concepts of cultural presence, and conceptualised DIA consumption in the creative industries.

In this chapter, I have defined the DIA as the new form of digital art which had adopted the strategy of immersion that is mediated by digital technology. In line with Grau (2003), DIA takes immersion as an art strategy to generate an illusionary experience of being in another world for viewers. As advanced digital technologies, VR and AR are used to create immersive experiences that simulate existing artefacts (Bailenson, 2018) but in a way that represents the world beyond the actual world (Negroponte, 1995; Rubin, 2018). In line with Benjamin's (2008) idea of mechanical reproduction, digital technology seems to create the illusion that there is no longer any difference between original and copy (Groys, 2008). Moreover, it is now possible for immersive multiple copies of these works to circulate within information networks (Teigland & Power, 2013), which makes the arts even more accessible to public audiences. However, some researchers are concerned that the use of digital technology in art has started a process of desacralising art institutions (i.e., museums) (Carrozzino & Bergamasco, 2010) and eliminating the authenticity of art in the digital age (Groys, 2008).

This chapter has isolated two kinds of cultural presence. The first use of presence relates to the psychological concept of presence in an immersive VR experience when users report a sensation of being in the virtual world (Schuemie et al., 2001). Cultural presence is used to evaluate how users learn cultural meanings in VH (E. Champion, 2010). To apply the concept of presence in DIA in this study, I consider cultural presence as a novel aesthetic experience which requires the spectators' emotionality to imagine, together with the distance for spectators to understand (Grau, 2003; Wolf, 2013). Furthermore, this study considers cultural presence as culture 'being in the global context', namely as an expression of soft power (Keane & Chen, 2017; Shambaugh, 2013). In this concept, cultural presence is not an individual experience but it is instead structured from a collective imaginary in a group of people (Castoriadis, 1987; Hartley & Potts, 2014; Taylor, 2003). To examine whether DIA changes global perceptions of China, it is necessary to explore the tensions between China's new image and global audiences' imaginary of China's cultural image (Lee, 2018). In the end, in order to take a critical look at the function of DIA in institutionalising cultural meanings, this chapter reviewed the concept of DVC (Denegri-Knott & Molesworth, 2010) and the political mechanism of art (Groys, 2008). The review on DVC and Socialist Realism contributes to the exploration of how DIA is produced and consumed, and what mechanisms regulate their use in the context of 'Digital China'.

The literature reviewed in this chapter not only provides the theoretical frames for this study but also directs the choice of methodology for this project. By discussing the theories about political and commercial mechanisms in relation to cultural products, this chapter suggests a political economy view to look at DIA, especially in the context of ‘Digital China’, since China is seen as top-down and fits a political model (the power of the state to determine), but increasingly there are also more digital options oriented towards the power of audiences. Many companies are trying to enter the market; and to help understand this phenomenon, a creative industries approach is required. Therefore, as I will discuss in the next chapter, a ‘multi-perspectival’ approach, or a methodology that is situated between these fields in terms of the production, cultural content, and audience reception of DIA, is applied in this study.

CHAPTER 3

Methodology from the Multi-perspectival Approach

This chapter outlines the project's overarching research approach and the methods undertaken to facilitate this approach. It also explains the data collection and data analysis stages as part of the research design. To explore the implications of digital technology for China's rejuvenation and global cultural presence through art, this project employs a multi-perspectival approach using an entirely qualitative methodology. As I have mentioned in the previous chapter, the 'Digital China' context lends itself to looking at digital immersive art (DIA) as a cultural product via a political economy lens, so a multi-perspectival approach combining political economy and cultural studies is favoured by this project. The multi-perspectival approach, which is often used in studies regarding media studies, cultural studies and, creative industries, has three levels of analysis: the production and political economy of culture; cultural text; and audience reception and effects (Kellner, 2011). This approach also provides a reasonable and multiple analytical perspective for cross-checking claims against observational data in qualitative methodologies (Livingstone et al., 2008).

The digital world makes the idea of the political economy seem less persuasive since digital technology accelerates the convergence of products and services as well as audiences and labours (Jenkins, 2004). The scholars on cultural studies, Scott Lash and Celia Lury (2007) point out that cultural objects are diffused everywhere, such as information, communications, branded products, financial services, media products, transport and leisure services. Their argument suggests that it is hard to differentiate between products and services as everything is digitalised. The rapid move to online on-demand content enables audiences to have more opportunities to choose cultural content and be involved in the production, so there has been a tendency in research scholarship to focus on audience studies of culture. Nevertheless, some scholars (Croteau & Hoynes, 2013; Kellner, 2003) in the area of media culture and political economy studies have expressed concerns that the scholarly tendency to focus on audiences can lead to neglecting discussions of production in cultural studies.

There has been a series of ongoing debates among scholars; those that focus on the control of production (political economy) (Fuchs, 2014) and those that identify the agency of the

audience (cultural studies) (Hartley et al., 2015). According to the mass communication researcher Vicente Mosco (2009), cultural studies exaggerate the importance of subjectivity, as well as the inclination to reject thinking in terms of historical practices and social totalities, but political economy departs from such tendencies through exploring the social mechanism of how a cultural product moves through a chain of producers and, finally, to consumers. Alternatively, there is an approach called ‘production of culture’ that brings in other aspects in the chain of production and consumption, and focuses on ‘the content of symbolic elements of culture [that] are significantly shaped by the systems within which they are created, distributed, evaluated, taught, and preserved’ (Peterson & Anand, 2004, p. 311). The approach in this project is situated between these fields because China’s production of culture is seen as top-down and fits a political economy model (the power of the state to determine), but there are increasingly more choices and more digital options underscoring the power of the audience. On the other hand, as introduced in Chapter 1, many companies in China are trying to enter the market. The creative industries model undercuts both the political economy and cultural studies models. It shows that audiences and producers are closer than ever.

In line with the multi-perspectival approach, I conducted in-depth interviews with practitioners, firstly, to understand the production and political economy of culture in the context of ‘Digital China’. Then, I decided on the case studies of DIA and analysed them as cultural texts. Lastly, I conducted focus group discussions based on the selected case studies to examine audience effects. This chapter has three sections to demonstrate the application of each research method as part of the overall research design. In the first section, to investigate how cultural products of DIA are produced and distributed, I interviewed three different kinds of practitioners, namely creators, curators, and entrepreneurs, in China. The second section focuses on cultural content analysis. I applied close readings of the text (i.e., literary text, audio, and cultural elements) from the DIA works/exhibitions, didactic panels, and other supporting documents. The third section demonstrates the use of audience study in the research design. To explore Chinese domestic audiences’ responses to Chinese cultural presence in DIA, I organised three focus groups to discuss three VR works: *Boost Your Art Energy: 8-Minute Guided Session* (2019), *Shenyou Dunhuang* (神游敦煌) (2018), and *The Worlds of Splendors* (瑰丽) (2019). Finally, some additional documents (i.e., online comments, news coverage, and art criticisms) are used to understand international audiences’ views about China through DIA and to supplement the data collected using the above methods.

3.1 Research approach from the perspective of cultural production and political economy

There is a tendency to romanticise the ‘active audience’ in cultural studies by neglecting that media have a direct influence on audiences. Douglas Kellner (2011) notes that audiences are diverse and can interpret texts in various ways, including sometimes in conflicting ways, which can complicate investigations on the whole picture of culture. Hence, the first level of approach of this study focuses on the function of the political economy on cultural production. The dialogue between political economy and cultural production (i.e., how the cultural product is being produced and distributed) helps to reveal the social and economic reasons for the tension among producers, distributors, and audiences in the field of DIA. Due to the exploratory and interpretive nature of the project, it is not enough to simply look into secondary data or published materials. Interviews with practitioners have been included because the interview data serves to identify the dynamics of the production of culture through DIA in China’s creative industries.

3.1.1 Interview as method of data collection

The approach demonstrated in this section draws on analysing the data from in-depth interviews with different practitioners in relation to the production and distribution of DIA. The key roles of cultural producers and intermediaries, which respectively correlate with the production and distribution parts in the chain of creative industries (Chang et al., 2021), determined the selection of the types of interviewees in China. Digital creative industries in China are changing fast, and it is important to consider cultural production in research on this topic; as I have discussed in Chapter 1, DIA is impacted by commerce, culture, as well as policies, which is in turn bringing new roles into the art world. Moreover, it is significant to obtain data from interviews to unveil further the roles’ motivations, and the function of the convergence of immersive technology in art.

From March to December, 2019, interviews were conducted in China in Shenzhen, Beijing, Nanjing, Qingdao, and Hong Kong. The fieldwork helped me not only find potential interviewees but also the potential case studies for close reading and audience study. During

the fieldwork in China, I found the interviewees from conferences like Sandbox Immersive Festival (SIF) 2019, which is an annual conference gathering artists and their immersive works, and Future Business Ecolink Conference (FBEC) 2019, which is a commercially oriented conference aimed at connecting the different fields of the immersive industry in China. I also visited immersive art exhibitions to find potential interviewees. Some of the interviewees were introduced by acquaintances or by other practitioners. Additionally, some of the interviewees introduced other practitioners in relevant fields, which gave me more options for selecting potential interviewees. Twenty practitioners were contacted through WeChat or email for my research, and 17 of them agreed to participate. The chosen interviewees included DIA creators (i.e., artists, producers, and technicians), curators from art and cultural institutions (i.e., galleries and art museums), and entrepreneurs (i.e., founders of start-ups and investors) from digital creative industries.

In order to examine the context of ‘Digital China’, and the factors influencing the function of digital immersive technology and the production of culture through DIA, I designed the interview schedules to survey the selected practitioners. The questions in the interview schedules included but were not limited to the following: What is your opinion about the development of VR/AR and DIA in China? What is your role and aim in terms of the showcases? Why were you involved in such business or projects? What kinds of audience effects were you looking for? More extended questions were asked according to participants’ answers. To make sure that each interview would be fully developed and aligned with the perspective of this study, semi-structured interviews were carefully planned before the scheduled interviews (see Appendix B). I recorded the interviews using a recording pen, and then I transcribed them in Chinese.

3.1.2 Data analysis

In order to pursue the research questions in greater depth and contextualise the findings with reference to ‘Digital China’, I applied textual analysis to search through the interview materials. To identify the influence of different practitioner roles on the production and distribution of DIA, I coded the transcript text into three categories according to the three key roles (creators, curators, and entrepreneurs) and then compared their responses to the same questions. Through this first step of analysis, I found that different actors have different

functions in the process of production. Then, I further analysed how their functions were generated (motivations and conditions) and how their practice in the field has an effect on the audiences' reception.

Since the interviews were conducted in Chinese, the data was transcribed in Chinese by the researcher and analysed accordingly, and then translated into English by the researcher when quoted in this thesis. Moreover, in order to summarise or compare selected interviewees' ideas, I coded the interviewees' names according to the roles they played and the chronological order in which they were interviewed (Table 3-1). For example, interviewee Cr-1 represents the creator whom the researcher first interviewed.

Table 3-1 Summary of interviewees

| Role | Position of Affiliation | Name | Code |
|--------------|--|----------------|------|
| Creator | Founder of YCVR | CAI Songyan | Cr-1 |
| | Lecturer at The Hang Seng University of Hong Kong | Patrick MOK | Cr-2 |
| | Director of Configreality Space | LIU Liquan | Cr-3 |
| | Founder of Jes Studio and Configreality Space | HUANG Jiasheng | Cr-4 |
| | Founder of LumiereVR | GUO Qinya | Cr-5 |
| Entrepreneur | Founder of Blooming investment | YANG Juze | E-1 |
| | Veer staff | REN Qing | E-2 |
| | Veer staff | HUANG Ruogu | E-3 |
| | Founder of Eyemax | Wu Zhanxiong | E-5 |
| | President of Shenzhen VR Industry Association | TAN Yiguo | E-6 |
| | Founder of Configreality Space | PENG Junxi | E-7 |
| | Manager of Cultural and Technological Promotion Association for Nanshan District, Shenzhen | LIU Xi | E-8 |
| | Officer at Cultural and Technological Promotion Association for Nanshan District, Shenzhen | HE Xi | E-9 |
| Curator | Owner of Horizon Art Space | ZHANG Taiyong | C-1 |
| | Staff at K11 Art Museum | NG Pui Lok | C-2 |
| | Staff at Deji Art Museum | N/A | C-3 |
| | Curator at Red Brick Art Museum | WANG Liping | C-4 |

3.2 Research approach from the perspective of cultural text

Textual analysis is used for close reading, in-depth exploration, and analysis of the technological affordance and cultural text that constitute the selected DIA works. Textual analysis is often used as the method for analysing various forms of discourse, ideological positions, narrative strategies, image constructions, and effects. Traditionally, textual analysis is mainly used in the analysis of written language and literature. With the intervention of semiotics, which originates from linguist Ferdinand De Saussure's (1960) concepts of signifier (the form) and signified (the idea or concept), textual analysis is also used in the analysis of various non-verbal cultural products.

This method is appropriate for studies of DIA. Curators and artists often use cultural text, including literary text and non-verbal text, such as voice, images and music, to convey meanings and ideas in artworks and exhibitions. Close reading of this cultural text needs to connect the context of the production and the audiences' reception. 'It is important to stress the importance of analysing cultural text within their system of production and distribution' (Kellner, 2011, p. 10). Hence, through close reading of the selected DIA works, I try to find out how the production and political economy of culture influences the use of immersive technology and cultural elements in DIA, and how technological affordance (in virtual environments) and the cultural text of DIA are received by audiences.

3.2.1 The selection of the case studies

The case studies are examples of Chinese VR and AR works that advance the context of 'Digital China', either in terms of advancing the digital technology or as representative of Chinese culture or culture in China. Thus, I focused on two factors, namely the type of immersive technology and the cultural elements of the work, when selecting the case studies. VR and AR are considered as 'flagship' technologies in the context of 'Digital China'. As I have discussed in Chapter 2, VR/AR technologies are complex and include different types of applications. For example, head-mounted display (HMD) and cave automatic virtual environment (CAVE), which is a cube-shaped device, of which all six or four surfaces can be used as projection screens (Cruz-Neira et al., 1993), are two different types of VR technology. Furthermore, as discussed in Chapter 1, China has multiple cultures (traditional and modern), and the 'Digital China' context makes the issue of culture more complex.

Therefore, diversified criteria were applied in the selection of case studies to indicate this complexity. Firstly, the case studies should include different types of VR technology. Secondly, the selection of cases should represent different perspectives of Chinese culture to examine the interface of technology and culture in the context of ‘Digital China’. Moreover, as the secondary research question is about how the work has been received by international audiences, the selection of case studies also needed to consider their availability to audiences within China as well as internationally. Therefore, I selected two relatively high profile examples in the field that have been presented to international audiences.

However, when commencing the fieldwork, I realised there were the restrictions in terms of where and when the cases were exhibited. Due to the popularity of DIA in China, many works and exhibitions were located in different cities and exhibited at the same time, so it was difficult for me to view all the exhibitions in person before I made sure which work qualified as a case study. Before visiting the case studies, I collected information about the potential cases from official websites, WeChat, and online ticketing platforms to schedule the travel agenda. It was sometimes not easy to select the cases according to the online information without visiting them in person to gauge the quality of the works. Therefore, during the interview process (see section 3.1), I would ask practitioners in this field to introduce some typical cases and explain their views in relation to the cases, which was helpful to me in narrowing down the selection. Hence, in this sense and in light of my fieldwork practice, the multiple-perspectival approach is appropriate for my research.

After taking into consideration these issues as well as previous hurdles and criteria, I ultimately selected five case studies (see Table 3-2). In the next section, I will briefly introduce these case studies based on my observations and publicly available resources.

Table 3-2 Summary of the main case studies

| No. | Name (Year) | Author | Location/Platform |
|-----|--|--|--|
| 1 | <i>Boost Your Art Energy: 8-Minute Guided Session</i> (2019) | Produced by Wang Xin and LumiereVR | K11 art space in Hong Kong (China) |
| 2 | <i>Shenyou Dunhuang VR</i> (2018) | Produced by imLab at National Taiwan University and Dunhuang Academy | Steam VR (online platform) |
| 3 | <i>The Worlds of Splendors</i> (2019) | Produced by GLA (格兰莫颐) Art Group and BlackBow (黑弓) | Deji Art Museum in Nanjing (China) |
| 4 | <i>Beijing 8-Minute Show</i> (2018) | Produced by Zhang Yimou | Pyeongchang Winter Olympic Games (Korea) |
| 5 | <i>Blueprints</i> (2020) | Cao Fei | Serpentine Galleries (UK) |

3.2.2 Introduction to the case studies

Case Study 1, *Boost Your Art Energy: 8-Minute Guided Session* (2019), is one of the VR artworks in Wang Xin’s *Maybe it’s Time to Refresh the Art World a Little Bit* (2019), the artist’s ticketed exhibition at K11 art space located in a shopping mall in Hong Kong. Wang’s *Boost Your Art Energy* is a spiritual, mystic, and immersive VR artwork that aims to recharge one’s ‘art energy’ (X. Wang, 2019). When viewers put on the VR headset, they are thrust into a dream-like virtual environment (VE) freed from conventional space, time, and reality. In the VE, viewers choose to activate one of four guided sessions separately in four virtual rooms, each with a different approach to revitalisation. Throughout the exhibition, viewers can see many elements of pop art, such as Wang’s signature pink colour and the use of wave dots (which refer to the mass of replicated dots or dot patterns). The bold colour and wave dots are widely used in pop art, opposite to ‘high art’ (Grenfell & Hardy, 2007). Such elements are considered part of popular culture among younger Chinese audiences.



Figure 3-1. Photo of a participant experiencing *Boost Your Art Energy* (2019).

Case Study 2, *Shenyou Dunhuang* (神游敦煌) (2018), is presented by imLab at National Taiwan University and Dunhuang Academy (Han et al., 2019). It is a virtual heritage (VH) project, and is free to download from Steam's online store. *Shenyou Dunhuang* (2018) intends to contribute to its viewers' cultural understanding of Mogao Caves (莫高窟) through interactive experience of the virtual artefacts and displays in the VE (Han et al., 2019). The Mogao Caves, found in the city of Dunhuang, is one of China's 'World Cultural Heritage' listed by UNESCO in 1987 as a relic of Buddhist culture in China (UNESCO, 1987). Dunhuang is also a public tourist destination in western China. Like many other cultural heritage sites, it is facing problems with protection and preservation. This VH project allows viewers to explore Mogao Cave No. 61 (Han et al., 2019). Viewers can see a digital restoration of the deteriorated murals and ruined statues. For example, the Manjushri statue in Mogao Cave No. 61 is missing but it has now been digitally reconstructed and re-appears vividly in the virtual cave. Viewers can also see animations on the walls, which illustrate the stories behind the murals.



Figure 3-2. Photo of *Shenyou Dunhuang* experience site.

Case Study 3, *The Worlds of Splendors* (瑰丽) (2019), at Deji Art Museum is a ticketed immersive exhibition of Chinese traditional artifacts and aesthetics. The works in this exhibition are a CAVE installation, which allows viewers access to the VE by means of surrounding projected images. This exhibition includes four CAVE works. The first work, *Accessing the Realm through Cloud Reel* (云轴入境) (2019), creates the dynamic spectacle of a Chinese landscape painting inspired by Zhuangzi (Chuang Tzu), the philosopher of ancient China, specifically his aesthetic thought in the Warring States period. According to the didactic panels in the exhibition, this immersive artwork presents a light circle that intersects with the ‘digital image’ and ‘stereo laser projection’ to express Zhuangzi’s aesthetic philosophy of infinite time and space from his notable work *Zhuangzi: A Happy Excursion* (庄子·逍遥游). The interactive effects are presented under the viewers’ feet as they walk through the real water mist and virtual laser projection. The second work is *A Thousand Miles of Rivers and Mountains* (千里江山) (2019). This immersive work is based on the Chinese fine artwork of the same name, which the 18-year-old Wang Ximeng created during the Song Dynasty. The third work is *Goddess of the Luo River and Neon Dream* (洛神霓梦), inspired by the tragic love story of Luoshen (Goddess of the Luo River). The love story and the image of Luoshen are represented in many ancient artefacts, such as *Ode of the Luo River Goddess* (洛神赋) by Cao Zhi and *Picture of the Ode of the Luo River Goddess* (洛神赋图) by Gu Kaizhi. Through projection mapping, this artwork shows images and calligraphy about Luoshen on long white strips of translucent paper hanging from the ceiling to generate a mist-

like experience for visitors. The fourth work, *At the Deepest Part of the Blossom* (百花深处) (2019), is inspired by the Chinese painting *Scroll Painting of Blossom* (百花图卷) from the Song Dynasty. This immersive work aims to evoke viewers' imagination about blossoming, fading, and withering through interaction with the flowers projected on the walls. Visitors can touch the walls to see the flowers completing their life cycles.



Figure 3-3. Photos of *Goddess of the Luo River* and *Neon Dream* (2019) in *The Worlds of Splendors* (2019).

Case Study 4, *Beijing 8-Minute Show* (北京8分钟) (2018), directed by Zhang Yimou, is a performance with multi-media works at the closing ceremony of the 2018 PyeongChang Winter Olympic Games. As one of several performances foreshadowing the 2022 Beijing Winter Olympics, this show was hailed by China's leadership as a great success and lauded as an example of China's emerging technological leadership, showcasing Chinese enterprises. Typical Chinese cultural motifs like the panda and phoenix, along with technological achievement, were displayed in the show. 24 roller-skating actors led by two skaters in panda costumes performed along with 24 moving transparent screens on the immersive stage accompanied by projected images (Beijing Winter Olympic Committee, 2018). In order to create a sense of immersion for the live audiences, AR and relevant digital technologies were also used. As reported by CGTN (2018), 'images were projected to the icy floor while dancers skated across it, creating a sense of augmented reality (AR)'.

Case Study 5, *Blueprints* (2020), is artist Cao Fei's ticketed exhibition at Serpentine Galleries in the UK. *Blueprints* (2020) includes five multimedia pieces: *The Eternal Wave* (2020), *Nova* (2019), *Whose Utopia* (2006), *Asia One* (2018), and *La Town* (2014). In this

study, I mainly focus on *The Eternal Wave*, a VR piece. This work creates the illusionary experience of being in a virtual world extracted from science fiction and the real world, and based on the artist's memory and research. The experience in the VR begins with viewers standing in a stimulated kitchen in Cao's studio located in Beijing before being subsequently led into another virtual space (Cao, 2020b). The work features animated images and cultural backgrounds depicting the Sino-Soviet relationship in the 1950s and '60s.

3.2.3 Data collection and analysis

The data for the close reading of the 5 case studies mainly draws on the researcher's observations. During the fieldwork, I visited some of the cases in person and recorded them by taking photographs, video recordings, and screenshots. I was not able to see *Beijing 8-Minute Show* and *Blueprints* in person due to restrictions of time and location (as mentioned in section 3.2.1). Therefore, I collected additional data for them in the form of trailers, online footage, media coverage, didactic materials, and exhibition catalogues.

Close reading an artifact of media culture involves interpreting the forms and meanings of elements in a music video or television advertisement as one might read and interpret a book (Kellner, 2011). This is the chosen method for analysing the various forms of discourses, ideological positions, narrative strategies, image construction, and effects of the case studies. To better understand the viewers' reactions to the cultural context in VR, how the cultural elements are represented in the affordance of VE, and how the context of 'Digital China' involves cultural production, the close reading involved applying questions to frame the data. Adopting the textual analysis approach, the following questions were included: What is the primary meaning of this artwork or exhibition? What kinds of cultural elements are used, for example, Chinese traditional culture elements or pop culture elements, and what do these elements represent? How does the digital technology used in the artworks mediate the representation of these cultural elements? How does the context of 'Digital China' influence the selection and representation of cultural elements of DIA?

3.3 Research approach from the perspective of the audience's reception

This study employs a qualitative approach to analyse the audience's reception in VEs. In line with the qualitative approach, I used focus group discussions drawing on the aforementioned case studies to understand how the cultural presence of DIA is generated, and how it has impacted on cultural experience among Chinese audiences. Due to the scheduling constraints previously mentioned in section 3.2.1, I selected the following case studies for the audience study: *Boost You Art Energy: 8-Minute Guided Session* (2019), *Shenyou Dunhuang VR* (2018), and *The Worlds of Splendors* (2019).

Audience studies of immersive media can be traced back and separated into the active media perspective (i.e., the media has an effect) and the active audience perspective (i.e., users make meanings). The active media perspective mostly starts from behaviourism and experimental psychology, which measures attitudes and behavioural change among the audiences by using quantitative methods, such as surveys, questionnaires (Schuemie et al., 2001), and, more recently, bodily response by monitoring heart rate or eye-tracking (Bender, 2019). By contrast, studies on the active audience come from the fields of anthropology, ethnography, and cultural studies (Iser, 1980). Such studies emphasise the audience's subjective initiative and artistic experience rather than the text of the artwork or the artist's intention. The active audience perspective has been widely used in the research of presence and VR. Jonathan Freeman and Steve E Avons (2000) use focus groups to discuss people's experiences while watching stereoscopic TV. Their results show that audiences can describe sensations of presence and relate presence to involvement, realism, and naturalness. Carrie Heeter (1992) applies a similar approach, questioning users after they had used immersive VEs, and examines the personal, social, and environmental elements related to users' sense of presence in VR.

Following the chosen multi-perspectival approach, I crossed between the two approaches. In other words, this study takes the perspective that affordance in VE has an effect on viewers, and that viewers also make meanings. Through the textual analysis of case studies and audience responses to them, the audience study allows me to answer how the sense of cultural presence is generated in DIA. Unlike quantitative audience studies of immersive media, the approach applied in this study is a qualitative way to examine the audiences' introspection and their subjective understanding of DIA works. The immersive media researcher Mel Slater

(2004, p. 3) questions approaches to the research of ‘presence’ that heavily rely on the questionnaire-based methodology, which ‘draws on respondents being able to reasonably compare a given situation with a number of other situations, and then (usually) make a quantitative assessment’. Slater (2004) argues that in the quantitative approach, there can be no evidence that presence in VR played any role in the audiences’ actual mental activity or behaviour at the time of the experience. He further points out that, to some extent, questionnaire-based studies may be ‘thought of as hypothesis generators rather than as reaching conclusions’ (Slater, 2004, p. 10). Thus, while Laia Pujol-Tost and Erik Champion (2007) attempt to verify the validity of the concept of cultural presence in VH in a quantitative questionnaire-based way, they point out that a qualitative framework is also needed. Furthermore, Pujol-Tost (2018) believes that cultural presence refers to the feeling that people belonging to a specific culture occupy or had occupied in the past (virtual) environment. This is different to spatial or psychological presence requiring examination or observation of one’s own mental and emotional processes (see Chapter 2). More research on audiences’ introspection in relation to cultural context is needed to develop the concept of cultural presence.

3.3.1 Using focus group for data collection

To observe how cultural presence of DIA is generated and how it has impacted on cultural experience among Chinese audiences, this study uses focus groups to gather the reactions of the recruited participants to the selected works. Focus groups are one of the more established tools of social research that became popularised late in the 20th century, notably in marketing, product development, and public opinion or policy research (Barbour & Kitzinger, 1998; Bennett et al., 2009; Bloor, 2001). ‘The group is focused in the sense that it involves some kind of collective activity – such as viewing a film, examining a single health education message, or simply debating a particular set of questions’ (Kitzinger, 1994, p. 103). So, it is an appropriate method to investigate participants engaged in a collective activity of experiencing an immersive art project or exhibition. Moreover, one of the strengths of focus groups is that they can re-order relationships of power between researchers and research participants. Sue Wilkinson and David Silverman (2004) outline the ability of group members to claim or re-claim the agenda of the discussion, and to refuse or resist narratives imposed upon them by researchers. In a study such as mine, recognition of these types of re-

ordering was important, and focus groups were at their most revealing when it came to learning about the participants' cultural and aesthetic experience. Moreover, focus groups can encourage a great variety of communication from participants – tapping into a wide range of understandings (Kitzinger, 1994). In this study, during the discussion, participants could remind each other and express their in-depth understanding of the immersive art projects/exhibitions. Therefore, the focus groups were only conducted by the researcher after the participants had viewed the selected case studies (i.e., Case Studies 1, 2 and 3).

The recruitment of participants occurred in tandem with the selection of case studies. When each case study was confirmed, the recruitment process for its focus group was conducted. All the participants were recruited without incentives. The recruitment information was spread on WeChat moments (a social media platform in China) or WeChat group (an instant messaging service for group chats on WeChat).

To maintain the quality of the focus group discussion, the participants were opt-in participants. During the recruitment, I tried to select participants who were of a younger age, around 18–28 years old. In the context of China, the younger generation is the mainstream consumer demographic for VR. According to a report by HTC Vive (2017), most of China's VR users are born in the 1980s and 1990s; with China's market for VR expanding year by year, the younger people born in the 1990s are regarded as having considerable market potential. Moreover, according to the interviews with the practitioners, many of the VR users and visitors of immersive art exhibitions are young people. To further help focalise the discussion about DIA in the focus group, I skewed the selection of the participants to ensure they have a background in art, or cultural or media studies. Finally, as a precondition of their recruitment, the participants need to have known about or used AR/VR devices, and that it was their first time viewing the work selected for their group.

For the audience study, each work was assigned a focus group for discussing the participants' experiences (see Table 3-3). In the first study, involving *Boost Your Art Energy*, each of the nine participants randomly chose one of the four virtual rooms to have an eight-minute virtual experience. During the viewing, participants were assisted by the art gallery staff. As part of the exhibition experience, the staff provided a brief introduction about the exhibition and the artist, and how to use the VR device. For the second study, each of the 11 participants had about 10 minutes to view *Shenyou Dunhuang*. This was enough time for participants to complete the whole audio-guided tour, with spare time for them to explore the exhibit by

themselves. For this viewing session, the participants had input audio guidance with Chinese subtitles. In this way, I was trying not to influence the participants' viewing experience while providing necessary assistance on the use of the VR headset. For the third study, the on-site staff provided brief instructions to every participant before they experienced *The Worlds of Splendors*. Participants had around 40 minutes to take in the exhibition. The seven participants experienced the four immersive artworks together.

The researcher conducted a semi-structured focus group discussion with the participants after viewing the respective work. In order to focus on the factors influencing the art reception of DIA, key topics were formulated to frame the semi-structured questions (see Appendix A) used in the three focus groups. These key topics include the following: 'the most liked and disliked parts of the work'; 'the understanding of the cultural elements in the work'; 'the understanding of the artistic meaning in the work'; 'the feeling of the immersive technology used in the work'. During the discussion around the key topics, participants were encouraged to expand on these topics and give their individual ideas about DIA.

Table 3-3 Summary of the focus groups

| Focus group | Name of case study | Date | No. of participants |
|-------------|---------------------------------------|-----------------------------|---------------------|
| 1 | <i>Boost Your Art Energy</i> (2019) | 28 th April 2019 | 9 |
| 2 | <i>Shenyou Dunhuang</i> (2018) | 14 th May 2019 | 11 |
| 3 | <i>The Worlds of Splendors</i> (2019) | 24 th May 2019 | 7 |

3.3.2 Data analysis

The discussion in focus groups was recorded using a recording pen, and the transcripts were analysed using NVivo software. In order to summarise or compare a few participants' views, I coded their names in order. For example, Participant 3-1 means the participant who is the first speaker in case study 3. Moreover, since the framework of cultural presence was not well developed in the field of DIA, I applied open reading to separately examine the data in the three focus groups. Open coding pertains to the categorising of phenomena through close examination of the data. Firstly, the data in the three case studies were coded using conceptual labels based on the word frequency facilitated by NVivo and on reoccurring themes identified through close reading. NVivo was favoured for its capacity to deal with large-scale qualitative materials like the focus group discussions and interviews in this study.

Some concepts emerged from reoccurring themes in the focus group discussions, and accordingly, I categorised the concepts that pertain to each other or share similar meanings. Finally, based on the definition of cultural presence and the theoretical framework of aesthetic illusions (outlined in Chapter 2), I chose ‘illusion’, ‘playfulness’ and ‘authenticity’ as the significant concepts which are the most likely to explain audiences’ perception and the sense of cultural presence in DIA. These concepts, as facilitated by NVivo analysis, not only framed the participant responses in the focus group data but also guided more open findings. During the categorising process, I also drew on findings from other approaches in this study. For instance, when I analysed the concept of authenticity, which relates to viewers’ admiration of specific cultural artefacts, I found out that the surrounding environment of art also influences viewers’ perception of authenticity. According to the data obtained from the perspective of production and political economy of culture, some entrepreneurs choose to exhibit DIA for commercial purpose. Hence, I related commercial elements to viewers’ perception of authenticity in DIA to explain how exhibition venues influence viewers’ cultural presence.

3.4 Additional data collection

Additional data was collected to reduce the limitations in the research design and to facilitate my study of audiences outside China. In his book *Documents of Life*, originally published in 1983, sociologist Ken Plummer (2001) uses a wide range of life documents as research tools, including diaries, letters, photographs, films, tombstones, and suicide notes. However, British sociologist Clive Seale (2004) notes that there are more life documents beyond those identified by Plummer in the present day, which include websites, advertisements, minutes of meetings, newspaper reports, medical records, and paper releases; the list is endless. ‘All of these can be and have been used by researchers studying particular social and cultural processes’ (Seale, 2004, p. 273).

As previously mentioned, the researcher could not view the works in person due to scheduling constraints. Case Study 4, *Beijing 8-Minute Show* (2018), happened before this study started, while Case Study 5, *Blueprints* (2020), was exhibited during the COVID-19 lockdown. Therefore, I collected publicly available documents as the substitute data for the closing reading of these two case studies. The additional data includes online footage,

didactic materials, exhibition catalogues, and trailers on the internet, and interviews in mainstream media coverage.

For the same reasons, the audience study was not able to be conducted as I had originally designed (see section 3.3), so the additional data, such as art critiques from media reports and online reviews by internet users, was collected and used for analysing the disparity among Chinese and foreign audiences. There are two reasons for doing this. Firstly, as high profile events, the art critiques and online reviews for these two case studies are easy to collect. Secondly, media workers (e.g., reporters and art critics) and internet users are also considered as audiences. Florian Schneider (2019) defines three orders of audiences for his study of international mass events. The ‘first-order audience’ is the spectator who witnesses the works first-hand. However, in terms of high-profile international events, such as the opening ceremony of the Olympics, most audiences do not have the chance to see them in person. The ‘second-order audience’ includes media workers and critics who filter, rework, and relay the event on the ground, create the mass media products, and provide semiotic signposts to understand the event (Rauer, 2006). They normally have the chance to view the work first-hand and make meaning to the ‘third-order audience’. The ‘third-order audience’ consists of viewers and readers who experience the event through other media, especially through digital relay technologies associated with the internet; they are not passive audiences, since they experience the mediated events and leave comments for others on the internet (Schneider, 2019, p. 66). Hence, as I will demonstrated in Chapter 6, the data in relation to the ‘second-order audience’ and ‘third-order audience’ was collected from mainstream media and online video platforms such as YouTube for the audience study.

3.5 Conclusion

Spending about nine months conducting fieldwork in China was a rewarding experience. It not only trained me as a researcher but also gave me a complete view of the context of DIA and digital creative industries in China. Despite the rapid development of DIA and digital creative industries driven by digital technology, especially in regard to VR and AR, there are still gaps between cultural production and audience reception.

The research design for this study is not without shortcomings. One shortcoming is that most of the focus group participants had similar backgrounds in the arts, media, and design. This

shortcoming points to more work that needs to be done through focus groups with different groups of audiences, such as foreign audiences outside China. In addition, some of the artists that I had planned to interview were difficult to reach, so alternative materials such as publicly available interviews from mainstream media and their keynote speeches from conferences were used to supplement the data. However, these documents would not have provided the same level of accurate answers as the interviews. Despite these shortcomings, the multi-perspectival approach is appropriate for conducting research in relation to DIA and for my fieldwork research design and practice. As a kind of digital art, DIA is more accessible to public audiences, compared to sculptures and paintings. For example, *Blueprints* (2020) encountered the COVID-19 pandemic in early March 2020. The VR installation *The Eternal Wave* (2020) at the exhibition was turned into an augmented-reality work – accessible on any mobile phone – in collaboration with Acute Art, enabling audiences to experience it despite lockdown restrictions. Hence, the data for the textual analysis of cultural products can be collected related to multiple versions of the work. Furthermore, Case Study 2, *Shenyou Dunhuang* (2018), is available online, and viewers can leave comments on the internet platform, which provides an alternative way to collect the audience data. With the popularity of VR HMD and the ‘metaverse’, more DIA works will appear on the internet, and users will leave more traces for future research.

Finally, this methodology serves to answer the research questions respectively in each chapter. Chapter 4 draws on the interviews with practitioners to explore the production of culture through DIA in the context of digital China. The audience study of the three case studies is in Chapter 5; this approach is used to reveal the cultural presence of DIA drawing on viewers’ subjective experiences. Lastly, a combined approach incorporating close readings of Case Studies 4 and 5, together with audiences’ reactions outside China, is used in Chapter 6 to further explore how DIA influences China’s cultural presence in the world.

CHAPTER 4

Economic and Cultural Dynamics of Digital Immersive Art in China's Creative Industries

This chapter considers DIA as cultural products adopting digital technology, and investigates the dynamics of DIA and the mechanisms regulating their use in China's creative industries. Historically, art has had many roles and functions. It has been used as display, adornment, and even spectacle (Grau, 2003). It has had a non-commercial aspect, notably the gift economy, in which artworks are exchanged without requiring payment. In recent decades in China, art has become a business, and this brings in new and different actors into the art world (Berger, 2008). Moreover, as I have discussed in Chapter 2, digital technology has also offered new opportunities for artists to expand their horizons and reach new audiences. The 'value' of DIA, therefore, can be analysed from an economic perspective (i.e., contribution to economic growth) and from a cultural perspective (i.e., contribution to aesthetics and the diversification of cultural elements).

The study of the economic and cultural value helps in discovering the functions of digital technology, commerce, and culture in cultural production, which in turn enables an analysis of the effect of these factors on generating cultural presence through DIA. Cultural presence in this chapter refers to audience's cultural experience of DIA rather than China's soft power. In order to explore the implications of digital immersive technology on audiences' cultural consumption of DIA works, I examine the role of different actors (creators, entrepreneurs, and curators) in the production, drawing on practitioner interviews. In doing so, this chapter examines the factors motivating practitioners in their creative works, the messages they want to convey to audiences, and how practitioners' intentions influence the effectiveness of DIA in generating cultural meanings. Moreover, according to the interview data, the convergence of art and business in China's creative industries has given DIA both economic and cultural value. Therefore, the other aim of this chapter is to investigate the collaborations and tensions between the business and art spheres.

The analysis in the chapter mainly draws on the in-depth interviews with practitioners, including producers, entrepreneurs, curators, and staff members who work in art institutions.

In addition, selected examples of DIA are explored to contextualise claims made by interviewees. These showcases are examples of how DIA is commercialised and how DIA is consumed as a kind of cultural product. The examples include works by teamLab, which is an art collective based in Japan; *The Worlds of Splendors* (瑰丽) (2019), an immersive art exhibition in Nanjing Deji Art Museum; *The Unspeakable Openness of Things* (2018) at Red Brick Art Museum in Beijing; *Maybe it's Time to Refresh the Art World a Little Bit* (2019), Wang Xin's solo immersive art exhibition in Hong Kong K11 art space; and *Lost in play: Find the lost one hour of life* (2019) at CHAO art centre in Beijing. I analyse the details concerning the making and use of these works, or the motivations of their creators.

4.1 The dynamics of digital immersive art in China

The Chinese government has invested in DIA activities with the intention of using digital technology to promote China's national innovation. It uses public funding to not only support the sustainable development of art creation but also to guide cultural production. More importantly, at the same time, private investors and enterprises have also entered the field of DIA. For example, according to the interview with Yang Juzhe (interviewee E-1), the investor of the immersive exhibition *teamLab: Dance! Art Exhibition, Learn & Play! Future Park* (2017) in Shenzhen, this project received 200,000 RMB (about US\$30,000) funding from the local government, while Yang's art investment company, Shenzhen Blooming Culture Investment Co., Ltd, also invested 27 million RMB (about US\$3.9 million). In this commercialised sense, DIA becomes a cultural product following the rules of the market economy; however, it is also a vehicle for conveying cultural and artistic content. Cultural novelty is produced in the cultural sphere and, in turn, also becomes part of the production of economic novelty and value in the process.

From the political economy perspective, this process can be divided into three parts: production, distribution, and consumption. According to Yu-Yu Chang et al. (2021), the central premise of the value chain is that creativity and culture are constructed and negotiated by three key actors: (1) cultural producers, (2) intermediaries, and (3) cultural consumers, that respectively correspond to the three parts. The product values are not only perceived by consumers simply in terms of the fulfilment of utilitarian or functional purposes but also the values associated with the symbolic meanings of culture and the arts. The production dynamics are complex, involving different actors in the value chain. The intentions of

creators and intermediaries (entrepreneurs and curators) are reflected in the production, discovery, selection, testing, and refining of cultural products (Chang et al., 2021). In order to explore how DIA creates economic and cultural value, this section will use value chain analysis to examine the different aims of the creators, entrepreneurs, and curators drawing on a number of in-depth interviews with them.

4.1.1 Creators as the cultural value producers of digital immersive art

Creators of DIA use artistic creativity, existing cultural elements, and the facilitation of digital technology to produce cultural products. It is easy to discover that successful DIA products have the capacity to integrate these three factors. TeamLab's art projects are considered such examples. TeamLab is an art collective based in Japan, and their work has attracted global audiences and promoted Japanese culture to the world. In 2015, the Japan Pavilion of Expo Milano exhibited two immersive artworks by teamLab. Teamlab's immersive art exhibitions, which are inspired by nature and traditional Japanese aesthetics, are facilitated using immersive digital technology. Many of their artworks use VR cave automatic virtual environment (CAVE) to represent Japanese culture. For example, in the Shenzhen exhibition, one of the works, titled *Crows are Chased and the Chasing Crows are Destined to be Chased as well, Transcending Space* (2017), is an interactive digital installation in which viewers can walk around in an immersive space surrounded by projections on all sides. In the immersive space, viewers can see crows, rendered in light, flying around the space, leaving trails of light in their paths, while creating cursive forms depicting Japanese calligraphy (teamLab, 2017).

In order to form new creative content, artists integrate existing cultural elements and contextual idiosyncrasy into cultural production (Chang et al., 2021). Cultural IP, which is derived from the concept of intellectual property (IP), is one such term used in China to describe the use of existing cultural elements in the creative industries. This term was frequently mentioned by the interviewees to express how an iconic cultural element is used in the cultural products. The term refers to the cultural invention that connects and integrates different cultural products with high recognition value and the capacity for monetisation, similar to the IP of the Disney entertainment conglomerate. In China's creative industries, cultural IP became a buzzword after some successful cultural projects agglomerated famous

Chinese cultural IP with cultural products. For instance, Tencent (a Chinese technological company) collaborated with and incorporated the cultural IP of the Mogao Caves in its mobile game *Honor of Kings* (王者荣耀), which increased the reputation and revenue of the game.

To enhance the audience's understanding of China's culture, creators also make new meanings of the existing cultural elements in DIA. As interviewee C-3, who works at Deji Art Museum, said, there are many Chinese cultural elements in Case Study 3, *The Worlds of Splendors* (2018). Case Study 3 tries to interpret traditional Chinese artworks in the context of contemporary China. The digital artwork 'shanshui' and 'jiayuan' (‘山水’和‘家园’, lit. trans. ‘landscape’ and ‘homeland’) is inspired by the seminal Chinese painting *Qianli Jiangshan* (千里江山, lit. trans. *Thousands of Miles of Rivers and Mountains*) by Wang Ximeng from the Song Dynasty. In the digital artwork, visitors can view digital installations featuring Wang's renowned 'qingshan lvshui' (‘青山绿水’, lit. trans. ‘indigo mountain and green river’) and experience the view of the mountain from *Qianli Jiangshan* under the water via the immersive projected images. *Qianli Jiangshan* is a famous cultural IP not only because it is cultural heritage, but also because it has been represented in many films and television programs in China. For instance, in December 2017, *Qianli Jiangshan* was featured in National Treasure (国家宝藏) which is a culture and museum discovery television program in China.

The artwork also connects the traditional cultural elements in *Qianli Jiangshan* with China's contemporary mainstream values. The didactic panel (Figure 4-1) of the artwork states:

Our traditional values are often linked with the concepts like 'tianxia' [‘天下’, lit. trans. ‘under the sky’], 'jiangshan' [‘江山’, lit. trans. ‘rivers and mountains’], and 'jiayuan' [‘家园’, lit. trans. ‘homeland’], which are different from the concept of state/regime in the Western world. These concepts are perhaps more about cultural belonging and awareness, worldviews, and spiritual existence. From babbling babies to elders, the Chinese people are bound together as a community through the shared ideas of ‘homeland’ or ‘mountains and rivers’.

While the concept of 'jiangshan' (‘江山’) connotes ‘nation’ and 'tianxia' (‘天下’) connotes ‘the world’, the equivalent contemporary term would be ‘Community of Shared Future’ (‘命运共同体’). This concept was officially proposed as a Chinese ideological value in Xi Jinping's (2017, as cited in X. Zhao, 2018) work report to the 19th Communist Party of

China (CPC) National Congress. Inspired by ancient Chinese wisdom (i.e., Confucius), this concept represents China’s vision of a more justice, secure, and prosperous world where China sees itself as a builder of world peace and contributor to global development (X. Zhao, 2018). According to the information in the didactic panel, through using both traditional Chinese culture and immersive technology, this artwork is an interpretation of the significance of how China and the Chinese understand the ‘Community of Shared Future’ political slogan.

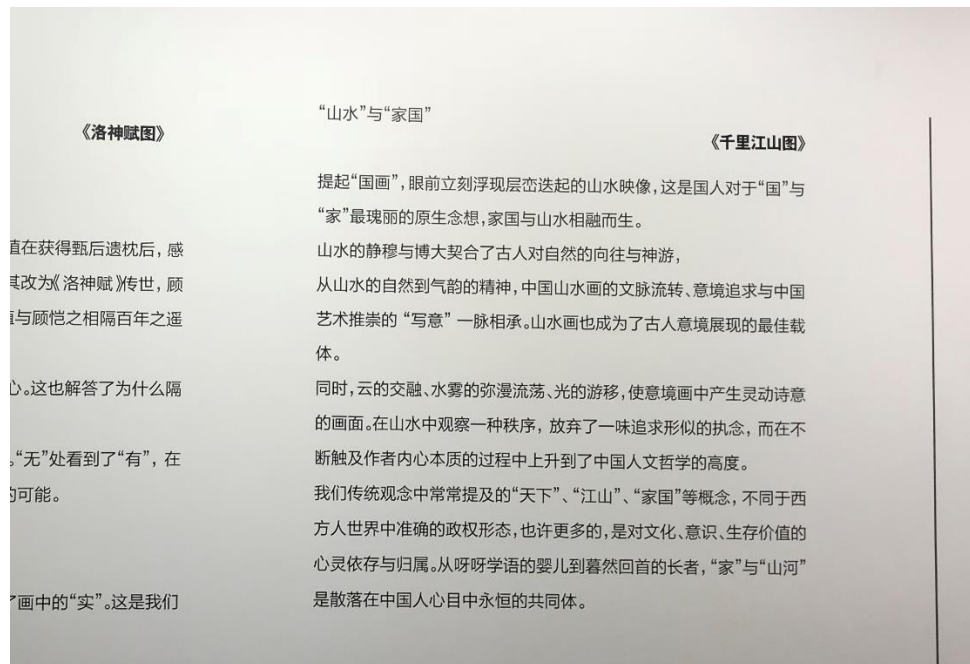


Figure 4-1. Part of a didactic panel at *The Worlds of Splendors* (2018).

Oriented by this policy, start-ups and creative studios in creative industries related to VR and digital technology have received funding from the government. In the context of digital China, the policy formalised in ‘Made in China 2025’ and the 13th Five-Year National Development Plan (2016) (see Chapter 1) also support DIA development. The emerging VR industry is considered the opportunity for changing China’s national identity from ‘Made in China’ to an innovative country (as discussed in Chapter 1). In the policy document for the 13th Five-Year National Development Plan of Strategic Emerging Industries (2016), the development of the VR industry became China’s national strategy in the new era. However, some creative studios have realised the difficulties in receiving such financial support from the government. As Cai Songyan (interviewee Cr-1), the founder of YC Virtual Reality (易辰 VR), said:

Start-up companies like us don't know how to apply for government funding, and then the government can't find us [to give out the funding]. Yes, I think it's kind of nonsensical. However, virtual simulation is a big market in China. In the past, China was a country that used machines to make slippers and clothes, and now these industries have moved to South-east Asia, so China needs to find new types of industries that cannot be replaced by machines within a short time. I think digitalisation [like VR] is an opportunity.

The interviewee, Cr-1, is not satisfied with the current policy in relation to VR industries, but on the other hand, he believes VR-related industries in China are promising. Interviewee E-7, Peng Junxi, the founder of a VR technology company in Shenzhen, shared a similar opinion. He preferred looking for industrial investment rather than spending more money to hire additional staff to read the government policy and apply for funding.

The above-mentioned phenomenon reflects the ambivalent circumstance of 'Digital China': the government has set up digital technology as the national strategy, which likely promises a future for the field of VR, but the disconnect with the supporting policy has triggered the entrepreneurial spirit, which in turn results in the commercialisation of DIA. Facing the difficulties of receiving government funding and the cost of research and development (R&D), creators also need to consider the economic value of DIA in order to adapt to the substantial market in China. The two DIA exhibitions discussed in this interview session (i.e., Case Study 3 and *teamLab: Dance! Art Exhibition, Learn & Play! Future Park*) were ticketed and exhibited to enhance the aesthetic experience of retail space. Art in the retail environment has a novel attraction factor, therefore increasing a shopping mall's traffic; 'it also promises to improve a mall's image and perceived value, thus helping to achieve differentiation and possibly reducing customers' price sensitivity' (Vukadin et al., 2018, p. 278). Although this does not mean creators need to master all the skills in terms of cultural understanding, commercialisation, and digitisation, the cultural production of DIA is no longer a purely artistic creation. As producers of cultural value, artists in China have integrated their resources (i.e., creativity, artistic skills and technological skills) to infuse new subjective meanings into works, while at the same time considering or fostering the commercial value of DIA as a new and high-cost art media to be accepted by more audiences. The value of iconic cultural elements and the newness of DIA used or created by the creators are, then, selected by the intermediaries (entrepreneurs) and adopted as profitable cultural

products. The following sections will further analyse the relationship between the cultural and economic values in DIA from different perspectives.

4.1.2 Entrepreneurs as the economic value inspectors of digital immersive art

This section focuses on the aim of entrepreneurs to take DIA from the cultural sphere to the commercial arena. The *teamLab: Dance! Art Exhibition, Learn & Play! Future Park* (2017) showcase in Shenzhen will be examined to illustrate how DIA engages with business. This exhibition is an example of the commercialisation of DIA in China. The entrepreneurs as intermediaries play a significant role in the commercialisation of the showcase. In 2016, teamLab launched its first solo exhibition, *Living Digital Space and Future Parks*, in Silicon Valley. According to media reports (Davis, 2016), this exhibition had 65,000 visitors in its first three and a half months (the gallery had initially projected 30,000 visitors for the run). Since then, some of China's cultural and art institutions have invested in teamLab's art projects and brought them to China. TeamLab has presented different immersive art exhibitions and art installations in different cities in China, such as Shanghai, Beijing, Guangzhou, Shenzhen, and Wuhan. Significantly, teamLab tried to localise some of these exhibitions by assimilating Chinese cultural elements into the artworks. For instance, in the Guangzhou exhibition, the artwork *Born from the Darkness a Loving, and Beautiful World* (2019) allows viewers to touch Chinese characters projected on the walls, making dynamic images appear that embody the meaning of the characters; these images could eventually be recognised as representations of Chinese oracles.

In order to explore how teamLab's art engages with business and influences the diffusion of cultural value, I interviewed an investor of the Shenzhen exhibition, Yang Juze (interviewee E-1). He believes that immersive experiences have significant market value to be gained from potential ticket revenue. After viewing the exhibition by teamLab at the Japan Pavilion of Expo Milano, interviewee E-1 decided to invest and bring teamLab's digital arts to Shenzhen. He described his perception of teamLab's art exhibition at Expo Milano as follows:

I don't know much about technology. But after I experienced the works, I think there is market potential, and everyone will like them because I have been shocked by them. I have never seen such beautiful works presented with

immersive digitalisation. When I went in, the lights dimmed, and the devices displayed the lotus [flowers].

Before teamLab's immersive exhibition was commissioned for Shenzhen, its commercial value had already been tested in Beijing. As interviewee E-1 mentioned in the interview, teamLab's immersive exhibition in Beijing had achieved significant ticket revenue before he invested in the Shenzhen project. As the media reported (PIKAPIKA, 2019), teamLab's Shenzhen exhibition at the OCT Creative Exhibition Centre attracted more than 400,000 visitors. The entry ticket fee, which made interviewee E-1 a substantial profit from the exhibition, was the main revenue source as the return on investment.

Even though this exhibition had received commercial investment, it is still considered a public cultural project. OCT Creative Exhibition Centre is located in a retail complex. It is a public exhibition centre that focuses on displaying projects in relation to commerce, culture, and creative arts. Moreover, this exhibition received 200,000 RMB (about US\$28,000) funding from the local government as a cultural and art project for mass audiences. However, interviewee E-1 said the funding from the government was not enough for its initial investment, including renting the venue, acquiring copyright from teamLab Japan, and purchasing the required equipment, so he invested 27 million RMB (about US\$3.9 million) in total from his investment company.

Interviewee E-1 agreed that the reason for him to invest in teamLab's exhibition was because of the potential business value. As he said,

Regarding public spaces, they value the social benefits, public audiences, and how public arts are operated. However, I am running an enterprise. For us, without economic benefits, without the social impact of markets, it would make no sense.

Even though interviewee E-1 agreed the exhibition is a public project which has a cultural perspective, what he expected was the economic benefits of his commercial operation. Yang highlights the significance of commerce in this public project. For an investor or an entrepreneur, the principal function or motivation is to bring the cultural product to the market and then make profit from it rather than make meaning for the product. Moreover, interviewee E-1 believes that mature cultural IP can expand cultural consumption and thus make more profits. Interviewee E-1 prefers to invest in famous existing cultural IP rather than

creating new IP. Successful IP would have already been tested by the market and can attract more audiences to the immersive art exhibition. As interviewee E-1 said:

In fact, it is really difficult to develop an IP, like Disney's, teamLab's, or some artists, including Takashi Murakami and Yayoi Kusama. Yayoi Kusama also has a digital immersive exhibition. In the past, Yayoi Kusama's works were static works, but now her works are also digitalised. The reason why audiences want to visit or appreciate the immersive art exhibition is that they know Yayoi Kusama's work. If it [the exhibition] can't generate a kind of recognition based on the audiences' admiration of the artist or their works, it is not a successful cultural IP.

The cultural presence of DIA is not simply about cultural recognition but also refers to familiarity, which means it is based on a specific cultural context. Following the idea of cultural proximity, people tend to gravitate toward information from their own culture or the culture that they are familiar with (Straubhaar, 2014). Like the example given in the interview, the reason that an audience visits Yayoi Kusama's immersive art is not only because of the immersive experience but also the familiarity with the iconic elements of her art that makes the work attractive to audiences. Yayoi Kusama has been acknowledged as one of the most important living artists to come out of Japan (Yamamura, 2015). Her works are primarily sculptures and installations, and they are based on conceptual art and show some attributes of feminism, minimalism, surrealism, pop art, and abstract expressionism. In order to attract more audiences and generate sustainable economic profits, entrepreneurs are also incentivising famous cultural IP to be presented in DIA exhibitions.

As considerable profit was made from teamLab's Shenzhen exhibition, some organisations believe teamLab has a successful business model for commercialising DIA. In light of the successful implementation of teamLab's business model in Shenzhen, the Association of Culture and Technology Promotion in Nanshan District (南山区文化与科技促进会) planned an immersive art exhibition in Shenzhen in 2019. Founded in Shenzhen in 2018, the association is a government-oriented organisation that includes member enterprises in cross-integrated fields of culture and technology. This association aims to integrate resources (i.e., funding and talents) for its member enterprises and seek projects from government and industrial fields for its members. According to the interview with managers from the association, they agreed with the business model for the commercialisation of DIA and highlighted the significance of the business value of DIA. As Liu Xi (interviewee E-8) said,

TeamLab represents a foreign intellectual property imported from abroad. It was brought into China through the exhibition in a rented venue, selling tickets to audiences. The selling point was really about the shocking visual effects. However, we also want to do something more about [Shenzhen] culture, for example, the ocean culture could be a spotlight for the city of Shenzhen [in our upcoming exhibition].

The association connects local government and entrepreneur members, and in the process, entrepreneurs are directed to follow the government directive to promote Shenzhen's culture by using digital technology. Like other industrial associations, they also need to represent and seek benefits for their entrepreneur members. Hence, the DIA exhibition with the theme of Shenzhen culture is a way to connect the resources of their member companies in relation to digital technology and cultural creativity while following the government directive. The other interviewee (E-9), He Xi, notes that economic value is essential in connecting the art exhibition, entrepreneurs, and government. As interviewee E-9 said,

The key to achieving these aims is to ensure that the returns to the businesses are essential. After all, who pays for this exhibition, and who receives profits from the exhibition?

The exhibition can be paid for by visitors, government funding, and private investors. In the value chain, entrepreneurs are the actors who examine the economic value of the cultural product. As the profit generator, entrepreneurs need to inspect whether the exhibitions can make a return on the investment.

The success in the market brings more business opportunities to teamLab, which allows DIA to be more broadly accessed by mass audiences in Chinese. Real-estate companies collaborate with DIA to add cultural value to their commercial projects. A Shenzhen real-estate company, Centralcon Group Co., Ltd, invited teamLab and its architect team to create a public space for the real estate project, C FutureCity, which has a total construction area of about 5 million square meters. The project includes office buildings, hotels, retail streets, and apartments. In order to highlight Shenzhen city, which is to be characterised by digital technology, modernisation, and creativity, this real-estate project integrates art, nature, science and technology into the urban public space (C Future Lab, n.d.). In C FutureCity, teamLab will use digital technology to create a free public installation, *Crystal Forest* (to be completed in 2023), to fit the concept of C FutureCity in terms of nature, art, and technology.

This installation is developed from *Crystal Universe* (2015), one of the DIA works in teamLab's Shenzhen exhibition. Commercialisation is one of the significant reasons for teamLab's success in China. To some extent, the relationship between teamLab and business is a win-win situation. A high quality art project can bring potential commercial profits to the investors. On the other hand, the sustainable collaboration of teamLab and business helps the value of DIA to diffuse into broader areas such as city complexes, tourism destinations, and even restaurants, which is to say that audiences can have more chances to experience DIA. As a city complex, C FutureCity is not only considered a shopping mall but a cultural destination and public space for people's daily lives. The fact that teamLab's digital installation is used as permanent public art in such a complex means DIA is starting to be accepted and adopted by the public. Therefore, when cultural products are involved in commercialisation, the issue of whether they can pass the test in the market economy to some extent influences the diffusion of their value in broader domains.

4.1.3 Curators as the cultural value keepers of digital immersive art

This section investigates the role of curators in the cultural production of DIA and their aims at curating immersive exhibitions in art museums. The analysis in this section draws on interviews with two practitioners who work in art museums and two DIA exhibitions they were engaged in. Keeping the cultural and aesthetic value is one of the curators' primary purposes for engaging DIA since they want to use DIA to enhance or maintain the reputation of the art institution. The interviewee C-3 works at Deji Art Museum (德基美术馆), which has received investment from a retail company and is located in the shopping centre, Nanjing Deji Plaza. In 2019, Deji Art Museum exhibited the immersive art project that has been selected as Case Study 3, *The Worlds of Splendors* (2019). Another interviewee (C-4) is Wang Liping, the vice-curator of the Red Brick Art Museum (红砖美术馆) in Beijing. In 2018, Wang curated an immersive art exhibition, *The Unspeakable Openness of Things*, featured the work of the artist Olafur Eliasson. According to the interviews, curators expect DIA to deliver cultural and aesthetic value to the public as a new form of art. Curators select and curate the art products to safeguard or refine the cultural and aesthetic value of the exhibitions. At the same time, however, a well-attended art exhibition can enhance the recognition, acceptance, and visibility of the art museum.

As recounted by interviewee C-3, Deji Art Museum had two reasons for choosing *The Worlds of Splendors*: the Chinese creation teams (BlackBow and GLA Art Group), and the installations' interpretation of Chinese traditional culture. As the interviewee said,

In the beginning, we chose *The Worlds of Splendors* because we felt that it demonstrated the convergence between modern technologies and culture and thus deserved an opportunity for exhibition. Moreover, they [BlackBow and GLA] are Chinese teams whose works are an interpretation of Chinese traditional culture. What our art museum hopes to exhibit is not only their technical aspects but also the essence of Chinese culture.

The use of digital technology, especially VR, in artworks and exhibitions has become a substantial trend in the field of China's art and cultural sphere. Some overseas teams (i.e., teamLab), as I have discussed, have achieved tremendous success in China. Case Study 3 is an example of presenting Chinese culture and the achievement of digital technology by a Chinese team. Interviewee C-3 believes that it is a good opportunity to display the 'modern technologies' by a national company, BlackBow, to the audiences in China. Before Case Study 3 was exhibited, BlackBow had already been engaged in some cultural events to present Chinese culture on the global stage through immersive technology. For example, it orchestrated the immersive stage effects at the *Beijing 8-Minute Show* (2018) at the PyeongChang Winter Olympic Games closing ceremony.

Moreover, Deji Art Museum believes *The World of Splendors* should help audiences better understand Chinese culture. The interviewee explained that, as Chinese teams, BlackBow and GLA should have a good understanding of how to convey China's culture through DIA. One of the roles of Deji Art Museum is to promote China's traditional culture. For example, in 2018, Deji Art Museum exhibited more than 200 prints and installation works by the Chinese artist Chen Qi that demonstrates his understanding of Chinese culture, such as 'The 24 Solar Terms' ('二十四节气') and Confucianism. The art museum, therefore, expects that domestic DIA projects by Chinese teams can display and represent Chinese culture. Case Study 3 aims to highlight the ongoing presence of Chinese culture. The digital works in the exhibition attempt to create a virtual space surrounded by the immersive projected images of Chinese fine arts to elucidate Chinese humanistic philosophy. Case Study 3 attempts to give the experience of Chinese traditional culture through immersive technology (see Chapter 3). During the exhibition, visitors can see some typical Chinese elements represented in the

digital artworks, such as Chinese landscape painting and calligraphy. Some renowned, ancient Chinese artworks and aesthetic ideas are also represented in the exhibition, such as Wang Ximeng's Chinese painting *Qianli Jiangshan* (千里江山, lit. trans. *Thousands of Miles of Rivers and Mountains*) and Zhuangzi's (Chuang Tzu) philosophical thoughts about the 'infinite'. Zhuangzi's Taoist philosophical thoughts had deeply provoked traditional Chinese aesthetics. The Chinese aesthetician Fuguan Xu (2005) notes that the spirit of Chinese art is influenced by Taoism, especially the Taoist view on life and the universe.

To convey the cultural value of the artworks to the audiences, the curators test and refine the art products. According to interviewee C-3, Deji Art Museum conducted some surveys and questionnaires with the visitors. From their research, they found that Case Study 3 was more about the immersive experience for most of the visitors rather than Chinese culture since they could not understand some specific cultural meanings in the artworks. As interviewee C-3 said,

In the end, we found that few could understand the message and comprehend the cultural significance. As such, there is no way for audiences to immerse themselves in the cultural experience. They probably just acknowledged the advanced technologies through being immersed in the technological environment. They appreciated the artistic atmosphere created by laser light, light and shadow, and screen art, instead of Chinese culture.

The interviewee further explained that to make sure the visitors can have a more comprehensive experience of Chinese culture, the museum also provided additional didactic panels and offered free guided exhibition services. In doing so, the curator believes that the additional information will make visitors understand the cultural content well, and not just focus on the immersive experience of the exhibition. Interviewee C-3 justified the museum's approach in this way:

This immersive exhibition actually only extracts elements from Chinese art. But for these works to be completely understood, the audience must understand the meaning of each element. For example, one of the works is not a literal interpretation of Wang Ximeng's *Qianli Jiangshan* because it only extracts some elements and some images from the original artefact. If the audience does not know Chinese painting very well, it is difficult for them to know what this immersive work wants to convey.

Therefore, one may argue that understanding the DIA also depends on cultural capital, which relates to an individual's education, knowledge, and intellectual skills. However, as exhibitions intended for mass audiences, DIA should consider the majority or mainstream cultural capital in China. As interviewee C-3 said,

Everyone has their own field of expertise...I'm not talking about the cultural literacy of Chinese people, but in fact, most people have not achieved a very high degree of artistic attainments, including many young people nowadays. Although we Chinese are slowly improving ourselves, we have not achieved omniscience. I think this is impossible for anyone to achieve.

In this regard, the immersive art exhibition worked in opposition to the aim of the art museum. Not only does the immersive art exhibition partially help audiences to understand the cultural meaning, but it also relies on the audience's knowledge of ancient China to understand the work.

Unlike Deji Art Museum, Red Brick Art Museum in Beijing is dedicated to collecting and exhibiting contemporary art. In 2018 the art museum curated an immersive art exhibition *The Unspeakable Openness of Things* (2018), of Olafur Eliasson's works. Similar to the information about Deji Art Museum provided by interviewee C-3, the motivation of Red Brick Art Museum in curating this exhibition is not only because of the immersive experience but also the artistic value conveyed by Olafur Eliasson's art. As interviewee C-4, who is the vice-curator of Red Brick Art Museum, said,

Because we are an international contemporary art museum, our curatorial decision is mainly based on academic, artistic, and cultural values. I would say that we decided to exhibit it not just because it is immersive art. Our first consideration was whether it fits our art museum, not whether it was immersive, when we finally made the decision about this artist's exhibition.

Olafur Eliasson has a long record of creating significant contemporary art installations using light and shadow. Red Brick Art Museum had started contacting Olafur Eliasson since 2012, when immersive art was not yet a trend in China. The subdivided building structure of the Red Brick Art Museum lends itself to creating an immersive environment for each installation. As interviewee C-4 further noted,

Our exhibition space is very large, and each hall is quite independent. In his [Olafur Eliasson's] exhibition, each immersive work suited and also required a

separate space. So, we intentionally designed the exhibition in that way, creating a separate, closed, and immersive environment for every work.

The principal reason for curation was that the artist's works were well suited to their art museum. The Red Brick Art Museum aimed to use the immersive exhibition to promote the art and cultural value of the institution.

According to the audiences' feedback and the critics' reviews, interviewee C-4 believes *The Unspeakable Openness of Things* (2018) managed to successfully promote the museum's reputation. The exhibition was not only well discussed by professionals in the field of art, literature, and architecture, but also fancied by mass audiences. Hence, in order to further promote the exhibition, Red Brick Art Museum curated four stages of dance performance based on four of Eliasson's immersive artworks in the exhibition halls. For the art museum, this was an attempt that integrated the concepts of body and immersive installation to engage with audiences. As Wang (interviewee C-4) said,

There were four dancing performances in the four exhibition halls. When we did this activity last year, it was very popular. Basically, people from the cultural, film, and music industries all came to watch it. The event was actually another climax for this exhibition. We did this not to please audiences but to interact with them. We had a total of 1,000 audience members present, but they shared their experiences widely through traditional and social media, making the exhibition very impactful. The nature of what we were doing was interpretation and translation. We hoped to transform the artist's ideas into a way that the public can accept and understand more easily.

For this art exhibition, the addition of interactive performance enabled the curator to refine the delivery of cultural and aesthetic meanings in the DIA works and foster the audiences' understanding of the body and immersive experience in the artworks. According to the other interviewee (C-3), the curators also refined the artworks in Case Study 3, such as conducting visitor surveys and adding didactic panels to reinforce the audiences' cultural understanding.

According to interviewee C-4, Red Brick Art Museum does not reject the commercialised behaviour of DIA since some commercialisation can bring sustainable development (i.e., more sponsors and visitors) to the art museum. Case Study 3 is also a ticketed and commercialised art project in a shopping centre. However, the curators of the two exhibitions highlighted in their interviews that the aesthetic quality and artistic significance of the

exhibition are more important than commercialisation. The vice-curator believes that the aim of *The Unspeakable Openness of Things* (2018) is completely different from the immersive exhibitions in shopping malls, such as some teamLab's art exhibitions. Regardless of the choice of immersive experience or the use of interactive performance during the latter part of the exhibition, Red Brick Art Museum's aim was to bridge the artist and audiences. The principal function of curators in an art institution is not just to find a way to attract more audiences or make more profits, but to deliver symbolic cultural or artistic meanings to audiences.

4.2 Generating cultural value in commercialisation

Immersive content has become a consumption trend in China's location-based entertainment industry since 2016, as I have mentioned in Chapter 1, which also provides opportunities for DIA to develop further. Entrepreneurs hope that immersive experience projects can activate cultural consumption in the market and fulfill the need to upgrade the entertainment industry. The involvement of DIA in the commercial field has, to an extent, led to the rapid development of the immersive entertainment industry in China. According to the commercial report by Illuthion (2018), the association for China's immersive entertainment industry, the number of immersive entertainment projects has grown from 0 in 2015 to 200 in 2018, and different kinds of immersive art exhibitions are one of the significant growth segments. Moreover, retail and real-estate companies are collaborating with DIA for the purpose of advertising and refining the consumption scene. According to the statistics prepared by the commercial real estate service provider RET (睿益德) (2019), scenario-based activities drawn from famous cultural IP accounted for the largest proportion (about 71.67%) of advertising activities in China's urban commercial complexes; additionally, in order to obtain relatively high quality immersive art exhibitions with famous IP, real-estate developers are also introducing preferential policies such as free rent and free advertising to the creators or investors. Therefore, real-estate developers are incentivising art displays in commercial settings.

The DIA practitioners in China's creative industries agglomerate the cultural elements, artistic creativity, and digital technology. Commercialisation plays a significant role in the production and distribution of DIA. As I have discussed in Chapter 2, in order to examine how cultural consumption impacts on the effectiveness of generating cultural presence from

DIA, a critical perspective should be taken to look at the mechanisms of DIA in China's creative industries.

4.2.1 Balancing cultural and economic value in the production of culture

Compared with traditional art production, digital immersive products require greater investment on equipment, creations, and devices. Therefore, profitability has become an important motivation. An interesting parallel can be drawn between the field of DIA and the immersive entertainment industry in China in relation to the significance of profitability.

Immersive experience has become a consumption trend in China's location-based entertainment (LBE) since 2016, and then it quickly witnessed a contraction in 2018. According to the interview with Wu Zhanxiong (interviewee E-5), the founder of Eyemax Co., Ltd, which is the first location-based VR entertainment company in Shenzhen,

2016 was the peak of the VR industry in China with the acceptance by capital and consumers, but soon the entire market was saturated. Many counterparts plagiarised our company's VR LBE products. During that period, there were few new products because the entire VR LBE industry focused on how to get investment and profits rather than creating new content for the VR LBE.

As Wu said, in order to survive in the competitive market after 2016, many companies focused on how to make profits rather than produce new content, which is one of the reasons why the industry was contracting. Although the Chinese government has a supportive policy for the VR industry as an emerging industry (as discussed in section 4.1.1), the creators need to consider the profitability of the work to offset expenditure costs. However, compared with the entertainment and gaming industries that have wider audiences, it is arguable that the profitability of DIA is more difficult to achieve. As the interviewee E-3, Huang Ruogu, who is the immersive content buyer in Veer (a VR content platform based in Beijing), said,

3D simulation is high-cost. Without enough funding, the quality of VR products is unstable, so users do not want to pay for the low-quality content.

In the creative industries, the arts can be seen as part of a more dynamic system of economic activity, with links to safeguarding and inheriting culture, fostering creativity, embracing new technologies, and feeding innovation (Throsby, 2008). When infusing new ideas into works, creators of DIA also foster commercial value in their works. For example, *Andy's World*

(2019), which is a large-scale VR work presented by Configreality Space, was exhibited at K11 art space in 2019. The creative team invented a new algorithm in VR that allows viewers to feel the infinity of the virtual world in the body of a robot whose name is Andy. Moreover, *Andy's World* applies the aesthetic elements of cyberpunk and combines them with unique imagination to explore the meaning of life in an immersive narrative. *Andy's World* won the best Chinese VR Work at the 2019 Sandbox Immersive Festival in Qingdao. After winning the prize, the creative team commercialised the work as a location-based entertainment project in a shopping mall. According to the interview with the creators Liu Liquan (interviewee Cr-3) and Huang Jiasheng (interviewee Cr-4), they did not consider their works to be authentic artworks since they would finally be used as entertainment projects. But even then, as both interviewees clarified, they still consciously distinguish their works from purely commercial projects that are only used for entertainment. They try to add some aesthetic elements and artistic ideas to their works.

However, once the value of arts gravitates towards profit margins, DIA may become a gimmick to attract more audiences and make more profits. When the gimmicks outweigh the artwork, then it is a problem. In light of China's immersive entertainment industry in 2016 (as previously mentioned), the immersive experience as a gimmick only created short term profits for some companies instead of fostering sustainable value for the industry. Hence, creators need to balance the commercial value and artistic value in their works. Guo Qinya (interviewee Cr-5), who is the producer of *Maybe it's Time to Refresh the Art World a Little Bit* (2019), described Wang Xin (the artist of the work) as a good example of this balance:

Wang Xin's advantage is that her artworks have some commercial value, and they can be commercialised. But the content of her artwork is quite interesting. There are some creative uses of hypnosis in the artworks, as well as the artist's own unique ideas and worldview. I think the combination of these two [art and commercialisation] in her artworks is pretty good.

The pop art features in the artist's works lend themselves to being exhibited at the K11 art space, an art museum at the K11 shopping centre in Hong Kong. K11 art space belongs to the K11 Art Foundation (n.d.), and is a retail corporation-owned art museum dedicated to fostering the development of Chinese contemporary art. As interviewee Cr-5 said,

This digital work has a pop art style. K11 likes this style because it can attract more visitor views; if a commercial exhibition is presented in a shopping centre,

it cannot be too ‘gaoleng’ [‘高冷’, lit. trans. ‘high and cold’, which connotes ‘elegant and inaccessible’]. Pop art has its own audience that is normally very young, so the artist can put some bold ideas and new technologies in the artworks, which not only caters to the preferences of young people but can also lead more people to accept new art forms like VR.

In the interview, interviewee Cr-5 highlighted the significant role of creators in diffusing the value of DIA and VR to more audiences. In the exhibition, viewers can see many elements of pop art (Figure 4-2), such as the artist’s signature pink colour, neon light, and wave dots. The bold colour and wave dots are widely used in pop art, which is opposite to ‘high art’ (Grenfell & Hardy, 2007), such as the aforementioned Japanese artist Yayoi Kusama’s works, for example, *Infinity Mirror Room* in 1965 and *Dots Obsession* in 1997. The symbolic pop art elements fit the aim of K11 as a museum-retail space attracting young visitors to the shopping centre, but also allow the artist (Wang Xin) to use the opportunities to deliver her specific art ideas.



Figure 4-2. The pink colour and neon light in *Maybe it's Time to Refresh the Art World a Little Bit* (2019).

4.2.2 The collaboration of cultural and commercial spheres

As a complex mechanism of production, the cultural sphere has allowed some commercialised DIA exhibitions to be shown at art museums or cultural centres. DIA works attract consumers and create value in a cultural market by embedding the symbolic meanings that cultural producers want to convey, and novel experiences facilitated by digital technology. The positioning of DIA in the intersection of cultural and commercial spheres not only delivers cultural value to the public but also enhances the mass acceptance of digital immersive media. Cultural institutions such as art museums and galleries play the role of guaranteeing that the DIA works have their cultural or artistic value. Meanwhile, entrepreneurs transfer cultural value into economic value.

VR has become a creative media diffused in art and cultural institutions. Interviewee Cr-5, who is the producer of Case Study 1, said,

I think VR will break a lot of traditional things [i.e., media and industries], so VR also needs to be accepted by all the industries, rather than just using it to make games. In the early stage, there were many large-scale VR projects presented in cooperation with museums. I think that after art museums cooperate with the more famous artists who are using VR, they will be able to pave the way for all kinds of industries to accept VR gradually. And even the next generation of artworks can be created using VR.

Gaming is one of the largest digital industry sectors, globally, that use VR (PwC, 2019b). Some big VR companies like Oculus and HTC VIVE consider VR gaming and entertainment as their main business. Nevertheless, interviewee Cr-5 believes that VR can be valued as a medium of art in its own right and this is something that should be accepted by more art organisations and other industries. In other words, art museums are perceived to be the gatekeepers for mainstream and broader acceptance of VR by audiences or for its wider adoption across other industries. At base, the adoption of immersive technology in art institutions is a way to not only prove the cultural value of immersive art but also state that immersive technology is the medium that can convey cultural values in the present day.

The VR artist and the founder of Jes Studio in Shenzhen, Huang Jiasheng (interviewee Cr-4), shared interviewee Cr-5's opinion on this, and he took teamLab as an example. As Huang said,

Artistic works have to enter a certain field [art field], be recognised by the experts [i.e., artists, curators, or art critics] and circulate in art museums and galleries. TeamLab's works were not really a work of art at first. TeamLab started its company with commerciality as its goal, and now it wants to cultivate itself as the image of public art through exhibitions in various cultural centres and art museums. However, it still has a strong commercial nature.

TeamLab is not only an art studio but also a collective whose main business is art design, commercial installation, and architectural design. Immersive art brings teamLab into the public art sphere through being exhibited in art museums and cultural centres. Moreover, the investor of teamLab's Shenzhen exhibition, interviewee E-1, also realised the audiences' question of whether teamLab's immersive exhibition is art. As the interviewee said,

[In 2018] I went to Shenzhen University to speak at a forum when teamLab was just introduced to China. An audience member who studied art history asked me a few sharp questions at the forum. The audience questioned whether such a high-tech work [DIA] is art.

In 2018, Shenzhen was the second Chinese city where teamLab's immersive exhibition was held. Even though teamLab's exhibition already had a good reputation in Beijing at that time, many audiences in other cities were not familiar with immersive arts. Since then, teamLab has exhibited in many art centres and museums, such as Party Pier Culture and Art Zone in Guangzhou and Deji Art Museum in Nanjing. Additionally, in 2019 teamLab launched a permanent art museum, teamLab Borderless, in Shanghai, to exhibit its immersive arts. As interviewee E-1 said,

TeamLab's exhibitions have turned into multidisciplinary art projects, given they were exhibited in art galleries and museums.

As evidence of the scope for further commercialisation, interviewee E-1 uses the reputation of teamLab in the art and cultural sphere to foster it as a kind of cultural IP. For instance, he has used this IP in his Shenzhen catering business, where the customers can experience immersive arts while having their meals. That is to say, he has applied elements from teamLab's works to commercialised arenas, such as his restaurants and tea rooms. He has invested and opened an immersive restaurant with artistic and nature-based themes drawn from teamLab's digital content shown at art exhibitions. According to interviewee E-1, the price per person for a meal at this restaurant is 2688 RMB (about US\$400). By using the

digital content from teamLab's artworks, customers can experience the changing of the four seasons during the meal, and they can even interact with these elements.

GLA Art Group takes a similar path for cultivating Case Study 3 as a cultural IP in China. According to its official website, GLA Art Group (n.d.), established in 2017, 'specialises in modern aesthetics reengineering and exhibition on Chinese cultural IP (Intangible Property) [sic]'. In order to cultivate Case Study 3 as a Chinese cultural IP, GLA brought it to the art sphere, for example, by holding a seminar in the National Palace Museum in 2019, and curating exhibitions at Deji Art Museum in 2019 and Guardian Art Centre, and more recently orchestrating a Chinese culture themed immersive show for a Chinese car retailer at Auto Shanghai 2021 (the 19th International Automobile Industry Exhibition) (GLA, n.d.). Even though the aims of the cultural and commercial spheres related to DIA are different, it is the current trend for each side to collaborate with the other. As a cultural product, DIA is present in China's cultural sphere with its adoption by cultural centres and art museums. The adoption by these cultural institutions reinforces DIA as a new form of art and helps it to be accepted by the public, and enables entrepreneurs to turn the cultural value to economic value and make more profits in the commercial sphere.

The founder of teamLab Toshiyuki Inoko (2019) states: 'Everyone is concerned about whether to make money or not, but the spread of culture is the most important thing'. However, cultural products that do not grasp ideas that can be turned into profitable content and marketable meanings will tend to fail (Throsby, 2008). In China, when retailers need to improve brand recognition and style, immersive art activities have become the preferred choice, replacing traditional advertising activities (RET, 2019). Compared with static window showcases, retailers in shopping malls tend to choose forms that are more experiential, interactive, and immersive when advertising their products. Consumer demand is creating opportunities for retailers to collaborate with immersive technology in the commercial sphere. According to an iResearch report, 69.4% of Chinese consumers believe VR and AR immersive technology can improve their entertainment experiences (iResearch, 2018).

In November 2017, the immersive art project *Lost in play: Find the lost one hour of life* (2017), curated by digital media artist Fei Jun and curator Jiang Jian, was held at CHAO art centre in Beijing. The exhibition was sponsored by a cosmetics corporation. The artists used multimedia installations, performance art, contemporary dance, music, modern drama, and so on, creating an immersive world that allowed viewers to pause for an hour in their busy urban

life; like the fairy tale *Alice in Wonderland*, they can be temporarily isolated from the real world. The exhibition is not only an immersive art project but also advertising for brand promotion. It attempts to link artistic experience with bodily experience while also creating an immersive makeup experience. Within the experience, audiences can view the brand logo and elegant models wearing delicate cosmetics.

The immersive arts allow audiences to actualise their daydreams and fantasy from the first-person view, which is difficult to achieve in traditional art media. The curatorial team JV communication (2018, as cited in JOYNVISCOM, 2018) believes *Lost in play: Find the lost one hour of life* has changed the relationship between audiences and traditional plays since the audiences become the protagonist in the artwork. The intervention of digital technology in art turns the spectator's passive 'viewing' into an active 'experience'. The spectators do not view the works at a distance but experience the performances inside the works; thus, every spectator becomes the indispensable protagonist in the play. Through interactive multimedia installations, performance art, contemporary dance, music, and modern drama, the artworks served to fulfil the audiences' spiritual demands. Moreover, the artists designed different immersive senses using different makeup and styles to match with the cosmetics brand. In the AR work *Twin Flower*, the digital images projected on to the dancers' faces illustrate different makeup effects (Figure 4-3). As another example, the work *The Red Queens' Banquet* adopted the elements of the rabbit from *Alice in Wonderland* into the makeup style. As seen in Figure 4-4, a rabbit dressed in a black suit dances while the model applies makeup.

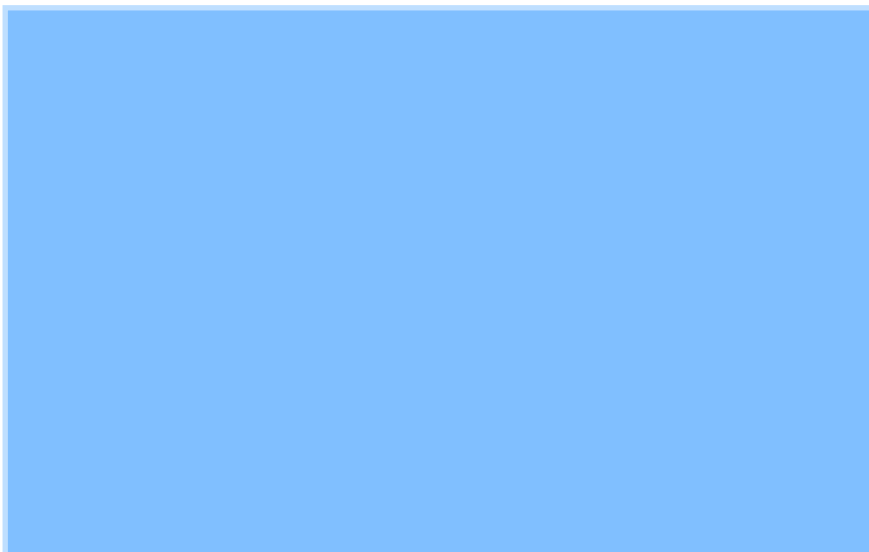


Figure 4-3. A scene from *Twin Flower* in *Lost in play: Find the lost one hour of life* (2017).



Figure 4-4. A scene showing the application of makeup in *Lost in play: Find the lost one hour of life* (2017).

Immersive arts are not only used as advertising but also generate a virtual consumption experience where customers can be immersed in the art while they are consuming it through staged immersive scenarios of consumption. This is evidence of Law's (1993) claim that experience can be detached from the real world and sold as a commodity or service. 'Once an experience is taken out of the real world, it becomes a commodity. As a commodity, the spectacular is developed to the detriment of the real. It becomes a substitute for experience' (Law, 1993, p. 4). According to a recent research, the immersive virtual experience can fulfil consumers' desires for luxury brands and relieve them from the mental burdens of their real lives (J. Jung et al., 2021). It evidences the similar function of immersive digital technology used in *Lost in play: Find the lost one hour of life*. One of the latter's aims is to actualise an artistic, petty-bourgeois, and escapist lifestyle in the virtual environment through the DIA. As a commodity, DIA in a commercial circumstance not only fulfils audiences' spiritual demands but also promises to improve their consumption experience. As another example, the cultural elements in teamLab's immersive installations were selected and refined to fulfil aesthetic demands in a luxury hotel. TeamLab's created the permanent art installation *Enso in the Qing Dynasty Wall, Beijing* (2017) in the Temple Hotel. Temple Hotel is retrofitted from an ancient Buddhist temple located in a tourism precinct in Beijing. The art installation draws on philosophical thoughts from Zen (a major Chinese Buddhist sect) and the cultural element

of traditional calligraphy to characterise the cultural image of Temple Hotel in terms of Buddhism.

Positioned at the intersection between art and retail, the immersive art experience becomes a means of directing consumers' consumption behaviour. In the 20th century, the situationist philosopher Henri Lefebvre (1991) asserted that art should be immersed into everyday life to destroy the barriers between art and life, and deconstruct and criticise the false desires constructed by the spectacle of a positive and authentic living situation, to call for the return of the real nature of human beings. In this assertion, Lefebvre highlights the function of art to critique the consumption society constructed by the spectacle of the commodity. However, in the present day, VR/AR is not only the media that advances the critical function of art but also is the digital machine that facilitates the incorporation of art into the commercial sphere. Art in the retail circumstance constitutes a novel attraction factor for increasing a shopping mall's traffic and improving its image and perceived value; however, this is not a new strategy – famous examples include Beaugrenelle and the Polygone Riviera (France), Miami Aventura (USA), Aishti (Lebanon), Parkview Green and K11 (China) (Vukadin et al., 2018). Consumers not only need to spend their income to 'enjoy' the circumstance generated from artistic experience since some of the DIA exhibitions are ticketed, but also maybe use some of their surplus labour time to spend more or stay longer in the retail environment. There is therefore no difference between DIA becoming part of the commercial mechanism either as a commodity or as a service. Thus, DIA is produced through a complex mechanism that is regulated by the government policy, fostered by commercialisation, and generates new cultural meanings for society in the context of 'Digital China'.

4.2.3 'Ticking the box' as the new form of cultural consumption

Along with the intersection of DIA and commerce, *daka* (打卡, lit. trans. 'check in'), a new way of cultural consumption, is presented on social media, particularly among younger audiences in China. *Daka*, which is the internet buzzword in Chinese, connotes going to a popular place or owning something special and usually showing it to others on social media via photographs (or short videos). In these images, people are deliberately pictured with objects or exhibition props, or located within a space in the gallery, to prove that they are physically present with the objects or space. Any place that has been viewed and posted online many times can become an influential spot with specific characteristics, such as a

restaurant famous for serving local cuisine. Michael Keane (2019) notes that *daka* is a particular type of consumption behaviour in the digital economy. For example, tourists can check online whether they have visited the most important sites; if so, English-speaking people can say they have ‘ticked that box’. As DIA with symbolic cultural elements appears more in people’s daily lives in China, such as in museums, city complexes, shopping malls, and restaurants, viewing DIA has become the ‘box that needs to be ticked’ by younger audiences in first- and second-tier cities in China.

Daka was frequently mentioned in the interviews and focus groups when participants talked about the popularity of the DIA. As Wang Liping (interviewee C-4), the deputy curator of Red Brick Art Museum, said,

What the immersive experience exhibition brings to the museum is, in fact, more audiences. These audiences are younger, and more fashionable... This new audience may not be as professional as before. [Nonetheless] It has made our museum more popular with mass audiences.

Even though interviewee C-4 notes that Red Brick Art Museum does not have a deliberate policy of curating immersive exhibitions, its curators may choose to exhibit immersive art because it is easier to generate publicity around this. Through *daka*, such immersive exhibitions tend to attract more mass audiences, especially younger audiences, to the art museum. Interviewee C-4 further stated,

In fact, because this kind of immersive exhibition does not need to be promoted to audiences, the audiences will naturally take pictures and *daka* with the work when they come to view it. This is the innate advantage of immersive exhibitions, so I think this is the reason why an audience would like to visit immersive exhibitions. The exhibitions we did before were mostly discussed and seen by experts in the art-related fields. We found that the immersive experience exhibition is especially easy for interaction and communication on social media. Under the effect of communication [on the internet], this type of exhibition has become very popular. It aroused the enthusiasm of the public to come to the museum, so we ushered in a large wave of new audiences last year.

Before the immersive exhibitions, Red Brick Art Museum was normally visited and talked about by people from the art and the cultural sphere. Immersive art exhibitions have attracted broader audiences to Red Brick Art Museum since the advent of *daka*, and DIA has become a

way for museums to connect with mass audiences more broadly. Museums can use social media to boost their visibility on the internet and attract more attention and potential visitors (Lazaridou et al., 2017). Despite the fact that aesthetic qualities were conventionally seen as central in the communication of the museum experience (Weilenmann et al., 2013), *daka* has become the new trend for museums in communicating with younger Chinese audiences. Visitors can take pictures of the exhibition, using it as a kind of background, and post these images on their social media. This behaviour and its influence on social networks have further promoted the current popularity of immersive exhibitions shown at art museums.

While viewing the exhibition *Maybe it's Time to Refresh the Art World a Little Bit*, I also conducted an on-site interview at K11 art space with staff (interviewee C-2). The majority of the visitors to this exhibition are young people in their 20s to 30s, as stated by the interviewee. When visiting the exhibition, half of the visitor's aim is to *daka* instead of appreciating the artwork. As explained by interviewee C-2:

In addition to the pink, it also combines with neon lights which form a very noticeable background, so it is very suitable for *daka* and taking pictures... I think half of the people really wanted to appreciate the artworks and understand the content, but the others just came to *daka*.

The distinctive colour and neon lights of the immersive works form aesthetic backgrounds for the pictures posted by the young audiences on social media. Documentation of traditional art forms, such as visual art and music, can be posted on social media and appreciated on mobile devices, but DIA is a kind of bodily experience and spatial immersion that cannot be easily accomplished on two-dimensional screens.

Entrepreneurs also recognise *daka* as a consumption behaviour in relation to DIA. As an investor of teamLab's immersive exhibition in Shenzhen, interviewee E-1, said,

Then they would also take pictures [of the art exhibition]. Why do we have to appreciate art exhibitions in a religious way? Why can't we play like young people? It does not have to be very serious. Art can just be a very beautiful, very imaginative, or creative thing. So, when we invest in something, we think about the capacity of influence. When something is influential, it will attract people's attention. When a thing can gain attention, everyone wants to see it. If people want to see it, I have to charge money from the audience because we are doing business.

From the perspective of economic value, interviewee E-1 considers DIA as a machine for profit, as a gimmick to attract the audience's attention through its novelty, creativity, or immersive experience. The rise of the digital economy has made cultural suppliers increasingly inclined to deploy resources to the contents that has already attracted the market or ready to be shared and liked on social media (George & Peukert, 2019; Potts et al., 2008). The type of content that is suitable for *daka*, thus, become favoured by cultural suppliers. The content of DIA received by audiences is selected, refined, and tested by the intermediaries. Entrepreneurs are in the role of regulating what audiences see and how they see it.

Daka DIA is a unique example of digital virtual consumption (DVC) fulfilling audiences' spiritual or cultural demands through cultural products. DVC (as introduced in Chapter 2) accomplishes demand-fulfilment through virtual and digital activities (i.e., online shopping or mobile games) (Denegri-Knott & Molesworth, 2010). As discussed, *daka* is online behaviour, and DIA is a form of virtual content. In China, WeChat moments and *Douyin* (抖音, the Chinese version of TikTok) have become popular online platforms to see and post the *daka* content. It is a way to construct a new self that exists both in physical and virtual worlds: 'I *daka*, therefore I exist' (W. Sun, 2020, p.6). Social media create a co-presence of audience, which motivates people to project a self of who the user is as a being (Aguirre & Davies, 2015). *Daka* is the online evidence to show that the audience was physically present with the arts. For the self on the internet, DIA thus becomes a background for takeing pictures and an instrument for showing off on social media. If such a critical decision about *daka* is being made by Chinese mass audiences, then it can be surmised that DIA paradoxically also has the capacity to engender the neglect of cultural or artistic value.

Products and services in cultural markets often provide symbolic content for achieving higher-order benefits, such as spiritual satisfaction, self-fulfilment and cultural identity (Venkatesh & Meamber, 2006). However, according to my fieldwork observation, the immersive experience may attract many viewers at the early stage (e.g., many visitors go to buy tickets and even wait in long queues to view the exhibition), but in the end, viewers find that the experience these exhibitions is not as good as non-digital exhibitions in terms of the delivery of cultural value. (In the next chapter, I will discuss this further from the perspective of the audiences.) Hence, it is also a critical question for cultural suppliers in the future to either increase the artistic value of the content to fulfil audiences' cultural demands, or generate another gimmick to attract new viewers – or seek a balance between the two options.

4.3 Conclusion

In this chapter, I have introduced the main actors: creators, entrepreneurs, and curators in the DIA value chain and examined their roles and motivations in cultural production. Creators who bring cultural meanings to DIA produce the value of cultural products. Entrepreneurs and curators are intermediaries of cultural production. Entrepreneurs, as the market inspectors of cultural products, aim at using the value of DIA to make profits. Furthermore, curators expect to use digital technology and cultural value to augment the reputation of the cultural institutions they work for. From the analysis, digital immersive technology is the glue linking these actors together in creating and diffusing the value of DIA. Even though these actors play different roles and have different purposes in the dynamics of DIA production, their creative practice is in line with the state's directives of applying digital technology to prosper China's digital creative industries. DIA lowers the threshold of perceived accessibility to cultural content resulting in new population segments of consumption demand, while at the same time enhancing the mass acceptance of digital immersive media, such as VR and AR. In this context, the ambivalence towards the function of digital technology also exists in the chain of production. Creators use digital immersive technology to create works, but the cost of DIA is relatively higher than other conventional art forms. Even though the government offers some financial support, the creators still have difficulties receiving the funding. Entrepreneurs consider VR and AR as legitimate platforms to attract more consumers, but they also realise the value of cultural elements is not unreasonably more important than technology in making profits. Hence, entrepreneurs somehow prefer investing in a famous existing cultural IP rather than creating new IP by supporting niche artists or art projects. Curators have realised that digital technology sometimes cannot help audiences foster their cultural capital through DIA, but the newness of the digital immersive technology can bring more audiences to the museums, especially younger audiences.

According to the examination of the dynamics of DIA production, it is not difficult to find that commercialisation plays a significant role in the mechanism of cultural production. Creators bring new ideas, creativity, and cultural meanings to DIA, while also needing to consider the capacity of the works to be profitable so as to offset the expenditure on the creation costs. The entrepreneurs from the commercial sphere and curators from the cultural sphere collaborate with each other to deal with the commercialisation of DIA. As a result,

with the adoption of DIA in the cultural sphere, DIA becomes a new form of cultural product consumed by mass audiences, and the entrepreneur cultivates the cultural value of cultural IP which can enable them to make more profits in the commercial sphere. Moreover, the commercialisation of DIA is boosted by the new form of cultural consumption, '*daka*'. *Daka* can be understood as a superficial way to appreciate works by focusing on taking pictures and posting them on social media. Even though cultural institutions and retailers can use DIA works to gain proximity with younger audiences, these audiences also complain about the superficial features that some DIA works have. Audience study can provide a critical perspective to look at the function of DIA. Audiences also make meanings about the cultural products and share their discontent/opinions regarding cultural products (Dolfsma, 2004a; Hartley & Potts, 2014). Therefore, in the next chapter, I will discuss how audiences in China experience and consume DIA within the mechanism of cultural production.

CHAPTER 5

Illusion and Playfulness in Virtual Reality: Generating Cultural Presence through Digital Immersive Art

One of the advantages of VR, according to its proponents, is how the experience can transcend time and place while allowing the viewer to recognise the interplay of familiar cultural elements. This is what I refer to as cultural presence in VR. Cultural presence is viewers' experience in VR of being in a specific (familiar or unfamiliar) cultural context at a specific time (E. M. Champion, 2010). For example, a European viewer immersed in a VR work that simulates the Forbidden City of 200 years ago; ideally, the distance between the viewer and the work is collapsed when the viewer is immersed in the cultural context and this may change the viewer's preconceived perception about Forbidden City.

The previous chapter provided a critical perspective for looking at the cultural production of DIA and how viewers react to DIA as a cultural product. This chapter deepens this discussion by drawing on viewers' experience data since, as I have discussed in Chapter 4, audience reception is another significant perspective in this study. In many cases, there is disparity between VR creators' intentions and audiences' reception. Chris Milk (2015), an entrepreneur and immersive art creator, has a much-discussed assertion about audience experience in VR; he claims that VR creates 'the ultimate empathy machine' since VR allows a user to empathise with another person deeply. However, some scholars and art critics claim that what the user has experienced is not real empathy since 360-degree video of VR is sometimes just a first-person point of view without a 'phantom-subjective image' (Hassan, 2020; Messham-Muir, 2018), and empathy requires a permeable boundary between 'me and you' allowing two people to mingle in a shared mental space (Rifkin, 2009). As I have discussed in the previous chapters, China's government wants to use digital technology to rejuvenate Chinese culture; and cultural institutions in China hope VR can augment viewers' cultural experience. In light of the dynamics of DIA production (as discussed in Chapter 4), I focus on whether there is disparity between the cultural institutions' display intention and the viewer's actual experience of VR.

Therefore, this chapter explores two questions: how does VR impact viewer's reception of cultural presence (about China) of DIA; and how do Chinese audiences react to the effect of VR in presenting Chinese culture? To this end, I interrogate case studies that highlight cultural elements about China in the work and viewers' responses to them. Three case studies are used, namely Case Study 1, *Boost Your Art Energy: 8-Minute Guided Session* (2019); Case Study 2, *Shenyou Dunhuang* (神游敦煌) (2018); and Case Study 3, *The Worlds of Splendors* (瑰丽) (2019). These three case studies feature immersive experiences and engage different cultural elements (i.e., traditional Chinese culture and popular culture). Empirical data from focus group discussions are used to evidence the arguments and analyse the factors generating cultural presence. The arguments are based on reoccurring themes from the focus group data. *Illusion*, as imaginary experience, is used to examine how viewers perceive cultural meanings of DIA works. I use the concept of *playfulness* to investigate viewers' preconceived ideas and the technological affordance which generates the cultural framework in VE. I question the *authenticity* of DIA through the ambivalence of viewers' perception of Chinese culture in terms of real artefacts and virtual works of art. To present a better understanding of, and to contextualise, the participants' discussion in the focus groups, I introduce the contexts of display for the three case studies in the first section.

5.1 Introduction to the case studies

In the focus groups, I observed that participants' feelings about the VR experience are shaped, to some extent, by the actual content of the artwork. For example, one of the participants in Case Study 1, *Boost Your Art Energy: 8-Minute Guided Session* (2019), when expressing his feelings about the artwork, described what he saw and how he interacted with the objects in the VE. Hence, to better understand the participants' discussion, a brief description of each experience will be introduced in this section. This includes some of the cultural contexts of each work, the type of immersive experience, how reactive to the viewer in each work, and how interaction is triggered; it also includes the description of case studies in information (e.g., flyers) that is presented to viewers before and after their experience.

5.1.1 Case Study 1: *Boost Your Art Energy: 8-Minute Guided Session* (2019)

Boost Your Art Energy: 8-Minute Guided Session (2019) is the VR work featured in Wang Xin's (2019) solo art exhibition *Maybe it's Time to Refresh the Art World a Little Bit* (2019) at K11 art space in Tsim Sha Tsui, Hong Kong. K11 as a retail uses the art space to engage with consumers and collaborate with young artists. Case Study 1 is a spiritual, mystic, and immersive virtual-reality artwork that aims to recharge one's 'art energy' (X. Wang, 2019).

This work employs a VR head-mounted display (HMD) which offers 6 degrees of freedom (DoF) experience to the users. The interaction in VR is triggered by hand controllers. Within the artwork, users are given a choice to activate one of four guided sessions separately in four virtual rooms. As the eight-minute guided session activates creativity within each user, it attempts to tell viewers that everyone has 'art energy' that can be depleted, recharged, and utilised at will. This 'art energy' is related to an individual's artistic creativity generated from human emotions. A female voice acts as a hypnotist in the VR experience, guiding viewers in the dream-like environment and bringing them out at the end. According to a flyer about this artwork, the moment users put on the HMD, 'they are thrust into a dream-like state freed from conventional space, time, and reality'. Wang is also a certified hypnotist and uses her work to alter a viewer's perception and affect their subconscious (DeSearthe, 2019).

Before the VR experience, the participants have already inferred some basic ideas about the art exhibition from the flyers available at the exhibition venue. In the exhibition, the participants can see the artist's signature use of pink adding to the hypnotising effect and installations composed of art-related slogans (e.g., 'we will change the art world', 'a museum lost in time'). The use of these bold colours, and duplicated elements of dots and slogans in typographic font, intends to build a cultural context in relation to pop art for viewers. As I have mentioned in Chapter 4, the cultural element of pop art attracts younger audiences more than 'high art' (Grenfell & Hardy, 2007), which conforms to K11 as a 'Museum-Retail', a convergent space of art and retail.

5.1.2 Case Study 2: *Shenyou Dunhuang* (神游敦煌) (2018)

Shenyou Dunhuang (神游敦煌) (2018), presented by National Taiwan University imLab and Dunhuang Academy (Han et al., 2019), is a virtual heritage (VH) project. Like Case Study 1, this work is also a VR HMD offering 6 DoF experience. However, it is not a project exhibited in a physical place but is a free downloadable program from Steam, a popular VR content platform. This project features the 3D simulation of the Mogao Caves (莫高窟), a cultural heritage site in China. Even though it is classified as a game on the VR platform, Case Study 2 attempts to bring the cultural and artistic experience of the Mogao Caves to its viewers. As Han et al. (2019) of this project note, *Shenyou Dunhuang* intends to provide viewers with a better cultural understanding of the Mogao Caves through the interactive experience of the virtual artefacts and displays.

The Mogao Caves, in the western Chinese city of Dunhuang, are an icon of Buddhist culture in China. As an iconic cultural heritage site in China, the Mogao Caves have been displayed in many digitised projects such as *Digital Dunhuang – Tales of Heaven and Earth* (2018) in Hong Kong Heritage Museum and *Mysterious Dunhuang* (2017) in OCT Creative Exhibition Centre of Shenzhen. Owing to the popularity of the Mogao Caves in China, the viewers in Case Study 2 have some pre-existing knowledge of Dunhuang from different resources, such as exhibitions, documentaries, archives, and textbooks, before viewing the VR work, and some of the viewers had even previously visited the Mogao Caves.

This VH project allows viewers 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 it is digitally reconstructed, re-appearing vividly in the VR work. In addition, the viewer in the VR can watch some interactive videos which illustrate the stories behind the murals, such as Mount Wutai and *Avatamsaka Sutra* (华严经变) (Han et al., 2019).

5.1.3 Case Study 3: *The Worlds of Splendors* (瑰丽) (2019)

The Worlds of Splendors (瑰丽) (2019) at Deji Art Museum in Nanjing is a collection of immersive art installations attempting to elucidate Chinese aesthetics and philosophy with

digital immersive technology. The main part of this exhibition consists of four cave automatic virtual environment (CAVE) works with projected images on the walls. Visitors can view the four works via connected corridors. When visitors walk through specific areas, their interactions are triggered by tracking sensors. Moreover, to build an aesthetic circumstance, some physical installations, such as mirrors and strips of translucent paper, are added to the virtual environment. As in conventional art exhibitions, visitors can read an introduction on the didactic panels. In addition, free guided tours are provided to give visitors a better understanding of the artworks.

This exhibition attempts to foster the cultural understanding of traditional Chinese artifacts and philosophical thoughts with immersive technology, as I have mentioned in Chapter 4. The first artwork, *Accessing the Realm through Cloud Reel* (云轴入境), generates a dynamic spectacle in the style of Chinese landscape painting inspired by Zhuangzi's (or Chuang Tzu's) philosophical thought. Zhuangzi was a famous philosopher of ancient China in the Warring States period. The second work, *A Thousand Miles of Rivers and Mountains* (千里江山), uses some elements from the Chinese painting of the same name, which was created by Wang Ximeng when he was 18 years old during the Song Dynasty. The third work, *Goddess of the Luo River and Neon Dream* (洛神霓梦), is inspired by a tragic love story of the Goddess of the Luo River (洛神) and includes elements of the Chinese painting *The Ode of the River Goddess* by Gu Kaizhi in Eastern Jin Dynasty. The calligraphy of the same name produced by Cao Zhi in the Three Kingdoms period is also represented in the work. The fourth work, *At the Deepest Part of the Blossom* (百花深处), is inspired by *Scroll Painting of Blossom* (百花图卷) from the Song Dynasty. This work allows visitors to experience the view from lying under the flower bush in an immersive environment.

5.2 Illusion as a 'reception contract' with viewers

In the following sections of this chapter, I present an analysis of focus group data based on participants' experience of the works that I introduced above. From the perspective of art reception, the illusion is the acceptance of a 'reception contract' (Wolf, 2013, emphasis in original) which is 'the willing suspension of disbelief for the moment' (Coleridge, 1950, p. 194). To create a sense of presence with DIA, artists use the immersive strategy to allow viewers to recentre themselves in a virtual environment (VE). Viewers temporarily have the

illusion of believing the environment that they are immersed in is real. Long before virtual art, the strategy of using immersive images was utilised by artists to generate the illusion of 'being there'. For example, as discussed in Chapter 2, *The Battle of Sedan* (1883) by Anton von Werner is a painting 115 metres long and 15 metres high. Standing on a panoramic viewing platform, which has a diameter of eleven metres and corresponds geographically to a plateau near the village of Floing, the spectator is surrounded by a circular painting depicting the battlefield (Grau, 2003). Moreover, there are many details in the work attempting to represent the real sense of the battle. 'One believes that one is standing in the surging midst of the terrible battle', and 'it is exactly as His Majesty the Kaiser is reported to have said: It does not look painted at all; it is reality' (Grau, 2003, p. 98). In this sense, the viewers accept the '*reception contract*' in relation to the illusion of presence on the battlefield.

Realism is one of the strategies to generate the illusion of presence in immersive art. In realist works, the represented world is much the same as the real world. As per Walter Benjamin's (2008) assumption, advanced technology can guarantee the material relationship between the original and its reproduction. For example, 3D virtual simulation technology allows details of the objects to be accurately captured and constructed in VEs, thus enabling users the experience of being there as if in the real world (R. Chen & Sharma, 2021). However, presence is not only restricted by the rules of the actual world but also is capable of triggering the sense of being beyond the real world. As Richard Wages et al. (2004, p. 223) suggest, 'art and in particular, VR art should not routinely and self-evidently be restricted with real-world constraints'. With the affordance of digital technology, especially VR, immersive art can create a virtual world beyond the actual world, as Jean Baudrillard (1988, p. 173) says, where representation is replaced by simulation and reality shifts to hyperreality. In line with the two kinds of ways generating the illusion of presence, the following sections focus on examining viewers' experience of Case Study 2 (a mirroring of cultural heritage), Case Study 1 (a virtual world beyond the actual world), and Case Study 3 (how viewers use rationality to understand the culture in a VE).

5.2.1 Incongruities in realist virtual environments

Realism is not only the mirroring of the real world, rather it refers to whether or not the VE provides the real experience expected by the user, both consciously and unconsciously

(Gilbert, 2016). Realism proposes an objective reality in VE that makes viewers have a subjective perception of being in the real. Case Study 2 is an online VH simulating the Mogao Caves. The focus group participants responded to the cultural presence in the VH in realist terms:

It is more realistic; it offers more detailed viewing. As a whole, it also creates a sense of immersion of being in Dunhuang. (Participant 2-1)

It has restored the colour changes of hundreds or even thousands of years. I can feel the colour of this mural [as if it was painted] today, as well as what it looked like 500 years ago, or even 900 years ago during the Five Dynasties period. (Participant 2-3)

After that, whenever the participants described their experience of Case Study 2, they normally compared their experience in the VE to their previous experience in the real world. Their comments reflect how realism is a subjective perception based on viewers' preconceived ideas. The participants who had been to the real site commented that 'it is similar to the real cave' (participant 2-3) and that 'it feels like what I experienced out there in the past' (participant 2-8). Moreover, participant 2-3 said he felt he was not there in the cave in the present-day, rather he felt he had been taken back hundreds of years. In the design of the project, the illuminated part of the mural is the default setting that shows the mural's condition 500 years ago; triggering the controller restores the mural to what it looked like 1,000 years ago when it was originally painted (Figure 5-1) (Han et al., 2019). The evidence is in line with the cultural presence, which is the feeling of being in a particular place and time within the cultural context of the work. While realism helps generate presence in VEs, it may nonetheless divert the viewer's attention towards the incongruities of the information instead of fostering the feeling of presence in a specific cultural context. In the following paragraphs, I analyse the focus group data to provide evidence for this argument.

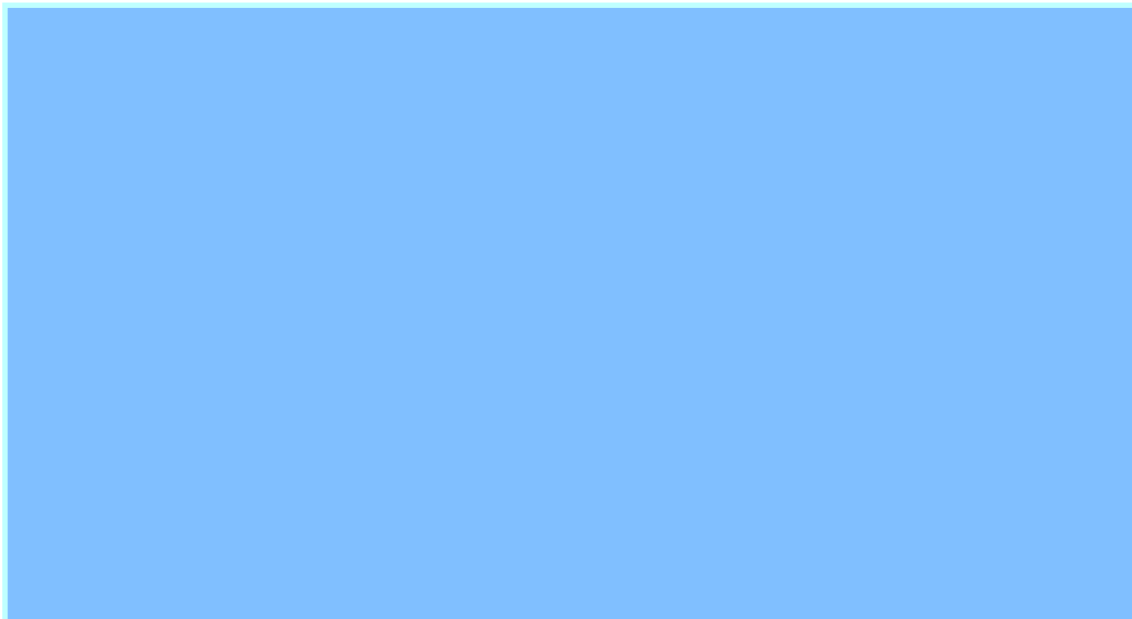


Figure 5-1. Image of the restored mural (left) and image of the default mural (right) in *Shenyou Dunhuang* (2018).

There are several examples demonstrating that some participants paid attention to the perceived incongruities, for example, in terms of the resolution, colour difference, and VE design, and compared these with their own previous experiences and perceptions:

There are no problems with the technology, just some [issues with the] details. I will just mention a very simple finding. I found some lines on the [projected] walls to be curved...they are not straight. In the real world, how could the walls be curved? Just this little detail. (Participant 2-6)

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...However, [the creators] should consult some of the better experts in this area to restore authenticity. It is inaccurate. It represents the cave 500 years ago but restores the colour [of the murals] to 1,000 and 100 years ago when it was the period of the Five Dynasties in China. It is not very precise in this aspect. I think it has not been created by experts in cultural relics restoration or archaeology. (Participant 2-8)

As demonstrated above, a participant also questioned the accuracy of the project. Participant 2-8, who had learnt this about the cave from other sources previously, questioned the accuracy of the restored colours. The restoration aims to provide a more realistic presence in the cultural context rather than prompting viewers to question its accuracy. Therefore, the affordance in VE becomes a paradox: the more realist the VE is, the more viewers are willing to accept how real it is; however, when the VE is not as real as expected, viewers may feel less immersed in it. The following examples provide more evidence to prove this point.

Some participants who had been to Dunhuang found the experience in the VE to be below their expectations:

Regarding visual experience, I felt that what I saw was pretty new, without the sense of antiquity in Dunhuang. There was a subtle sense of disparity from reality. (Participant 2-1)

I have been to Dunhuang before, though I did not visit this particular cave. Regarding this cave, I felt that technologies had over-glorified it. In reality, you can find a kind of trace of history in the cave, [in] which [the surface] is quite mottled. (Participant 2-3)

The authenticity of a VE depends on how affordances are able to meet viewers' expectations. According to the discussion with the focus group, regardless of whether the participants had visited the Mogao Caves, they brought their impression of the real cave to the VE. Even with the participants who had not been to the caves, they had some preconceived ideas based on their prior knowledge.

When the affordances were not able to meet their expectations, the viewers felt that the VR was unimpressive. They had expected to experience authenticity before being immersed in the VE. However, the realist environment paradoxically prompted viewers to instead see details that they thought were not real enough. In addition, this VR allows users to view the details again and again, and to look into the dark interior of the cave, which means it allows for more capacity (than the real site) for viewers to question the incongruous information. The following is another example of how a participant paid more attention to the details when she realised the simulation was virtual:

Since I have seen the real one [i.e, the cave], I know very well that this is virtual. Then I also looked at its pixels and resolution. Then I tended to look at its

technology and see how high the resolution was. I kept wanting to compare the differences. (Participant 2-3)

As discussed in Chapter 2, Champion (2006) suggests cultural learning is one of the significant functions of VH. However, realism may be helpful to some extent but is not essential to the experience of VH or, more broadly, of VR arts. An increase in realism might paradoxically lead to a decrease in believability since participants use their ‘recognition of reality’ to detect incongruities (Wages et al., 2004). Moreover, due to the current limitations of VR technology, including the pixelation and resolution issues mentioned by participant 2-3, it is not possible to present every detail of the actual objects and spaces accurately as predicted by Benjamin (2008) to the point where there is no longer any difference between original and copy. As participant 2-6 said, the technology (VR) is not the problem, rather there are problems in the details. The participant found the walls were curved in the VE, which is not realistic in the real world. Even if this case study is one of the most authentic VR works of the Mogao Caves currently available, VR still cannot fully replicate all the details without them being recognised or called into question by viewers.

5.2.2 Illusionary perceptions in the virtual world

Realism is not the only way of fostering the sense of presence for viewers. Illusionistic VE provides an alternative way to make viewers feel presence in the cultural context of a virtual world. VR allows for the creation of *fantastic* worlds, the very worlds we can never visit in reality (Wages et al., 2004, p. 223, emphasis in original). A virtual world is not a world mirroring the actual world, rather its users still can have the sense of being in a virtual space, described as ‘*presence without immersion*’ by anthropologist Tom Boellstorff (2015, p. 112, emphasis in original). Online video games like *Second Life* and *The Sims* create platforms where users can communicate and engage with each other in virtual worlds. Even though more virtual worlds (such as *Rec Room*, a VR game) have included the rich experience of more realistic immersion, many of the most popular worlds have just used cartoonish graphics rather than be driven by a technological fantasy of realism (Boellstorff et al., 2012), which is to say realism is not the necessary condition of presence. As I have mentioned, Case Study 1, with its animation-style design, is a built-up virtual world that does not exist in the

real world. Instead of considering it as a simulation of the actual world, the participants felt that they have entered a new and virtual world. For example:

The third room is particularly unreal, with a sense of unreality. It is completely different from the room Yuechen [participant 1-4] had chosen for the ancient Greek sculpture because that room actually had references to real art, realistic art. But my room was a completely unreal and animated room, so it was very different from the real experience. I felt that for me, the animation frame rate or the wearable technology didn't give me a strong sense of isolation. It didn't make me feel like it [the world] existed. When I entered that world, I forgot about the discomfort of wearing the headset or the unreality of the animation. Instead, such unreality gives you such a strong sense of contrast, or such a strong sense of illusion, that it brings a different kind of reality. (Participant 1-3)

This reminds me of Spielberg's movie *Ready Player One*. After putting on the headset, I entered another world. Although you are right next to me, I can't see you at all with my eyes, just virtual reality, so the immersion is great. (Participant 1-6)

When comparing the artwork Case Study 1 with reality, participant 1-3 used terms such as animation, illusionary, and unreal to describe the VE she was immersed in, which is contrary to reality. While in this kind of alien environment, she felt 'this space is real in the virtual world'. In this artwork, the animation elements are significantly different from the look of the actual world. Nevertheless, participants also regarded the virtual world of DIA as a kind of reality. In other words, the viewers had a sense of presence in DIA because they were willing to accept the 'reception contract' with the virtual world beyond their preconceptions.

The 'reception contract' with the virtual world is important in generating presence in DIA. As I have introduced in section 4.1.1, Case Study 1 aims to trigger viewers' artistic creativity generated from their emotions in the context of popular or contemporary urban culture. As the participant reported,

I feel modern and contemporary art explores the loneliness and isolation in urban life, as present in many such artworks. This work is presented in VR immersive art. It will make you think about emotions that are neglected in real life and will drag your emotions into this lonely and isolated situation, especially negative things. The design of many scenes [exemplifies this], such as seeing a person

dancing in a room and the suddenly a huge whale flies overhead in the air; also, for example, [seeing] many people sitting there meditating. Each object [featured in the work], coupled with a transparent presentation method, renders a lonely and very sad scene. To be honest, in the process of experiencing [the work], I felt really lonely. (Participant 1-1)

The participant was in a lonely and isolated place which evoked in him the pre-existing experience when he appreciated some other contemporary artworks in the past. Some modern and contemporary artworks take loneliness as their theme to convey the isolation and alienation of urban society, such as Edward Hopper, the artist whose works evoke loneliness and disappointment in urban life (Peacock, 2017). Urban society has its specific cultural context, which was perceived by the participant from the isolated and spectacular VE. The participant linked his loneliness and feeling of isolation with the affordance in the VE, such as the single dancer and mediating people in the room. The work is not executed in a realist style but creates a spectacular world beyond the preconceptions of the normal world, such as the incongruous size of the whale flying in the room and the transparency of the objects seen in the VE. However, these incongruities did not generate the participant's disbelief but instead generated a sense of being in the lonely urban life. Wolf (2013, emphasis in original) calls the kind of imaginative experience that exists between the real and the *as-if-real* a 'quasi-experience'; it is one of the important conditions for producing aesthetic illusions, an ideal mental status when recipients are immersed in the artistic world. DIA can induce viewers to centre themselves within an imaginary world. When viewer is perceptively in the imaginary world, cultural presence coinciding with a quasi-experience experience from the immersive narrative is generated.

5.2.3 Cultural understanding in the 'reception contract'

Further to the use of the imagination, viewers also use their rationality in relation to their cultural background or knowledge framework to understand the work of art (Wolf, 2013). Participant 1-1's feeling of loneliness or alienation in urban life and the cognition about modern and contemporary art, as mentioned in the previous section, can be interpreted as the cultural capital that has helped him make sense of his experience in the virtual context. The significance of cultural capital is also evidenced in another example, the virtual work *At the*

Deepest Part of the Blossom in Case Study 3. Apart from the immersive experience, presence in this work is also generated through the interaction with the affordance of VE. For example, projected flowers appear under the viewers' feet as they walk by. In the focus group discussion, a participant thought of it as 步步生莲 (*bubu shenglian*), which is a Chinese idiom meaning a lotus blooming with every step of the way (Figure 5-2):

When interacting with the artwork, I think the idea of 步步生莲 [*bubu shenglian*] is good. There is a flower following in your step. I like it. But the butterflies on the wall are just average. (Participant 3-6)

Bubu shenglian originates from *Chuke Pai'an Jingqi* (初刻拍案惊奇) (1627), which is a collection of short stories from the Ming Dynasty. This idiom is used to describe a woman's graceful gait. When participant 3-6 walked by the interactive spot, her imagination about blooming flowers may have been triggered, creating the feeling of being in the illusionary sense of this Chinese idiom. The triggers for identification with the cultural presence depend on the viewer's understanding and knowledge since different people may have different understandings of *bubu shenglian*, and some might not even know this idiom.



Figure 5-2. Photo of participants engaging with *At the Deepest Part of the Blossom*.

At the Deepest Part of the Blossom is also inspired by *Scroll Painting of Blossom* (百花图卷) from the Song Dynasty. *At the Deepest Part of the Blossom* attempts to represent

the mass of blossoms in the painting. Viewers experience the blossoming of the flowers through the eyes of a little bug. Some participants lack the knowledge to understand the context of being immersed in the flower bush like a little bug, so they cannot use their imagination to generate presence, as the title of the work states, ‘at the deepest part of the blossom’:

I don’t quite understand what a bug’s perspective is, so I checked it with my mobile phone. The perspective of some insects is actually not the diamond shape shown in the exhibition. Those diamond-shaped mosaics are messy, and they are not from the perspective of little bugs. This makes me feel very unreal, and I don’t feel [it is] like being in nature. (Participant 3-5)

In this example, the viewer’s rationality plays a significant role in the sense of presence. As the participant reported, even though she found the relevant knowledge on her phone, she still could not connect a tiny bug’s view with what she experienced in VE. She lost the sense of being there in the VE. Other participant discussions in Case Study 3 also demonstrate the significance of rationality in understanding or appraising the works:

I think although this exhibition is immersive, I didn’t particularly get the themes from beginning to end. I knew it wanted to promote the traditional Chinese paintings and so on. and let us know them better, but I don’t think this exhibition has a theme of Chinese culture. It just wanted to promote traditional Chinese painting. (Participant 3-6)

If not for the guides at the beginning, we might not be able to understand it well. In the end, it will have this result: when we think of *The World of Splendours*, our clearest memory is not the culture they want to reflect, but [we only remember that] we took a lot of beautiful photos there and how gorgeous and beautiful the exhibition is. I think if [the exhibition] doesn’t emphasise the cultural aspect very well, they [the creators] may end up putting the cart before the horse. (Participant 3-3)

As I have discussed in Chapter 4 and in this chapter, the artworks in Case Study 3 are based on the cultural context of the profound Chinese humanistic philosophy. As the interviewee C-3, who works for this exhibition said, cultural understanding is required for viewers to be immersed in the cultural context of Case Study 3 (see Chapter 4). The elements used in the

artworks are based on traditional Chinese fine arts that have already been built as a cultural framework in many viewers' minds. It is true that this exhibition, to some extent, evoked viewers' awareness of Chinese culture; as participant 3-6 mentioned, Case Study 3 'just wanted to promote traditional Chinese painting'. However, viewers can acquire such cultural awareness from other cultural products. As some participants mentioned, prior to experiencing the digital version of *Qianli Jiangshan* (千里江山), they had already viewed the authentic work, and it has appeared in many other cultural mediums such as TV programs and films. The participants may feel familiarity because proximity in the cultural context can provide a sense of presence, the particular feeling in DIA, to viewers. However, cultural presence also needs their understanding of the cultural elements.

If cultural understanding is absent, there is a distance between the artworks and viewers. Theoretically speaking, the physical distance between VR and the viewer is dissolved in VR, thereby increasing the sense of immersion. However, DIA communicates with viewers indirectly, depending on the cultural context or framework represented by the artwork. According to Benjamin (2008), distance is not only an attribute of the arts but also involves the subjective view by readers. When a viewer is at an art exhibition, his/her responses are guided by the artist's representation. At the same time, both representation and recipient are affected by the cultural context of creation and the cultural background of recipients (Wolf, 2013). The lack of cultural context and/or cultural understanding causes distance between the artwork and its viewers.

In order to illustrate the cultural context and aesthetic significance, the curator of Case Study 3 provided didactic panels and audio guides for each artwork. When viewers are present in the act of viewing, the distance between viewer and artwork momentarily disappears, which is what many artists would like to achieve. However, if a viewer is unable to understand the artwork because of a lack of awareness of its context, the viewer is at a distance (opposite to presence). As participant 3-3 has said, if she could not understand the works well, her most impressionable memory would not be the culture aspect. Didactic materials are used to raise the viewer's awareness of understanding the context of the art. They are less used in art forms like plays and films, which have more presence effect, and arguably DIA tries to achieve this as well. However, once the presence of the cultural framework in DIA is reliant on information presented in didactic panels, or based on the reputation and visibility of the cultural elements, as the participants reported, then the immersive technology itself becomes

gadgetry for achieving a novel experience or spectacular background for taking photos, rather than a way of helping viewers understand the cultural meanings.

In summary, viewers have expectations and motivations for receiving an immersive cultural experience in VEs, which is not only met by the feeling of being there but also by the sense of being immersed in the cultural context, stories, or histories. The ‘reception contract’ in terms of the illusions in the virtual world is negotiable, which does not mean that artists and viewers sit together to negotiate a work of art, but rather that a viewer is able to accept moments of disbelief in the virtual world. VE is the agent to communicate between the artists/designers and the viewers. To have cultural presence, DIA artists encode cultural meaning in their art to facilitate self-reflection; viewers perceive the immersive experience generated by VR and use their ‘horizon of expectation’ (i.e., knowledge and preconceived ideas; see Chapter 2) to decode the cultural context and make meanings.

5.3 Playfulness as the illusionary experience of cultural presence

In the following sections, I use the concept of playfulness² (play) when considering the viewers’ illusionary experience of DIA as a way of further exploring how VR generates cultural presence. As demonstrated in the focus group discussions, viewers consider the experience in VR to be game-like and sometimes this game-like experience contradicts the perception of cultural presence. Playfulness, as a part of cultural practice, also has connections with illusion. Since the 18th century, playfulness has continually been defined by illusion (Scheuerl, 1997); ‘being at play...means stepping into the imaginary sphere for a specific time without fully surrendering to it’ (Nielsen, 2009, p. 265). From this perspective, playfulness has emerged as an imaginary way of perception in terms of how that perception differs from the real world, similar to the aesthetic experience of illusionistic cognition. The famous hypothesis by aesthetician Friedrich Schiller (2004) even goes so far as to propose that art originated from playfulness.

In the present day, people’s desire for playfulness is aroused by the use of advanced technology, especially AR and VR in games. Playfulness has different roles across the

² In some references, ‘play’ shares the same meaning as ‘playfulness’. This study uses ‘playfulness’ to distinguish itself from another meaning of ‘play’, that is, ‘a dramatic work for the stage or to be broadcast’.

different ages. Cultural historian Johan Huizinga (1998) expands the concept of play into a more general picture which includes the process of human evolution and cultural practice. He believes that playfulness is a fundamental function of human beings and their culture; in fact, it is its origin (Huizinga, 1998, as cited in Nielsen, 2009). However, the function of playfulness seemed to weaken during the industrial epoch. Max Weber (1946) diagnoses the industrial age as one that is disenchanted with the world, where playfulness was separated from work, and people were not inclined to play anymore. More recently, some scholars suggest that the desire for playfulness seems to have returned, and where Homo Sapiens are once more involved in Homo Ludens (Jeon & Fishwick, 2017). With the affordance of digital technology, people use their smartphones for hunting monsters in their gardens (e.g., *Pokémon Go*, an AR mobile game) and children use controllers to paint in 3D space (e.g., Tilt Brush, a VR painting application). Playfulness seems to be an inseparable part of human beings. As Huizinga (1998, p. 3) notes, ‘You can deny seriousness, but not play’.

5.3.1 Playfulness as the game-like experience of VR

The study of playfulness in this section focuses on what digital game elements can be used in the arts to generate playability, and how preconceived ideas about digital technology/games generate playfulness in VEs. Playfulness in DIA is a game-like experience but it is not in itself a game. The distinction between playfulness and game is often not very clear since, in many languages, their meaning is the same, or when one term is derived from the other (Boellstorff, 2015). Huizinga (1998) defines three characteristics of playfulness. First, all playfulness is voluntary activity; second, playfulness is ‘a stepping out of real-life into a temporary sphere of activity with a disposition all of its own’; and third, playfulness is ‘play[ed] out within certain limits of time and place’ (Boellstorff, 2015, p. 23). Games share some of these features with playfulness. The rules of play are the core concept for game design, yet the significant characteristic of reward/goal-oriented motivation does not lie in play (Boellstorff, 2015). Moreover, applying game design theories or elements to VR arts does not necessarily lead to playfulness. As the researcher and game designer Stephen Guynup (2016) argues, the idea of teleportation, which has been learnt from game design, is often used as the default entry position for initiating works in virtual arts and virtual words, rather than generating playable experiences.

Game design theory is applied in many VR projects, for example, virtual heritage (VH). Erik Champion suggests adding tasks in VH through the affordance of VE. Reward and task finishing are critical elements in game design; however, virtual worlds and 3D art galleries are not created for playable and win/lose outcomes. Nevertheless, Guynup (2016), proposes that some gaming tropes, such as game-like teleportation from one location or context to another without transportation or walking, are needed in a virtual gallery. The artworks in my case studies were designed to be 'game-like' through the application of game elements. For example, Case Study 1 (*Boost Your Art Energy: 8-Minute Guided Session*) applies game-like teleportation and game user interface.

In the focus group discussion, many participants mentioned that they felt like they were playing a game. When I asked the participants what impressed them most in the experience, some of the answers were related to playing in the VE. As participant 1-7 of Case Study 1, which featured pink balls and animation designs, said, 'the clearest memory is playing with pink balls. Yes, I have been playing with pink balls'. Given the elements of gaming and interaction used in virtual arts, it may not be surprising that viewers feel like they are playing in VEs. However, the focus group data demonstrates that playfulness exists in the reception of DIA, which is coincidentally similar to the feelings when playing a game since the participants have a preconception of VR as an advanced digital technology that is often linked with games. As a flagship digital technology, VR is considered as a future media for gaming. In the present day, many VR games are about high technologies, such as *Echo VR* (an online VR game), which allow global users to experience sports in a spacecraft (Graham, 2020). Moreover, some ideas in VR games are originally from science fiction novels or movies. The technological features of VR in the case study trigger the viewer's imagination for playing games. As participant 1-7 explained, the technological attributes reminded him this is a game for playing since he related the aesthetic experience to his imagination about VR formed through science fiction:

It has a kind of technological element, which gives us a sense of playability. It reminds me of the VR game in Liu Cixin's science fiction novel *The Three-body Problem*. When putting on clothes [in that fictitious VR game], players can feel the temperature, humidity, and strength. I think if that can be done [in the actual VR], the experience will be much better. (Participant 1-7)

The Three-body Problem (2014) is Liu Cixin's science fiction novel. In the novel, the author describes a VR game that allows users to play different roles in a metaverse. Metaverse is a hypothesised iteration of the internet, supporting persistent online 3D VEs.

Case Study 1 reminded another participant, 1-6, of the virtual world in the science fiction movie *Ready Player One* (which was also quoted in section 5.2.2):

I think of the sense [of immersion] in Spielberg's movie *Ready Player One*. After putting on the headset, I entered another world. Although you are by my side, my eyes can't see you at all. There is only virtual reality, so I feel very immersed.

(Participant 1-6)

Ready Player One (2018) is a science fiction movie that uses the concept of the metaverse to describe a gaming universe in the virtual environment. From the analysis of the two participants' discussion in the focus group, there is a spontaneous link between VR technology and gaming in viewers' imaginations. The focus group responses also explain why participants consider VR art as a form of entertainment rather than a cultural product when the game-like experiences become dominant in the reception. The immersive art aroused the viewers' imagination about VR and reminded them of playing a game in the VR.

Owing to the application of VR and game design elements, DIA makes a viewer feel more like a 'sensational player' or a VR gamer rather than a reader or elucidator of an artwork. The cinema and media theorist Vivian Sobchack (1992) notes that sensation and intellection can emerge as perception. VR can arouse people's sensations when they experience VR content, for example, the feeling of nervousness and overreaction when users play VR shooting games (Bender, 2021). The technological affordance in VE largely evokes sensation in viewers, which allows viewers to centre themselves in a virtual world which they can view, become immersed in, and play with. However, as Sobchack (1992) has discussed, both sensation and intellection play roles in human perceptions. Presence is generated when the sensation of physical distance is dissolved, and viewers are still in their 'right minds' and able to 'read' a representation. In the following section, I investigate how critical viewers read playfulness in cultural presence.

5.3.2 The magic circle and virtual heritage

According to the focus group discussion, when the affordance of VR structures highly formal, integrated worldviews (i.e., cultural identity or religion), viewers tend to use their preconceptions to appraise the cultural value of the work. The technological affordance in VE allows the capacity of DIA to build up the ‘magic circle’ of playfulness. In the magic circle, actual rules are replaced by the rules of playfulness (Huizinga, 1998). The magic circle (Huizinga, 1998, p. 13) emphasises the ‘not serious’ features of playfulness as well as the suspension of ‘ordinary’ life. In DIA, the magic circle suspends real-world rules and reality, replacing them with an artificial reality, since the technological affordance not only isolates the real world but also generates new rules for a virtual world. Owing to the ‘not serious’ feature of playfulness, viewers in VE have the capacity to behave in ways that are against the norms and mores of the real world. This is evident in the focus group discussion based on Case Study 1. As participant 1-3 reported,

I am very destructive in [the VR world], but there are many things in it that I cannot destroy. Even if this could be done, there would be no obvious effect, but I’d love to destroy everything, as I lose many of my moral constraints after entering that world.

The participant expressed her desire to destroy things in the virtual space because she felt that she had entered a virtual world where her behaviours would not impact on the real world. According to Julian Dibbell’s (1994) canonical study, *A Rape in Cyberspace*, even behaviour like rape in virtual worlds may not be subjected to the rules or laws of the real world. Norms and mores are different in virtual worlds. Virtual worlds also have their own rules. The two kinds of virtual worlds referred to in Dibbell’s study are structured differently, one is based on presence in VR achieved by isolating viewers out of the real world while the other is a multi-user chat kingdom (MUCK) based on text communication. Both create new rules in their magic circles. At the same time, however, viewers also use the norms and mores of the real world to judge affordance in the virtual world. Participant 1-3 considered her destructive behaviour as a loss of morals. As mentioned in Dibbell’s *A Rape in Cyberspace*, a rape was also judged by some users as misbehaviour or a criminal act, even though it happened in the virtual world. However, culture is a complex collective, which includes art, religion, customs, etc. Sometimes, in order to enhance the affordance of playfulness in VEs, the ‘magic circle’

may contradict the norms and mores of a specific culture, especially in relation to religious mores. The focus group data from Case Study 2 supports this argument.

As mentioned in section 5.1, Case Study 2 is a VH project allowing users to see a digital restoration of the deteriorated murals and the ruined Buddhist statues in Cave No. 61 at the Mogao Caves. The city of Dunhuang is the heart of Buddhist cultural heritage in China. The Mogao Caves at Dunhuang are representative of Buddhist culture and art, and they are also a sacred place for Chinese Buddhism, which has religious meaning, cultural value, and artistic mystique. Between the 4th and 14th centuries, the Mogao Caves, located on the Silk Road, were a Buddhist centre connecting South and East Asia. Based on the surviving art at Dunhuang, those who came to Mogao to visit, reside, or govern the region actively supported the local worship of Buddhism in different ways (Reed, 2016). Cave No. 61 was a hall cave sponsored by the military governor of the Gui-yi-jun regime, Cao Yunzhong, and his wife as their family temple in the 10th century (Digital Dunhuang, n.d.). The VR in Case Study 2 is aimed at bringing the cultural value of Dunhuang to viewers, but it also triggered the participants' sense of being in a game:

It was more like gameplay at that moment. It felt like the god perspective, as you put it. It was more exciting and may satisfy some people's preferences.

(Participant 2-6)

Even though I felt a little bit scared the first and second time when I tried to move, this created a sense of excitement, and then I deliberately flew up to the ceiling. (Participant 2-2)

Although its simulation was quite realistic, the feeling I had was just that I was using a technology, or I was playing a game. (Participant 2-3)

The affordance in VE, such as zooming into the details of murals and flying up to the ceiling, is not easily accomplished at the real-world Mogao Caves site. Inside the physical structure, it is difficult for participants to have a close-up view of the caisson ceiling or the murals in higher locations because of height restrictions (Han et al., 2019). Although these are difficulties in the real world, they can be easily overcome by participants in the VE.

At the same time, however, the aspect of playfulness caused some participants' to feel discontented since this is contrary to the norms and mores of the Buddhism culture:

Standing [in front of the Buddha statue] physically and looking up, you may feel how insignificant you are. However, you would not have such a feeling in VE. The virtual experience may desecrate the divine, in my view, as there were so many Buddhas displayed, and I was able to touch them and see them from different angles. I just felt it was not right. (Participant 2-5)

Buddhist culture is rather special as it requires a sacred space. If you make it entertaining and make it fun, it is actually a bit disrespectful. (Participant 2-8)

At the real-world site of Mogao Caves, viewers maintain a certain physical distance from the Buddhist statues and murals and this is coupled with the dim lighting in the space to engender the way viewers feel about the divine in Buddhism. In the VH, the immersive environments create the participants' sense of being in the hall cave at Mogao. The sense of presence in the VH accorded with the participants' respect towards the religious culture. However, the game-like features of the VR experience, such as allowing users to get close to or even touch the artefacts, decreased the overall cultural experience for some viewers.

The participants had various motivations for using VR, such as learning new knowledge or satisfying their curiosity. For instance:

I may not need to visit Dunhuang myself in future. If I can see everything so clearly [in VR], why spend several hours travelling? Actually, I am not as religious or curious as you are. I think this VR is fine as I can see all the must-sees. (Participant 2-4)

This participant thought it was not necessary to view the real-world cultural heritage site after the virtual experience of Case Study 2 because, unlike other participants, she was only motivated to acquire visual knowledge, instead of learning about the religious aspect. Even though, as Stephen B. Gilbert (2016), a researcher on HCI, notes, different VE users have different intentions or motivations, many of them may bring cultural and religious expectations to the VH. Playfulness can arguably reinforce the sense of presence in VH in relation to the viewers' sensation, but in terms of cultural presence, playfulness sometimes dissolves viewers' perception of the reverence for the cultural significance (X. Zhao, 2021). Moreover, as I have discussed in section 5.2.1, Case Study 2 aims to generate a sense of presence by using realism. However, playfulness in VH or DIA should be used for fostering awareness of and respect towards a familiar or unfamiliar cultural context rather than making it feel like a game for viewers.

5.4 Questioning the authenticity of art in VR

This section questions the authenticity of DIA from the audience perspective. Authenticity is not the same as realism which makes viewers feel a sense of reality through mirroring or simulation. Authenticity refers to the particular attribute of an original artefact; in the museum, experts in such matters test whether objects of art are what they appear to be or claim to be (Trilling, 2009). Authenticity in artworks has a particular value which cannot be produced by mechanical reproduction since the original artwork has a certain value called the 'aura'. The aura is an effect of an artwork being uniquely present in time and space (Benjamin, 2008). From this definition, the aura of art has two attributes: firstly, it only exists in its original form and cannot be transferred to the reproductions/copies; secondly, the 'aura' is impacted by where and when the work is presented.

Authenticity can be dissolved by commercialisation and digital simulation. It is historically contradicted by commercialisation. Since modernisation, commoditisation is said to destroy the authenticity of local cultural products, creating a surrogate or covert 'staged authenticity' (MacCannell, 1973). Staged authenticity refers to the fake or artificial authenticity in reproductions of the original artefact, such as imitations and counterfeits. Hence, museums and art institutions become, to some extent, guarantors of the authenticity of the artefact; as the philosopher Hilde Hein (2006, p. xix) has discussed, their 'anonymous and indirect validation enhances the aura of specific and fallible authorship'. However, as I have discussed in Chapter 4, DIA is displayed in a hybrid circumstance where the art space/museum is integrated with retail, commodity, and immersive spectacle, so the functions of DIA have been regulated by commercialisation. Hence, I question how this integrated circumstance influences viewers' perception of the value of DIA. Moreover, the authenticity of art is lost in digital copies. In the digital age, digital arts are copied rather than reproduced since the original digital arts is a data file that is in an invisible place and stored on a computer, and then visualised as the image we see (Groys, 2008). In other words, the original artefact is firstly digitalised, then curated and exhibited, and finally received by viewers. Groys argues that curators/creators can potentially create new value through visualisation. Cultural presence is a form of new artistic value (as I have discussed in Chapter 2) by creating a cultural context for its viewers through digital immersive technology. Therefore,

the second aim of this section is to compare how viewers interpret this (new) value of DIA and the value of original artefacts.

5.4.1 The contradiction between authenticity and commercial circumstance

According to my analysis of the focus group data, the convergence of exhibition and commercial environments is a factor that influences viewers' perceptions of the artistic and cultural value of DIA. As I have discussed in Chapter 4, the collaboration of commercial and cultural spheres has resulted in exhibitions of DIA in commercial spaces. Some of the exhibitions for DIA are not in conventional art spaces but rather in sites that are commingled with a commercial sensibility. For instance, Case Study 1 was also exhibited in K11 art space in Hong Kong. Commercialisation reduces the artistic and cultural experience of DIA. This was reported by some of the participants:

I feel that putting immersive art exhibitions in shopping malls is contradictory. Why did I go to see art exhibitions in museums and art galleries before this? Because they have a regimented effect on us. They're more real and more ritualistic. They have been gradually created in various ways so you could feel that sense of sanctity. But walking around in a shopping mall brings in a more playful mentality. (Participant 1-1)

I feel more ritual in the museum. But in a shopping mall environment, I have a more playful mental status. (Participant 1-6)

Our understanding of authentic art is still [tied to] the kind of traditional art, [in the form of] sculpture and painting. (Participant 1-6)

The viewing context of DIA is an important reason why these viewers do not recognise the authenticity of this exhibition. Case Study 1 creates a virtual space in VR HMD for its users, which is isolated from the outside environment (Figure 4-3). Even though the artwork is isolated in an art centre, the viewers are still aware of the surrounding commercial context of the shopping centre. Appreciating art via a VR headset within a retail environment is a very different experience for people who are used to appreciating art in museums and galleries. Traditional art forms such as sculpture and painting are often exhibited in the 'white cube',

which refers to a certain gallery aesthetic characterised by its square or oblong shape, white walls, and a light source, usually from the ceiling (TATE, n.d.).

Some participants' perceptions of art are still fixed on traditional (non-technologically mediated) forms of art such as painting and sculpture, so they need arbiters to refine and exhibit the cultural and artistic value of digital art. As I have discussed in Chapter 4, curators in art institutions play this role. The digitalisation of invisible data has eliminated the authenticity of digital art because of the reproducible nature of digital technology; however, curation allows the copy of digital art to be exhibited with the 'aura' of artistic value – for instance, by adding immersive performance to advance cultural experience (see Chapter 4), whereby curators can make choices and modify the performed images in a substantial way (Groys, 2008). At the same time, however, these curators also have to 'negotiate' with entrepreneurs despite their differing aims for distributing DIA, as discussed in Chapter 4.

From the perspective of cultural consumption, the presence of commerce in an art museum has changed viewers' art appreciation from a form of admiration (i.e., a more ritualistic way) to a sense of entertainment and playfulness. This interpretation is corroborated in the focus group discussion of Case Study 1:

By putting this kind of art exhibition in the mall, it becomes less artistic but more commercial. (Participant 1-6)

Some people may specifically want to go to the art exhibition and stop by the mall to shop. Some people may just come to the mall to shop, and then be attracted by the art exhibition. When we were playing inside [the art centre], I found that this art exhibition attracted these consumers, especially children. A kid pulled his mother's hand to see what the people were doing. It's what draws the shoppers to the mall, and draws those like us who come to see the exhibition to come and spend money in the mall. (Participant 1-7)

And we found it very irritating that if you buy a cup of bubble tea in the shopping mall, you can get two free tickets (arousing laughter among some other participants). (Participant 1-5)

That's a business model. Don't laugh at them. It's for promotion. You can't laugh at them. (Participant 1-9)

In the commercial viewing circumstance, DIA is used as a gimmick to attract more audiences. As participant 1-7 said and as Figure 5-3 shows, the art exhibition itself became a part of the business model in K11 to attract the people. Playfulness became the best way to attract visitors. As I have discussed in section 5.3, playfulness is a significant factor in the reception of DIA because of viewers' preconception about VR and games. Once the artistic or cultural value is absent in the digital art, immersive experience does not create the sense of experiencing cultures; instead, it becomes a game-like experience or entertainment while shopping. The value of DIA becomes playfulness that inspires people's desire to play, rather than what Benjamin (2008) calls the 'aura' of the art.



Figure 5-3. Photo of a participant and a passer-by attracted by the show window of the art exhibition.

Commercialisation also encourages a new way of art reception, which makes DIA entertainment. As the participant 3-3 from Case Study 3 said,

Many art museums are now devoted to the field of immersive art. But I think many of them don't pay much attention to the humanistic core of the exhibition; they turn the immersive exhibition into a studio, just a place to take pictures. Young people like to *daka* [打卡, lit. trans. 'check in']. As I said, this form is more entertainment than culture. This is why these exhibitions have been criticised. Some people say that these exhibitions are just reproductions, or that

they only use a form of light and shadow to represent the originals. In many cases, the artistic value of the original work is not felt.

As discussed in the previous chapter, *daka* is an internet buzzword in China that connotes going to a popular place or owning something special and usually showing this off to others by posting photographs or videos on social media. As I have discussed, curators and entrepreneurs have accepted *daka* as a way of appreciating DIA among younger audiences since *daka* is able to help attract more audiences and make more commercial profits. However, from the perspective of audiences, *daka* is regarded as entertainment rather than as a culture or art-related behaviour. Some audiences expect to be immersed in the cultural environment of DIA, which contributes to comprehending, experiencing, and admiring the value of art, but sometimes the arts are too commercialised and become a form of mass entertainment.

5.4.2 The disparity between viewers' perception of the original and virtual artefacts

In this section, I use Case Study 2 and Case Study 3, which represented high profile artefacts of Chinese culture, to investigate the disparity between viewers' perceptions of the original and virtual artefact. According to my analysis of the focus group discussions, the question of authenticity makes viewers value VR works less than the original artefacts. If the VR work cannot provide the cultural experience they expect, viewers doubt whether DIA actually delivers better experiences about Chinese culture than the original, non-virtual artefact, especially when the authenticity of the original artefact is irreplaceable to these viewers.

There are examples from the focus group discussion that demonstrate the significance of authenticity in relation to China's cultural artefacts. As one of the participants from Case Study 3 said, viewing the original artefact is better than encountering it in immersive art exhibitions since the artefacts in museums keep their authenticity:

If it is to communicate Chinese culture, I might prefer traditional methods like art galleries and museums to this new form of immersive exhibitions. When I travel to any city, I always go to its museums and art galleries because this is the fastest and most direct way to understand the history and culture of that place. I look out

for porcelain [artefacts] in the museum because it has a long history, but they will inevitably be damaged. Sometimes I will see obvious traces of restoration, not the original glaze of the original ceramics. I can clearly see that this piece has been filled up, or that this piece is part of the original. The museum restoration informs us about the porcelain as it was originally discovered: Which piece was kept? Which piece was defective? The museum can present us with the most essential and primitive culture. When I look at the original work, I can see the variation in the brush strokes, understand the creative ideas, and even the traces of the modifications above, but I can't see these in the light show. (Participant 3-3)

The role of museums is to preserve the authenticity of the artefacts through collection and protection. To some extent, the conventional art space guarantees the authenticity and the aura of the artifact. For example, an expert who works in the museum may easily tell if the work is fake, so authenticity vanishes for him/her, but if no one advises viewers, they may consider the work to be authentic. According to participant 3-3, the 'defective' parts of the artefact kept by the museum have significant value for her to interpret the related cultural background. The anthropologist of tourism Erik Cohen (1988) argues that new cultural developments may also acquire the 'patina' of authenticity over time – a process designated as 'emergent authenticity'. The literal meaning of 'patina' is the shallow layer of deposit on a surface. But in the context of aesthetic experience, the patina of authenticity refers to how viewers can feel not only the perceived historical or heritage value, but also the particular aesthetic of the fantasy of precipitation over time.

Cultural presence, as the new aesthetic value of DIA, has the capacity to generate cultural experience as if from the real artefact. However, as I have discussed in Chapter 4, curators and entrepreneurs of the DIA have reasons, such as the reputation and commercial profits, to use cultural elements which are familiar to the audiences to create cultural proximity.

Cultural proximity contributes to cultural presence since presence can be generated from a cultural context familiar to the audience; however, cultural proximity is not the same as cultural presence. In order to generate cultural presence for viewers, curators and creators need to understand the significance of the original artefact and exhibit its value ('aura') through digital technology. However, according to the focus group discussion, the loss of authenticity from the original artefacts causes the cultural experience in the VR works to be not as rich as the on-site experience. As a result, a disparity between the cultural experience

of the VR work and the cultural presence expected by viewers is created. This is reflected in what some of the focus group participants in Case Study 2 said:

How do some replicas of artefacts evoke a cultural experience? They are not okay to me anyway. They don't make me empathise. I think the real cave just has a distinctive smell and it has a distinctive sound. It also transmits a special message to me. (Participant 2-9)

We can experience the sacredness of Buddhism in the real cave. The majesty of Buddhism is still stronger in the real site [than in *Shenyou Dunhuang*]. (Participant 2-8)

The reverence of being there and the sense of admiration are completely gone [in the VH]. It is definitely different from what I experienced on site. (Participant 2-6)

I personally think it would be better if it is positioned as a game. If it's just spreading a kind of culture, it's almost meaningless. Moreover, the sense of admiration and respect for being present is completely gone, which is really different from the experience of being on the spot. (Participant 2-6)

According to the participants' feedback, they do not have the same sense of presence of actually being in the Mogao Caves due to the lack of authenticity in the VR work. Special features, such as the smell, sound, and other intangible information about the actual Mogao Caves, are lost in the VR. Authenticity has its cult value (Benjamin, 2008), normally in relation to religious artefacts, which generates viewers' feeling of distance and admiration. The admiration and distance from the cult value of the original site are not afforded in the VH piece. Moreover, as participant 3-3 alluded to, the narrative of the content needs to be different in terms of how cultural presence is constructed and how audiences are invited to engage. If the contents of Case Study 2 were not about Chinese Buddhist culture, it could have been represented as a game and this would have encouraged a different level of engagement and even expectation from the viewers. In other words, the 'disparity' in the authenticity of the subject is also generated from how of the cultural content is represented.

There is a paradox of authenticity for virtual artefact: even though people already know their experience is unreal before immersing themselves in the VE, they still bring their expectation

of authenticity to the VE (X. Zhao, 2021). Researchers on consumer experience Ann H. Hansen and Lena Mossberg (2013) argue that end users prefer to look for reliable and unique cultural elements from the immersive experience rather than investigate whether the culture is fabricated. In some situations, their argument is true since recognising the unique cultural elements relies on a user's familiarity with the culture. However, when the cultural elements contain special values such as the 'aura', religious value, or heritage value, some viewers also project their preconceptions (i.e., understanding, admiration, and respect for the original artefact) on to the virtual piece. Even though VR gives viewers a novel experience by eliminating the distance with artworks, the generating of cultural presence needs distance. Art, aura, authenticity, and religious value create distance. Distance allows viewers to be in their 'right minds' and 'read' a representation of art. Hence, if a viewer is considered as a critical reader (as in the participants mentioned in this section), rather than a sensation-seeking 'player' of DIA, whether they recognise the culture is fabricated or authentic is not reasonably insignificant.

5.4.3 Reasons for the original artefacts mattering to Chinese audiences

In this section, I investigate why audiences within China, the viewers belonging to the cultural context displayed/represented in the VR work, are concerned about the authenticity of the original artefacts. According to the focus group discussion, the viewers have high expectations of these immersive art exhibitions that represent traditional Chinese artefacts. There are two reasons for this. First, due to the objective reasons (i.e., long distance and limited accessibility), it is difficult for people to see or appreciate the original works. Second, the Chinese arts in question, such as Chinese cultural heritage, traditional paintings, and Zhuangzi's philosophical thoughts, which are represented in the virtual works, have a high reputation in China in terms of aesthetic value as well as cultural or national identity. The two reasons will be discussed in detail in this section.

Some of the original artefacts are difficult for viewers to access in the real world. Mogao Cave No. 61, the original site for Case Study 2, is isolated in the western part of China, and for heritage protection reasons, it is seldom opened to visitors. *A Thousand Miles of Rivers and Mountains* and *The Scroll Painting of Blossom*, which are both represented in Case Study 3, are stored at the museum, and opportunities for viewing them are limited. The difficult

accessibility increases the viewers' enthusiasm and admiration for the original artefact. This is demonstrated in some of the participants' responses:

I went to see the authentic exhibition of *Along the River During the Qingming Festival* (清明上河图) at the Palace Museum. Visitors had come from all over the country. We waited in a really long queue to view this exhibition. For the exhibition about Dong Qichang at the Shanghai Museum some time ago, many people also travelled from far away to see it. I feel that although this digital immersion exhibition has Chinese culture in it, it is unlikely that I would travel across cities to see this exhibition. (Participant 3-5)

As she [participant 3-5] said just now, that kind of authentic exhibition is very popular. When I was an undergraduate, I viewed a few masterpieces at the Jiangsu Provincial Art Museum. The waiting line, at that time, already reached to the road outside. So, I think the influence of the original works would still be greater than that of the digital immersion exhibition because this kind of thing can be seen by everyone, but the original works are really hard to come by. (Participant 3-3)

These authentic works have very high value for Chinese audiences in terms of their significant status in Chinese culture. As previously mentioned, *Along the River During the Qingming Festival*, painted by the Song Dynasty painter Zhang Zeduan, captures the daily life of people and the landscape of the capital, Bianjing (present-day Kaifeng), during the Northern Song period. It is the most renowned Chinese painting and has been called 'China's Mona Lisa' (Bradsher, 2007). Dong Qichang was a Chinese painter, scholar, calligrapher, and art theorist of the later period of the Ming Dynasty. In 2018, Shanghai Museum curated *The Ferryman of Painting World: Dong Qichang's Painting and Calligraphy Art Exhibition*, which featured 154 of Dong's work borrowed from 15 institutional collections, including Shanghai Museum, the Palace Museum in Beijing, and the Metropolitan Museum of Art in New York.

In the focus group discussion, participants from both case studies (2 and 3) believe that it is the cultural value which attracts them. The original artefacts empower the value of DIA rather than vice versa.

In fact, this exhibition uses the proposition of Chinese elements to create content. The content of this exhibition is about the elements of Chinese culture. I don't know what kind of culture the immersive technology has in itself; I think immersive technology is just a means to put traditional culture in a way that is more accessible to young people nowadays, but the real cultural core of this exhibition is still in Chinese traditional culture. Following this logic, instead of using *Picture of The Ode of the River Goddess*, they can curate another immersive exhibition using another painting like *清明上河图 (Along the River During the Qingming Festival)* as the topic of the exhibition next time. I think they just use Chinese culture as a topic. (Participant 3-4)

During my summer vacation last year, I went to see Picasso's immersive exhibition in Beijing. Before I went there, I heard that it was an exhibition with great public reviews. I went to see it with great expectations, but in the end, I felt disappointed. Because maybe it's still more form than content because many people actually go to these kinds of exhibitions to see Picasso or Van Gogh, but the best way to get closer to the artist is to see the authentic works. (Participant 3-2)

Additional examples from Case Study 2 show that some viewers think the value of original artefacts of Chinese culture is greater than VR works:

I think Dunhuang is a place that everyone wants to visit. If there was nothing about Dunhuang in the VR project, I would not experience the VR. Because these [VR works] are related to famous cultural intellectual properties like the Forbidden City or Dunhuang, I want to experience them. (Participant 2-1)

VR or digital technology can transform a very obscure or religious subject in a more accessible way and bring it into people's everyday lives. Additionally, I very much agree that culture is more important than this kind of technology because this project is about Dunhuang, which everyone is interested in viewing. (Participant 2-5)

The participants have favoured these cultural elements from their own cultural backgrounds. The scholar on media studies Joseph Straubhaar (2014) believes that viewers tend to prefer media products from their own culture; this is called cultural proximity. Cultural proximity

can be seen as the cultural capital shared by audiences in the same region (Straubhaar, 2014). Language is a significant element of cultural proximity; cultural proximity is also composed of other cultural aspects like ethnic types, religion, and values (Straubhaar, 2003).

Appreciating or viewing cultural artefacts is a type of cultural capital that Chinese audiences should have, so these viewers would have the passion to gain knowledge or understand more about Chinese culture. They consider DIA may be a good way for viewing and understanding the culture. However, as participant 3-2 has said, ‘the best way to get closer to the artist is to see the authentic works’.

When the cultural elements stay with strongly preconceived ideas, such as religion, cultural identity, or even national identity, in the viewers’ minds, the value of DIA works is generated more from the cultural side (the original cultural value of the artefact) rather than what technology provides (the immersive experience). National identity means that people within the nation believe in the cohesive power of national culture (Fukuyama, 2018). Cultural heritage, traditional artefacts, and ancient philosophical thoughts (i.e., Confucianism) are a significant part of Chinese national culture that fosters China’s national identity. These are iconic elements that structure the imaginary of Chinese culture for the people in China. Just ‘as the shared way of life unites the members of a community at the cultural level, the shared mode of conducting its collective affairs unites them at the political level’ (Parekh, 1995, p. 259). As I have discussed in Chapter 1, China’s government has used digital technology to rejuvenate its cultural power on a national scale. Such a strategy is not only a form of soft power to demonstrate China’s capability to the world but also a way to unite the Chinese citizens as a cohesive power within a polity. Although the dominant cultural grouping in China is Han Chinese, Chinese culture is not just a single ethnic composition. The Chinese government and many scholars (Dong et al., 2003; Keane et al. 2020; Wood, 2020) consider China as a civilisation, indicating something essential and permanent, enriched by multiple cultural groups. For instance, the aforementioned Dunhuang, a multi-ethnic city in western China, served as an important hub for economic and cultural changes along the ancient Silk Road. This is the historical background for the iconic Mogao Caves at Dunhuang. As indicated in the audience responses in Case Study 2, Dunhuang continues to be considered as an important symbol of Chinese culture. The Chinese government is currently launching policies and slogans to encourage its people to produce and consume cultural products in relation to China’s 5,000-year civilisation in a digital way. In Chinese audiences’ minds, these traditional cultural icons have arguably been a significant part of Chinese culture.

However, according to the analysis of the viewers' reactions, there is also some uncertainty amongst domestic Chinese audiences about whether these advanced digital technologies (VR/AR) are actually delivering better cultural experiences than non-virtual ones. In summary, there are three reasons supporting this argument. Firstly, in the audiences' minds, the non-virtual pieces (the original artifacts) have authentic value. Second, some V/AR experiences are not as good as the audiences expected. Third, some implications caused by digitalisation, such as realism representation, commercialisation and game-like experience, may eliminate audiences' reception of cultural value.

5.5 Conclusion

This chapter has examined the factors that impact on the generation of cultural presence in DIA, including 'illusion' and 'playfulness'; and towards the end, I use the concept of 'authenticity', referring to viewers' existing expectations, to explore how cultural presence influences the viewer's perception. Cultural presence is an illusion which is formed from the 'reception contract between' DIA and viewers. Cultural presence can be generated in a realist or fantastical way. Viewers use imagination (which is related to emotionality) and understanding (which is related to rationality) to have the illusion of being in a cultural framework in a specific time (be it in the past or future). Moreover, playfulness also plays a role in cultural presence. VR can enhance the viewers' feeling of being in a game-like experience. In the art reception of DIA, viewers are active players. Game design theory and elements are applied in some DIA projects, so it is to be expected that the viewers feel like they are playing a game. The technological features of VR trigger viewers' imagination that they are playing a game, despite the works not being designed as games. Such playfulness sometimes contradicts some value of the cultural context. The 'not-serious' feature of play in VE may work against the norms and mores of a specific culture in the real world, especially when it relates to religious or ethnic culture. For instance, some participants considered Case Study 2, *Shenyou Dunhuang* (2018), as blasphemy against the original artefacts that have significant cultural and religious values. In addition, the exhibition venue is another factor that influences the sense of cultural presence. For instance, the retail sector wants to use the newness of VR and art to change customers' perception of conventional shopping malls, so some DIA works are being exhibited there. However, viewers also consider that the art and

cultural value is dissolved by the commercial circumstance of retail. DIA becomes considered as a type of game or entertainment that is encountered while shopping. Viewers have yet to completely accept DIA as a form of art.

The cultural presence of DIA is not only about eliminating the sense of distance between art and viewers, but also the viewers' use of their right minds to read the works. The cultural values of art, aura, authenticity and religion create distance in order to be read. In the previous chapter, I considered how curators aim to help audiences understand Chinese culture and convey art value through the cultural products, but in this chapter, I extend the analysis to consider how cultural understanding also depends on viewers' cultural capital and their preconceived ideas. Some viewers project their identity, admiration, and respect from their existing notions when viewing the artefacts in VR and critiquing the cultural experience.

It is nonetheless acknowledged that the findings of this chapter have some limitations. The chapter is based on three case studies in China and limited focus groups rather than broader research with more types of groups and cultural products. In order to explore how digital technology is playing a role in China's rejuvenation (culturally and reputationally), this project examines how audiences, both in China and globally, are responding to 'Digital China'. Hence, more case studies and broader audience studies in relation to international cultural displays, performances, and exhibitions will be included and considered in the next chapter. Finally, this chapter only focuses on the Chinese viewers who are already familiar with or belong to the same cultural context in the VEs, and examines the sense of cultural presence and the viewers' cultural imaginary in domestic China. However, DIA also plays a significant role in displaying Chinese culture on the global stage. It is therefore also worth studying DIA as an instrument for influencing international audiences' perception of China, as I will discuss in the following chapter.

CHAPTER 6

Digital Immersive Art and the Problem of China's Soft Power

This chapter examines DIA with reference to high profile international case studies that foster China's cultural presence on a global stage, and analyses the creators' views and audiences' reactions outside the People's Republic of China (PRC). In the previous chapters, I have argued that 'Digital China' is a context initiated by China's central government, implemented by cultural institutions and corporations, and engaged with by audiences not only within but also outside China. China wants to present 'Digital China' as a new image and proffer it through international mass events. International mass events, such as the Olympic Games and other major festival events, provide an excellent platform for cultivating presence in the international community, among both domestic and foreign audiences, since these events offer opportunities to present locally produced cultural discourse and generate soft power (Schneider, 2019). Florian Schneider (2019) believes that such networked events, defined as mass events endorsed by the state and associated with cultural events such as opening and closing ceremonies, frequently serve as attempts to generate soft power. Soft power is a term coined by the US political scientist Joseph Nye (1990). In public diplomacy, 'the term usually describes a government's ability to influence foreign public opinion in its favour and to generate goodwill among the citizens of other countries for its foreign policy' (Schneider, 2019, p. 205). In contrast to hard power, which includes military power, economic power, and technological power, soft power is related to ideology, politics, and culture.

Today, more scholars believe that 'global China' is rejuvenating itself, changing the old stereotype of being a copycat nation, and becoming an emergent digital power (Flew, 2016; Keane & Chen, 2017; Leong, 2018). In his summary report to the nation's Seventeenth National Congress on 15th October 2007, Hu Jintao, the previous Chairman of the PRC, provided an important message about China's lost creative spirit and introduced the role of digital technology in creating new cultural self-confidence for China (Xinhua, 2012). Changes were soon apparent. China Central Television (CCTV), a Chinese central government-owned television channel, previously used to regale the labour of factory workers; now, the stories on screen are about robots, drones, and machine learning. The

integration of digital technology and art brings new opportunities for updating China's image. Applying digital technology to highlight China's culture in international mass events is not new. At the 2008 Beijing Olympic Games Opening Ceremony (which I introduced in Chapter 1), the renowned Chinese film director, Zhang Yimou, utilised advanced digital technology to highlight China's 5,000-year-old culture; a similar digital showcase was also used at the Shanghai World Expo in 2010. The international news at the time reported a sudden rise in China's soft power; for instance, ARD (2008, as cited in Schneider, 2019, p. 110), Germany's main state TV channel, was surprised that the 2008 Beijing Olympics opening ceremony had not been 'a propaganda show'. Today, China's artists use digital technology to present China's digital power to global audiences.

In this chapter, two case studies of China 'digital soft power' are investigated. Case Study 4, *Beijing 8-Minute Show* (2018), is a performance with multimedia work at the closing ceremony of the Pyeongchang Winter Olympic Games. The showcase was hailed by China's leadership as a great success, an example of China's emerging technological development showcasing Chinese enterprises. Case Study 5, *Blueprints* (2020), is Cao Fei's multimedia installation exhibition in the UK. This case study provides a more critical perspective on the impact of digital technology in contemporary society. The artist and her works are influencing China's cultural presence while drawing attention to China's rise as a global digital power. When considering these two case studies, I specifically examine the views of the creators, intermediators, and 'third-order' audience in relation to China's DIA in the global context. The intermediators, called 'second-order' audiences by Schneider (2019), include media workers and critics who filter, rework, and relay the event on the ground, create the mass media products, and provide semiotic signposts for the understanding of the event (Rauer, 2006). The 'third-order' audience consists of viewers and readers who experience the event through media, especially through digital relay technologies associated with the internet; they are not passive audiences since they experience the mediated events and interact with others on the internet (Schneider, 2019). Drawing on publicly available interviews, media reports, online comments, and close reading of the art content in the case studies, I argue that digital technology in DIA provides an opportunity to structure 'Digital China' as China's cultural presence in the world. At the same time, 'Digital China' is generating critical stories about China, which contradict the message the Chinese government is trying to cultivate with its public diplomacy and propaganda campaigns. I will discuss some of these consequences in the final section.

6.1 Tell China's stories 'well' in an immersive way

In Chapter 2, I mentioned Xi Jinping's advocacy to Chinese artists, writers and journalists to 'tell China's stories well' ('讲好中国故事') as an example of how politics regulate the institutionalisation of cultural meanings in China. In the international context, this strategy is also a means to promote China's soft power to the world. In the 30th collective study of the Political Bureau of the Communist Party of China (CPC) Central Committee, Xi Jinping (2021, as cited in Xinhua, 2021b) introduced 'tell China's stories well' as a strategic mission to improve China's international communication capacity and spread Chinese culture globally. The narrative endorsed by the state is intended to rejuvenate Chinese culture, a great civilisation, now a digital superpower or even something akin to a digital civilisation (Keane et al., 2020). The convergence of digital technology and cultural products enhances audiences' confidence in Chinese culture at home and China's soft power abroad (F. Li & Zhao, 2017).

What the pronouncement to 'tell China's stories well' actually entails is open to interpretation, but for some Chinese artists, there is evidently a link to digital technology. For example, the original VR animation *Shennong: Taste of Illusion* (2018), presented by a Chinese VR team, Pinta Studio, tells an adventure story about a hero from ancient China. The VR animation has been nominated in many global film festivals, including the 75th Venice Film Festival – Venice VR in 2018 and Raindance Film Festival 2018 VR Competition – Best VR Experience (Pinta Studios, 2018). Furthermore, Chinese giant technological companies, such as Tencent, are using digital technology at mass events to tell stories about Chinese culture. In 2017, Tencent cooperated with the Palace Museum in Beijing, the Great Wall, and the Dunhuang Mogao Caves, which are renowned Chinese cultural heritage, to assert the feasibility of using digital technology to narrate Chinese cultural stories (Y. Zhao, 2018). The content of these stories emphasises China's traditional culture. As I have discussed in Chapter 5, Chinese audiences consider iconic traditional culture as part of their cultural identity and even national identity. However, Chinese artists are facing questions of what stories about China's contemporary culture can be told and how to tell these stories *well* to global audiences. The director Zhang Yimou tried to use the immersive performance *Beijing 8-Minute Show* (2018) at the closing ceremony of the Pyeongchang Winter Olympic Games to tell global audiences the answer.

6.1.1 Re-presenting China's emerging technological development and enterprises

The Chinese government is carefully shaping China's new global presence. China was lacking in technological status until very recently, so it is joining the presence of culture and technology together (Keane et al., 2020). China's cultural presence used to be focused on the past (i.e., traditional culture, heritage, moral values), such as the emphasis on China's 5,000-year traditional culture at the opening ceremony of the Beijing 2008 Olympics (as outlined in Chapter 1), but now it has shifted to incorporate the technological presence. The 2022 Beijing Winter Olympic Games provided an opportunity to advocate China's new reputation on the global stage. The international mass event is an excellent forum to advocate for recognition as a global institution among foreign and domestic audiences, since it provides an opportunity to present locally produced culture and political discourse using internationally accepted grammar and iconography (Schneider, 2019).

The aim of Chinese governmental departments at the 2022 Beijing Winter Olympics was to highlight the development of China's technological achievement. 'The Science and Technology Winter Olympics' (科技冬奥) was the theme of the Beijing Winter Olympic Games put forward by the Beijing Winter Olympics Organizing Committee. Correspondingly, the committee from the Ministry of Science and Technology (MoST) of the PRC founded the leading group for the Science and Technology Winter Olympics (STWO); and the first meeting of the leading group was held in July 2020 (Liu, 2020). The purpose of the meeting was to implement the spirit of Xi Jinping's important instructions on the preparations for the Beijing Winter Olympics and Paralympics, namely, to have a deep understanding of the significance of scientific and technological innovation in supporting these preparations (Liu, 2020). Some advanced technologies were used in the preparations for the Beijing Winter Olympic Games. For instance, in order to give audiences a better viewing experience, the leading group commissioned high-resolution VR displays and other digital equipment (Z. Wang, 2021). In addition, an AI system was developed to provide technical support for Chinese athletes preparing for the Beijing Winter Olympic Games (He & Fu, 2021).

As the first city that will host both the Summer and the Winter Olympics, Beijing encouraged people to think about the different images that China wants to present to the world. In an

interview from Xinhua News Agency, CHANG Yu, who works for STWO leading group, said:

2008 Beijing Olympics paid more attention to showing our technological innovation and achievements to the world. China hoped to receive recognition and praise from the world. After development in recent years, the biggest difference [from the Beijing Olympics] of the Technology Winter Olympics 2022 is that we no longer just want to show a certain new technology to the world though ... we want to present what people's lives will look like in the future and explore how the Olympic Games can benefit our people's lives, which is the aim for us to carry out the scientific and technological Winter Olympics work.

(Chang, 2021, as cited in Ji et al., 2021)

According to Chang, the Beijing Winter Olympics Organizing Committee aims to show how China's technological achievement has changed the world and how Chinese technology benefits people's lives. This aim was also demonstrated in the *Beijing 8-Minute Show* (2018) that was one of several international events foreshadowing the Beijing Winter Olympics. At Olympic Games closing ceremonies, it has become a convention for the next host nation to introduce itself with artistic displays (usually in the form of dance and performance) representative of the host city. This tradition began at the 1976 Summer Olympic Games (IOC, 2009).

Following the instructions of the Beijing Winter Olympics Organizing Committee, Zhang Yimou, the director of *Beijing 8-Minute Show* (2018), used digital technology to present China's new image. As he notes in a publicly available interview,

The Winter Olympics Organizing Committee also proposed that they hope *Beijing 8-Minute Show* (2018) can reflect China's capacity for technology. So, then we come up with robots. We still try to make every second perfect. This time there are not many performers... There will still be beautiful colours and unique Chinese culture that everyone hopes to see. But this time, there will be some new feelings, especially the performance that cooperates with artificial intelligence.

(Zhang, 2018)

Zhang Yimou was also the director of the 8-minute handover show for the 2004 Athens Olympics as well as the opening and closing ceremonies in Beijing in 2008 that used many actors to display Chinese culture. In the *Beijing 8-Minute Show* (2004) in Athens, about 150

people participated in the performance (Xinhua, 2004). However, in the *Beijing 8-Minute Show* (2018), Zhang did not use a mass group of human actors. Instead, the show applied immersive technology performed by 24 roller-skating actors along with 24 AI robots (Beijing Winter Olympic Committee, 2018).

According to an official explanation, the significance of *Beijing 8-Minute Show* (2018) is to tell the world the story of China in a new era. As the CCTV commentators that provided the commentary for the live-streamed video of *Beijing 8-Minute Show* (2018) said,

How to tell the story of China to the world in a new era and tell the story of the new China is the core essence of this performance. The feathers of the phoenix were drawn on the scene and gradually changed...which represents the meaning of auspiciousness in Chinese culture...In the ice screen, China's large aeroplanes and high-level astronomical telescopes appear as celestial eyes that have just been presented. All these are China's new contributions to the world's technology...On the ice screen, there are the smiling faces of children from all over the world...[represented as] olive branches and plum blossoms. (CCTV, 2018)

As exemplified in CCTV's explanation, China's technological achievements in the present day have become the focus of the story, rather than only presenting conventional Chinese cultural motifs such as the panda and dragon. This show orchestrated the spectacular integration of cultural elements about winter sports, Olympics, Chinese culture, and digital technology. As illustrated in Figure 6-1, aeroplanes are displayed on the transparent screen, visual elements depicting the phoenix are projected on the stage, and ice-skaters wear flashing lights representing Winter Olympics. The correlation of the aeroplanes and the phoenix is a trope about the convergence of China's high-technology achievement in the 21st century and Chinese traditional culture, as both visual elements imply the extraordinary ability to fly.

Overseas delegations, performances, and festivals are the vehicle with a network for to foster a nation's cultural presence (Keane & Chen, 2017; Nye, 1990; Schneider, 2019). The immersive experience and technological parts of *Beijing 8-Minute Show* (2018) are highlighted by the intermediators from TV broadcasting, such as CCTV commentaries and China's state-owned international media. As China's state-owned global website *Xinhua News Agency* reported,

Beijing's eight-minute show at the closing ceremony of the 2018 PyeongChang Winter Olympics will convey warm greetings from the 2022 hosts to the world in a high-tech way. (Mengjie, 2018)

Moreover, China Global Television Network (CGTN, 2018) describes the 8 minutes as a 'handover show that incorporated many high-tech elements':

Images were projected to the icy floor while dancers skated across it, creating a sense of augmented reality (AR). Unlike the closing ceremony of the Athens Olympics, which focused on displaying Chinese history using traditional elements such as red lanterns and jasmine, Beijing 8 Minutes in the PyeongChang Winter Olympic Games emphasized advanced technology. (CGTN, 2018)

For the closing ceremony of the 2018 Pyeongchang Winter Olympics, China wanted to use DIA as a means to influence foreign public opinion in its favour and generate goodwill among the audiences of other countries for its new image as an emerging digital power.

Moreover, *Beijing 8-Minute Show* (2018) showcased Chinese technological enterprises. One of the digital technologies highlighted in the show was the use of AR to project immersive images on the stage. The above-mentioned immersive visual effects were provided by a technology company in Beijing, Blackbow, to present China's contemporary cultural spectacles. On its official website, Blackbow (2019) defines itself as dedicated to the cross-border of 'technology + art'. In the *Beijing 8-Minute Show* (2018), Blackbow put up an immersive stage where a giant projection screen displayed digital images.



Figure 6-1. The projected images of phoenix elements and aeroplanes displayed on the ice screens in *Beijing 8-Minute Show* (2018).

As illustrated in Figure 6-1, the 24 ‘ice screens’ (冰屏) also strengthen the immersive effect on stage. The ice screen is a transparent monitor. The research and development (R&D) and manufacturing of the ice screen were accomplished by YIPLD Co., Ltd, a private enterprise based in Shenzhen. According to its official website, the transparent LED display features advanced side-emitting technology and smart controls, creating a unique aesthetic and immersive experience at the live event and on the performance stage (YIPLD, n.d.). Huang Qingsheng (2018, as cited in Ji et al., 2018), the leader of the ice screen R&D team, notes, ‘our “ice screen” technology is at the world’s leading level. This time we made a three-meter-long screen without a beam in the middle. Arguably, we should be recognised as the first team to achieve this technology in the world’. In the show, the 24 ice screens were navigated by artificial intelligence (AI), allowing the screens to be assembled into different shapes and match the movements of the immersive images on the floor. These robotic systems were developed by Shenyang SIASUN Robot and Automation Company, a national leading robotics company in China (Xinhua, 2018). According to Zhang Lei (2018, as cited in Ji et al., 2018), head of the robotics research and development team, there were two significant technological breakthroughs: first, the robots’ navigation is more accurate; and second, compared to commonly used industrial robots, these AI robots are more flexible, allowing for rotation and swinging movements, and matching movements with the actors.

The digital technologies provided by the technological companies heighten the immersion of *Beijing 8-Minute Show* (2018). As an immersive art, the transparent display gives theatre art a strong illusion of a distant individual’s presence in the local environment (Fuchs et al., 2014). Such illusionary effect has been used in concert and performance stages by holographic projection, such as a hologram of Michael Jackson performing after his death at the 2014 Billboard Music Awards in Las Vegas mirroring his signature slick dance (Wete, 2014). *Beijing 8-Minute Show* (2018) accomplished the AR effect facilitated by the 24 transparent ice screens. With the help of a transparent screen, the displayed objects could be effectively integrated with that space and its occupants without giving away their own remote locations (Fuchs et al., 2014). Immersion is a mentally absorbing process of transformation from one state to another, which is characterized by a corresponding increase in emotional investment (Grau, 2003; Wolf, 2013). The project scientist on computer vision Todd Margolis (2014) believes that immersive experience is not just an overlay of virtual objects but stories that connect these objects to the people and places that give them meaning. As I have discussed in Chapter 2, internet platforms assist the audience in reaching a status of social immersion by

bringing people together through their common interests. The storytelling across different internet platforms creates social immersion by unfolding elements of a fictional story to create an interactive narrative over time and space (Margolis, 2014). Hence, thrilled by the spectacular of *Beijing 8-Minute Show* (2018), the on-site or online media viewers may let go of their spatial and temporal coordinates for a moment (see section 6.1.3).

The enterprises provided technical support to the Olympics, and in return, their presence at the Olympics gave these technological companies more business opportunities. *Beijing 8-Minute Show* (2018) has given Blackbow the opportunity to raise its reputation and visibility in terms of staging immersive effects. After the 2018 Winter Olympics, Blackbow collaborated with the Chinese government on many such large-scale events, such as the light and fireworks show at Shanghai Cooperation Organization (SCO) Summit and ‘Belt and Road’ International Cooperation Summit Forum (BRF). Moreover, as I have introduced in the previous chapters, Blackbow is a creative team for Case Study 3, *The Worlds of Splendors* (2019). More recently, the work has become a cultural IP commercialised in partnership with retail brands. As demonstrated on its official website, the ‘ice screen’ by YIPLD Co., Ltd, has been widely used for displaying cultural content in China’s retail shop windows, TV shows, and trade fairs after the Winter Olympics (YIPLD, n.d.). Hence, these companies not only devoted their technological achievement to help structure China’s new image outside the nation but also to stimulate China’s domestic cultural market.

6.1.2 China’s ‘cultural and technological’ presence in a foreign discursive environment

The displays of artefacts in Olympic ceremonies help communicate an image or reputation of China to audiences abroad. However, such interventions in a foreign discursive environment can be interpreted in a different way when the foreign spectators view them (Schneider, 2019). Technology was part of the opening and closing ceremonies for the 2018 Pyeongchang Olympics. Within the context of the Olympics ceremonies, *Beijing 8-Minute Show* (2018) sits together with Korea’s technological performance (i.e., drone performances). Chinese state-owned media highlighted China’s technological achievements of the day (as I have discussed), but some foreign media’s (second-order audiences) attention focused on China’s conventional cultural elements. For example, the British newspaper, *The Guardian*,

summarized ten highlights from Pyeongchang Winter Olympics closing ceremony. In terms of *Beijing 8-Minute Show*, as *The Guardian* reported,

Beijing got to contribute its own section to the show – and it started with some astonishing lit-up see-through inline skating pandas. Top that. (Belam, 2018)

As another example, National Public Radio (NPR), an American non-profit media, covered the Pyeongchang Olympics Closing Ceremony and reported that

Beijing's section of the program includes some reminders that China has pandas. Whales are also repping China, it turns out. (Chappell, 2018)

According to these two excerpted media reports, the foreign media seem to be fixated on typical Chinese cultural elements like the panda (Figure 6-2), but the technological elements are absent. The Western media have a skewed view that overlooked China's technological achievement displayed by the immersive digital technology in *Beijing 8-Minute Show* (2018). Moreover, at the Olympics, media commentators are usually provided with script notes to refer to when describing what is happening in the program. There was not much access to other televised broadcasters due to arrangements with the Olympics committee. In a video of the closing ceremony found in the Olympics official channel on YouTube³, there are few references to China's use of technology in the commentary; instead, only typical Chinese icons, such as the phoenix and panda, are mentioned.

In contrast to Western media reports, the commentary from an Asian TV channel, Workpoint TV, focused more on Chinese power and technology. Workpoint TV (n.d.) is a nation-wide television station owned by a Thai media company. As stated in their commentary,

There will be a performance from the next Olympics host city, Beijing. See you in Beijing in 2022. This performance is directed by Zhang Yimou, a famous director in China. He is well known. If I am not wrong, Zhang was the choreographer of the 2008 Olympics opening ceremony. This show uses 24 ice screens. The panda is the iconic mascot of China. The 24 ice screens represent the 24th winter Olympics. The show is a second to none. The performers and members of the creative team are mainly Asian. The LED screen technology is used to display the advanced technology of China. The digital images on the ground mean China's highway bridges. By the end of 2017, China has more than

³ See <https://www.youtube.com/watch?v=7rDxnPkLZMc> (starting at 1.29.57), retrieved on April 2, 2022.

800,000 highway bridges. In 2017, China had expressways longer than 130,000 km over the countries. This sense represents the phoenix. The show narrates the power of China. One of the prides for China is the ability to build aeroplanes. China's plane is competitive with Boeing and Airbus. China has the ability to send humans out to space and create space station. China is a solid competitor to Russia, USA, and EU countries. This sense displays the logos of 24 Winter Olympics in the history years, including Beijing Winter Olympics in 2022. China also wants to present advanced information and communications technology like what was delivered in the Korean ceremony. China is sending messages to the whole world with smiles. The panda collects smiles from Chinese people and sends them to the world. In the end, the president of China welcomes global audiences... (Workpoint Official, 2018)

What the above commentary highlights about *Beijing 8-Minute Show* (2018) largely corresponds with Chinese media reports. For instance, both media emphasise China's technological achievement in aerospace, transportation, and LED screens. The Thai commentator interprets the cultural element, the phoenix, as the symbol for Chinese-created expressways, aeroplanes, and space station demonstrating the pride and technological achievement of the PRC, which is in line with the CCTV commentary discussed in section 6.1.1. The cultural element in both commentaries is not only considered in terms of China's traditional image but also as a contemporary representation of Chinese power and pride.

As a Thai TV station, Workpoint TV's positioning is mainly aligned with Asia, and it also represents the voice from the East. Similar to China, many other nations in Asia have moved, with state support or otherwise, from a manufacturing-based economy to a digital economy. Some scholars (Noronha & D'Cruz, 2019, as cited in Athique & Baulch, 2019, p. 2) claim that South Korea and China are the major players in the manufacturing domain of the digital economy, while India and the Philippines specialise as the providers of digital labour. According to research conducted in 2006, developing countries, such as China, South Korea, and some South-east Asian countries, try to borrow other developed countries' images or obscure their own country's image in their exporting strategies (Y. Kim, 2006). The research was conducted in 2006 when South Korea was not yet recognised as a developed country by the United Nations. More recently, South Korea has a good global presence because of its technological companies (e.g., Samsung) and the Korean wave (i.e., K-pop and K-dramas) (Y. Kim, 2021). In Asia, South Korea and Japan are not associated with cheap products and

copies. China has high technology, as I have discussed in Chapter 1, but the ‘Made in China’ label is still a problem associated with ‘*shanzhai*’ and lower quality, which exists in the Western imaginary. With its rapid economic development, China wants to use digital technology to set up a new national image. For several centuries, European and American sinologists and novelists have imagined their own China, which makes up the commonly held understanding by a group or community (be it an ethnicity or a nation, our own or someone else’s) and, in turn, dictates the way an audience perceives it or them (Lee, 2018, p. 3). This Western imaginary of China has been globally dominant, but in the 21st century, ‘China’, whose shape and form was invented and maintained by the West, is starting to escape from it (Lee, 2018, p. 3). When the collective imaginary breaks down, it is necessary to create a new one (Castoriadis, 1987).

As claimed by Hartley (2022, p. 18), ‘in relation to the globalisation of Chinese culture, this means that “China” is already coded, and that innovation and change in the “rules” of that code will be put into effect by the population of users’. It is difficult to say the audiences in front of screens have the same immersive experience as the spectators on site since the sense of presence in the VEs is more advanced than in front of screens. More importantly, digital technology is part of a nation’s hard power, so it is important whether the foreign audiences consider DIA in a ‘soft’ way in relation to China’s culture. In other words, it is significant to see whether the cultural presence about China’s digital power is ‘soft’ to global audiences. This will be discussed in the next section.

6.1.3 The disparity among audiences within and outside China

In this section, I reference third-order audiences’ comments on the video⁴ of *Beijing 8-Minute Show* (2018) from Workpoint YouTube channel to discuss the perceptions about ‘Digital China’ among global audiences. The comments on the official video presented by CCTV are turned off⁵. As indicated from some of the comments, there is a disparity between China’s new cultural presence in the making and the global audiences’ imaginary of China:

⁴ See <https://www.youtube.com/watch?v=I6JG5TCD9YI>, retrieved on January 17, 2022.

⁵ See <https://www.youtube.com/watch?v=KRR154Kk-gE>, retrieved on January 17, 2022.

It's a boring ceremony that doesn't look like China at all. (Along the Kaidou, comment, 2018)

It's true that it's boring, but isn't the Chinese knot, dragon, phoenix, etc., all representative of China? (Yuharuo, reply to Along the Kaidou, 2018)

I only knew about pandas (laughs). (Along the Kaidou, reply to Yuharuo, 2018)

I feel that it is appealing to China, which is changing with high tech. (Jeonghwa Byul, comment, 2018)

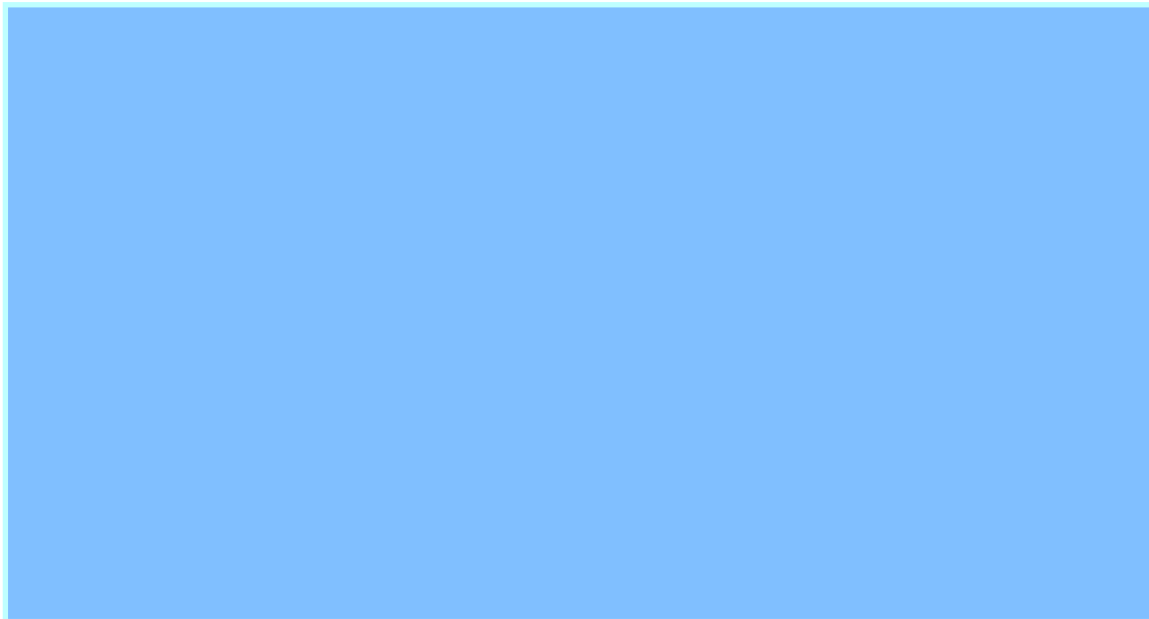


Figure 6-2. The 'skating panda' with other skaters in *Beijing 8-Minute Show* (2018).

The comments consider the panda, Chinese knot, dragon, and phoenix as the identifiable presence of China. However, technological elements are not mentioned in the comments in terms of what the commentators think China looks like. In addition, some comments explain that the reason that they do not like the *Beijing 8-Minute Show* (2018) is due to the lack of 'the portrayal of [Chinese] culture and authenticity'. This is reported in some of the comments:

I didn't like this as much as the presentation in 2004 in Athens. I think Beijing saw Tokyo's presentation in the closing ceremony in Rio and thought they had to sell the notion that they are a technologically advanced nation, which everyone already knows. It misses the portrayal of culture and authenticity in this one. It

didn't feel like China like in 2004. It felt more forced and artificial. (Green Hornet, comment, 2019)

the director explained that the 2008 opening ceremony had shown the world China's culture and history. Now it's the turn to show the technological advanced China to the world. Of course, the cultural part is included, although subtly. (Lucky Lee, reply to Green Hornet, 2019)

the culture was [sic] it's too subtle. It felt more like they were pushing an agenda. But that's just me. (Green Hornet, reply to Lucky Lee, 2019)

China is quickly becoming one of the most technologically advanced nations on the planet. But I think the problem here is that they've not yet found a way to root their advancements into their deep culture and history (South Korea, I think, faces this issue too in some areas). Japan, on the other hand, has achieved this to a tee. Retro-futurism has long been a part of Japan's image since the early '70s. For decades Japan was recognized as a pinnacle of technological advancement. It's an image they've been able to cultivate deeply into their own culture. (Koroniria Ryder, reply to Green Hornet, 2019)

China is arguably a digital powerhouse in the world (Keane & Chen, 2017). China wants to structure its cultural presence as a digital power in international audiences' imaginary. The problem is whether the global audiences accept the technological factors as part of China's culture, whether they are willing to consider digital technology as part of the cultural imaginary in relation to China. The online comments above from international audiences demonstrate that technology is still being separated from Chinese culture. For example, as the comment by Lucky Lee highlights, the 2018 *Beijing 8-Minute Show* aimed to show advanced technological China to the world, but the cultural part is included 'subtly'. As I have discussed in Chapter 2, imaginary is a collective perception, and different groups have different imaginaries. Some global audiences have not considered the identifiable technological elements as cultural imaginary of China in their minds. As another example, Koroniria Ryder uses Japan as a comparison in their comment. As they explain, retro-futurism has long been a part of Japan's image since the early 1970s. The global audiences' cultural imaginary of Japan is deeply related to modern technology due to the presence of cyberpunk and its genre derivatives, such as retro-futurism, in Japanese artworks and cultural products. Retro-futurism and its genre derivatives are highly connected with Japan's rapid

economic and manufacturing development in the 1960s and '70s. Retro-futurism is a movement in the creative arts showing the influence of depictions of the future produced in an earlier era (Guffey & Lemay, 2014, p. 434). To change global audiences' perception, China should realise the extent of the preconceptions that such audiences have in their minds. Otherwise, the spectacular digital displays may be regarded as just a gimmick or publicity designed by the Chinese government, rather than as an immersive art sharing an authentic portrayal of China.

The audiences' perception of China's culture is still, to some extent, stuck at the conventional view expressed around the time of the 2008 Beijing Olympics. For example, as I have mentioned, the *Beijing 8-Minute Show* (2004) at the handover performance in the closing ceremony of the Athens Olympics presented Chinese elements like jasmine, red lanterns, and kung fu. As shown in research about the cultural influence of China in the Asia Pacific region, most Australian responses about Chinese culture are limited to traditional festivals (e.g., Spring Festival and Dragon Boat Festival), traditional culture (i.e., kung fu, lion dance), tea and food, architecture (e.g., Great Wall of China), and avant-garde art; only a couple of people from the younger generation mentioned Chinese high-tech products like Huawei, Xiaomi and Lenovo (Keane et al., 2020, p. 151). There was possibility for using China's typical cultural elements (the so-called 'cultural IP' discussed in Chapter 4) to empower the art value in the Olympics show. However, Zhang Yimou, the director, subsequently avoided this short-cut way in the 2018 *Beijing 8-Minute Show*. The 2018 *Beijing 8-Minute Show* arguably presented a new image by highlighting technology to the world, but not in a soft way. Technological achievement, as a form of cultural presence, had yet to be accepted within the cultural imaginary of the audiences.

Digital technology enables China's cultural presence (cultural displays, performances, and art exhibitions) to become a digital presence through the internet platforms, so the presence can be received and engaged by audiences globally. At the same time, however, such connectivity certainly also allows people within China to construct a far different imaginary of their nation, compared to the prevailing imaginaries outside China. As a few YouTube comments in Chinese demonstrated, Chinese people responded to *Beijing 8-Minute Show* (2018) with some pride:

I don't know why, but I spontaneously cry and get moved! The *8-minute Show* [2016] of Tokyo has a modern, cool, chic feel, but I still prefer *Beijing 8-minute*

Show [2018]! Beautiful value is delivered from the warmly humanistic performance! Also, the creativity of *Beijing 8-Minute Show* is more unified and complete [than Tokyo's]. (Vicent Jack, commented, 2021)

Only China understands the meaning of the national anthem. The achievement of China is not easy! China rises! (Wang Damei, commented, 2020)

Previously, I thought that Shiina Ringo's *Tokyo 8-Minute Show* [2016] could surpass Zhang Yimou's. Tokyo Olympics opening ceremony could even have become No. 1 in Asia, if Shiina Ringo had not resigned halfway through. So, *Lao Mouzi* [Zhang Yimou] is always *yyds* [永远的神, lit. trans. 'eternal god' which connotes people having god-like qualities]. (Zhang Lingfu, commented, 2021)

Even though these comments do not represent all Chinese audiences, nonetheless they reflect a collective imaginary of China in terms of the 'Chinese Dream', a resurgent China. The disparity within and outside China, thus, should be addressed as a significant factor in structuring China's cultural presence in the world. At the end of the *Beijing 8-Minute Show* (2018), China's theme of the four 'new great inventions' was displayed on an on-site video. Afterwards, celebratory accounts of China's four 'new great inventions' appeared in the Chinese media: these 'inventions' are high-speed rail, e-commerce, dockless shared bicycles, and mobile payments (H. Wu, 2019). As travellers to China attest, China is far more advanced in many areas of its economy than these foreigners are led to believe (H. Wu, 2019). These four 'new great inventions' are, of course, a reference to China's 'Four Great Inventions'. Ancient China's 'Four Great Inventions' ('四大发明'), namely papermaking, printing, the compass, and gunpowder, have had a significant influence on modern Western civilisation and culture (Needham & Lu, 1976). Schneider (2019) claims that the mainstream media celebration of China's technological and material achievements boosted nationalism among Chinese people within China; this view may be considered as a type of preconception by Western media. As mentioned earlier in this chapter, Germany's main state TV channel was surprised that the 2008 Beijing Olympics opening ceremony had not been 'a propaganda show'. The traditional 'Four Great Inventions' have arguably become an authentic symbol of China's cultural heritage recorded in history books and preserved in museums, yet the presence in terms of the new four is still in the making on the global stage.

6.2 Playing with the tropes of an imagined China

Drawing on the close reading of the artworks and art criticism in media reports and interviews for Case Study 6, this section examines *Blueprints* (2020), a solo art exhibition by Chinese contemporary artist Cao Fei at the Serpentine Galleries, UK. *Blueprints* is based on Cao Fei's social research project which she had been working on for five years, examining the social history and urban transformation of Jiuxianqiao district in Beijing, where her studio is located (MUSE, 2020). Artworks in *Blueprints* include *The Eternal Wave* (2020), *Nova* (2019), *Whose Utopia* (2006), *Asia One* (2018), and *La Town* (2014). Many digital technologies such as the internet, artificial intelligence (AI), augmented reality (AR), virtual reality (VR), and big data feature in Cao's artworks (Serpentine Gallery, 2020).

Unlike Zhang Yimou's *Beijing 8-Minute Show* (2018) which is endorsed by the Chinese government, *Blueprints* has been favoured by global mainstream art critics. Cao provides an alternative way of invoking China's technological imaginary in cultural presence. With her reputation rising in the international art world, Cao Fei has become an influential young Chinese artist on the global stage. Cao is a multimedia artist and filmmaker based in Beijing. Video, digital media, photography, and internet art all play a role in this artist's engagement with an age of rapid technological development in China (Serpentine Gallery, 2020). As *China Daily* states, 'domestic and international media outlets have described Cao as an artist who depicts China's social shifts and individuals affected by the changes' (Z. Deng, 2021). Moreover, 'Cao stands out as an example of a Chinese artist working in a global context', proclaims Philip Tinari (2021, as cited in Z. Deng, 2021), an American curator and expert in Chinese contemporary art. Cao's works have been exhibited at Kunstsammlung Nordrhein-Westfalen in Dusseldorf in 2018, Museum of Modern Art in New York in 2016, and Contemporary Art Centre of South Australia as part of the OzAsia Festival in 2014.

In her works shown in *Blueprints*, Cao re-narrates science fiction stories about China's digital power as tropes to critique the alienated world influenced by advanced technology. As *The Times* comments, 'she is playing with the tropes of science fiction. But even as she evokes an unreal world, she wants to make works that stir real feelings' (Campbell-Johnston, 2020). The following sections, thus, focus on how Cao reflects China's technological imaginary in the exhibition. In order to deeply understand the different approaches to telling China's story 'well', the last section presents a comparative analysis of two case studies about China's cultural presence in the world.

6.2.1 Narrative Sino-futurism as the imaginary of digital China

This study is not trying to define Cao's works as Sino-futurism, but rather Sino-futurism provides a lens to examine her works. The idea of Sino-futurism is proposed by artist Lawrence Lek in his video essay *Sino-futurism (1839 -2046 AD)* (2016). The work explores the parallels between portrayals of artificial intelligence and Chinese technological development, combining elements of science fiction, documentary melodrama, social realism, and Chinese cosmologies to delve into and critique the present-day dilemmas of China and the people of its diaspora. Lek (2016) explains that Sino-futurism is often mistaken for contemporary China, yet it is a science fiction that already exists. In other words, Sino-futurism uses the technological imaginary in science fiction as a trope for Chinese technological development today. Sino-futurism represents a new imaginary of China from Western observers. Some scholars argue that Sino-futurism is developed out of the Orientalism that previously relegated China to a space of backwardness and barbarism (Niu, 2008) and which now connects it with a projected futurity (Conn, 2020). Moreover, Sino-futurism can be considered as a schism of retro-futurism. Retro-futurism is the remembering of science's anticipation from the past. The Japanese artist Hajime Sorayama is the representative retro-futurist. Sorayama is best known for airbrush paintings and hyperreal illustrations, and his depictions of robotised women have elevated him to an internationally known artist (Kawecki, 2020). As mentioned in section 6.1.3, retro-futurism is the genre derivative of cyberpunk. Cyberpunk has birthed a few genre derivatives of retro-futurist schisms such as steampunk and diesel-punk (McFarlane et al., 2020). The renowned science fiction novelist William Gibson's (2001) first glimpse of Shibuya in Japan, all that towering, animated crawl of commercial information, reminded him of the city in *Blade Runner* (1982), a canonical cyberpunk film. For Gibson (2001), 'modern Japan simply was cyberpunk'. Cyberpunk becomes the critique of a future society based on the technological imaginary of modernised cities like Tokyo. More recently, with the rapid development of digital technology, Sino-futurism is becoming a technological imaginary in terms of its Orientalising impulse and appearance in contemporary artworks. Moreover, immersive digital technology generates the illusion through artworks to transfer viewers from the real world to the science fiction, and from the past to the future. Sino-futurism, therefore, with the Western observed technological imaginary becomes a possible art genre of DIA on the global stage, as in the

aforementioned VR work by Cao Fei, *The Eternal Wave* (2020), and Lawrence Lek's digital installations, *Ghostwriter* (2019) and *AIDOL* (2019).

In the *Blueprint* exhibition, Cao uses the tropes of science fiction, cultural elements referencing the Sino-Soviet cooperation period, and the criticism of digital technology to represent a spectacular of an imagined China. *Blueprints* is based on Hong Xia (HX), research on China's modernism, which includes historical material, films, books, installations, and VR and AR works (Z. Deng, 2021). Cao's research project, HX, draws from the history and the current state of Jiuxianqiao (as mentioned in section 6.2). The project incorporates the context of the Sino-Soviet relationship into China's industrialisation. The vanishing Beijing neighbourhood was the birthplace of China's electronics industry in the 1950s. This is pointed out in a write-up in *The Times*:

Over the past few years, Cao has plunged into some pretty arcane and complicated research, looking into the history of technology, of sci-fi cinema, of the local community, of the relationship between China and the Soviet Union. (Campbell-Johnston, 2020)

After 1949, when 'New China' was founded, rapid industrial development took place throughout the 1950s and '60s. The development was fuelled with the assistance of communist allies. During this time, Jiuxianqiao changed from a rural area into a conglomerate of factory infrastructures. According to an interview with Zhang Zhiyi, a retired employee of Factory No. 774 in Jiuxianqiao,

Factory 738 and Factory 774 were built with assistance from the Union of Soviet Socialist Republics (USSR), and Factory 718 was built with the aid of the German Democratic Republic (GDR). They brought a team of staff to assist us, including technicians, workshop directors, and plant managers. (Tao, 2021)

Cao (2020, as cited in Campbell-Johnston, 2020) says the first computer in China was built there, developed from a blueprint that came from the Soviet Union, and this factory saw the birth of the Chinese computer age.

Many Chinese cultural elements representing the specific period (1950s to 1960s) in China appear in *Blueprints*. For instance, the exhibition starts with a replica of the cinema atrium, which stems from the history of the Hongxia Theatre (Cao, 2020a). This cinema, the Beijing Hongxia Theatre, opened in 1958 and closed in 2008. Its architecture and the name Hongxia

(红霞, lit. trans. Red Dawn) are Soviet-inspired (Campbell-Johnston, 2020). These cultural elements not only relate to the Sino-Soviet relationship but to neighbourhood life and movies. As the review in *Dazed* magazine adds:

Cao Fei has interviewed the residents surrounding the theatre, collecting memories and objects... You can see this in the opening gallery of *Blueprints*, which is transformed into the lobby of the theatre, complete with vintage cinema tickets, magazines, and filmed interviews peppered across the walls. (Yalcinkaya, 2020)

The lobby of the theatre, complete with vintage cinema tickets and magazines, features the aesthetics of the 1960s in China. Moreover, the VR piece *The Eternal Wave* (2020) shares the same name as a Chinese thriller, and viewers can view part of this thriller at the Hongxia Theatre in the VR piece. This thriller, *The Eternal Wave*, was originally released in 1958 and re-released in 2021 in mainland China. It is a film about the intelligence work of the CPC during China's wartime (1930s and 1940s). *The Liberation Daily* (解放日报), owned by the CPC of Shanghai city, comments on the film as representing 'the pioneers of CPC fighting for the revolution' (C. Li, 2021).

Cao uses her science fiction style narrative and the facility of digital technology to connect the past, present, and future of China's story. For example, *The Eternal Wave* (2020) in the exhibition is Cao's first venture into VR. Cao works at the cutting edge of VR with Acute Art, and the artworks in *Blueprints* tell us how digital technology is ushering in a new opportunity. This VR work creates the illusionary experience extracted from science fiction and the real world, and is based on the artist's memory and research. Viewers can experience the VR piece through a VR HMD headset at the exhibition venue. The experience in the VR begins with the viewers standing in a simulated kitchen at Cao's studio in Beijing before leading viewers off into another virtual space (Cao, 2020b). Moreover, viewers can interact with the virtual world, such as flipping the pages of a calendar, opening the door of a fridge, and handing a ticket to an usher. The work allows a first-person journey through the territory of *Nova* (Cao's science-fiction film in *Blueprints*). Portals in the virtual kitchen transport viewers both to the Nova computer lab and to Hongxia Theatre, where the idealistic thriller *The Eternal Wave* (1958) is screening (Judah, 2020). *Nova* (2019) is a science fiction film that tells a story about an engineer who develops a computer in the lab at Jiuxianqiao and

then sends his son to live inside the machine world. The son slips between past and future worlds in the fictional no man's land of an electronic city called Nova.

6.2.2 Understanding Sino-futurism in art from a Western context

This section investigates the credibility of Sino-futurism in Cao's works through an analysis of the reactions of the 'second-order audience', including media workers and critics who filter, rework, and relay the exhibition on the ground. By highlighting VR and AR in the exhibition, *Blueprints* received positive reviews from international media. As *The Guardian* says, her work 'is a perfect fit for a world adjusting to the Covid-19 pandemic' (Bakare, 2021). During the pandemic lockdowns, people were quarantined at home, and public activities were suspended in most countries. *Blueprints* exhibition had to negotiate the COVID-19 pandemic in early March of 2020. The VR installation, *The Eternal Wave*, at the exhibition was turned into an augmented reality work – accessible on any mobile phone – in collaboration with Acute Art, enabling audiences to experience it despite lockdown restrictions. The technology company Acute Art (2020) provides technological solutions for contemporary artists such as Kaws and Olafur Eliasson (whom I mentioned in Chapter 5) to digitalise their artworks or create digital works. Acute Art's founder Daniel Birnbaum (2020) says that 'we will need new ways to interact with art after the lockdown. I believe virtual reality is the answer'. Even though digital work loses its authenticity since the original work can be copied and then visualised (Groys, 2008), it can provide alternative accessibility during the pandemic.

VR and AR not only provide an alternative way for audiences to view but also serve to balance the political distance of Sino-futurism in art. Viewers can see art from a political view (Berger, 2008), and sometimes artists or curators intend to guide viewers in seeing in this way. In Cao's work, a special period of the Sino-Soviet relationship and even the name *Hongxia* itself have deep political meaning, which inevitably leads the media and critics to see the work in a political way. The sinologist Linda Jaivin (2019) writes that the Asia-Pacific Triennial of Performing Art's 2017 performance in Melbourne of *The Red Detachment of Women*, a revolutionary opera from the Cultural Revolution, aroused the rage of protestors, many of whom had fled Chinese persecution. However, the use of technology (i.e., the novel experience and special effects), to some extent, distracts people away from the

strong political meanings. As Rachel Campbell-Johnston (2020), *The Times* newspaper's chief art critic, comments on Cao's *The Eternal Wave* (2020), 'I, admittedly, am something of a VR neophyte. I was amazed by every dizzying, mind-boggling moment'. Audiences, thus, can be amused by the novelty of digital technology and, at the same time, stay at a political distance to look at the work.

In addition, the theme of the criticism of technology, in particular digital technology, makes Cao's work accepted by the global audiences and Western mainstream media. *Blueprints* won the Deutsche Börse prize in 2021; the prescient intersection between technology, human emotion, and state power won over the jury (Bakare, 2021). *The Guardian* comments on Cao Fei as the 'artist who explores the obsession with tech' (Bakare, 2021), which further validates the artist's ability to convey the consequences of technology on society through art. For instance, *Nova* (2019), Cao's sci-fi film, tells the tale of a Chinese computer scientist working on a secret project to transform people into digital entities. A failed experiment sees the man's son become lost in cyberspace; trapped as a digital ghost, he spends the film trying to reconnect with the real world. As *The Guardian* notes, *Nova* 'is a metaphor for blinkered adherence to ideology: a future the parent believes in so fervently they will commit their only child to purgatory' (Judah, 2020).

Cao's artworks in *Blueprints* are not just about techno-utopianism in China but also point to universal values including the side-effects of the development of digital technology, such as the loss of privacy in cyberspace, the obsession with solutionism, and the human alienation caused by AI. To some extent, technology is a kind of literacy. There is something universal about digital technology, so the audiences could appreciate *Blueprints* because it has familiar icons like AI, VR, and robots mixed with Sino-futurist imaginary. As Cao said in a publicly available interview,

Now, everywhere records your fingerprints [sic], your face, CCTV and since we perform to the database, what we are living is like a big brother influence of the camera. In one way, we are fascinated by the future and technology, but in another way, we contribute to the digital. (Cao, 2020a)

The influence of digital technology is not just specific to China but is a global problem. Samuel Greengard (2015, p. 32) gives a general view that thanks to ubiquitous digital technology, low-cost sensors, and easy-to-deploy microelectronics, it is possible to connect 'just about anything and everything to the internet'. Users give permission for installed apps

to collect data. Under the surveillance of the internet, people receive recommendations to buy new products and services but are also caught up in concerns about privacy and security.

The criticism of digital technology is a more general imaginary that has been accepted by global audiences and critics unlike the Western imaginary of China's development.

Therefore, Cao's works concerning the development of digital technology, especially its negative consequences, have resulted in gaining the global audiences' favour and, in turn, qualifying her as an international artist. As she said in an interview, 'In the past years, my work has been shown quite extensively in the West, and I received much feedback from that audience' (Bukuts, 2021). In addition, as a write-up about Cao's works from *Wallpaper*, an art and design magazine based in London:

Though many of Cao's works feature China as part of the *mise-en-scène*, 'they have a sense of universality...through the themes that she is dealing with, or the use of popular global culture and iconography'... 'it speaks to a likewise global audience. While she does take a particular interest in developments in China, due to how rapidly and profoundly economic change has taken hold there, perhaps the need to pigeonhole her as a Chinese artist is ambiguous.' (D. Wu, 2021)

The transformation of digital technology in the global economy and people's daily lives not only becomes a means for contemporary artists to reach out to new audiences, but also the technology itself becomes the theme of these artworks. With the representation of China as an emergent digital power eliciting attention, the development of digital technology in China is becoming spectacular in the art world. As the scholar of science fiction Virginia L. Conn (2020) argues, Chinese authors are put in the position of responding to the concept of Sino-futurism and catering to Western assumptions in order to be legible on a global scale. Accordingly, these DIA works tend to feature the universal value of technology and Sino-futurism imaginary in relation to China, thereby 'allowing' artists like Cao Fei to step on the global stage and bring China's cultural presence to global audiences.

6.2.3 The comparison of two ways to tell China's stories 'well'

So far in this chapter, I have examined the two case studies of DIA using digital technology to tell the stories about China's technological development. Case Study 4, *Beijing 8-Minute Show* (2018), shows China's new image by using a historical approach to highlight China's

digital power, and reflects China's government-oriented imaginary in the 21st century. Case Study 5, Cao Fei's *Blueprints* (2020), applies Sino-futurism, a Western observed imaginary about digital China, to be legible in the global art context. These two artists use different ways to tell China's story 'well'. In order to further investigate the approaches for using digital technology to engage China's cultural presence through DIA, this section summarises and compares the different approaches undertaken in these two case studies for telling China's story 'well'.

Digital technology should be applied to dilute the political meanings of China as digital power through art. In order to cultivate a positive image of China, the AR technology in *Beijing 8-Minute Show* staged a massive and splendid spectacular about China. For example, a giant dragon was projected on the immersive stage (Figure 6-3). The giant immersive stage with projected images also represented the heroic image of China. As the CCTV (2018) commentators said in the video of the live-streamed show, the 'Chinese dragon is a symbol of Chinese power'. Furthermore, as I have introduced in section 6.1.1, the projected image of a giant phoenix and aeroplanes and advanced astronomical telescopes on the ice screens were interpreted as China's new contributions to the world's technology according to the CCTV commentators. Here, China has been presented in heroic terms for using its technological achievement to contribute to the world. Thus, in its domestic media, China has been portrayed as heroic and unified. This also extends to its cultural products. For instance, in Liu Cixin's science fiction novel *The Three-body Problem* (2014), the hero is a Chinese man who uses the 'Sword of Damocles' to protect the planet from alien invasion. However, it needs to be acknowledged that American and other Western media have largely imaged China as a place of repression, and censorship is an integral part of the world that they depicted (Conn, 2020). The interventions in a foreign discursive environment can be interpreted as hostile when the foreign media interprets them (Schneider, 2019). Rather than counteracting these biased narratives, Sino-futurism presents a critical approach for subverting cultural clichés (Lek, 2016). The technologised imaginary of China can be used to tell a cautionary tale where the human future is alienated by digital technology. In Cao's work, VR creates a playful approach to narrating Sino-futurism. The animated (cartoonish) images and the 'magic circle' in the virtual environment allow transformation across different timelines to create a playable time machine to actualise the tragic story in science fiction (Figure 6-4).



Figure 6-3. The projected image of the giant dragon in *Beijing 8-Minute Show* (2018).



Figure 6-4. In Cao Fei's VR work, a science fiction character appears in Cao's kitchen.

The two selected case studies represent China's digital technology, respectively, in a positive and critical way. In the government-oriented approach, at the end of the *Beijing 8-Minute Show*, Zhang Yimou displays a short video about how Chinese people's daily lives have been influenced by digital technology. In this short video, e-commerce is shown as one of China's four 'new great inventions', which was interpreted by the CCTV commentators as a contributor to convenience in Chinese people's lives. E-commerce is also represented in Cao Fei's *Asia One* (2018) at the *Blueprints* exhibition. *Asia One* is set in an e-commerce warehouse the size of a city, and its robot mechanisms are tended to by two voiceless loners that are unable to communicate. The work was shot at various sites, including the world's

first fully automated sorting centre in the Jiangsu province of China. The work has been described in *The Guardian* as ‘a surreal sci-fi rom-com that speaks to China’s past and the global future’; and as the reviewer further comments,

The warehouse’s two human inhabitants, a young man and woman, have mindless jobs – one scanning, the other deskbound. Whether side by side or observing each other through technology, they are, of course, alienated. (Sherwin, 2020)

Shaped by and reliant on Western projections of Asia as the *techne*, Sino-futurism posits Chinese individuals (the labourers) themselves as resources exploited by original producers of cultural or technological capital (Conn, 2020). Cao’s work features the labours’ alienation from fast-developing e-commerce driven by capital. The criticism of digital technology through narrating the alienation along with the Sino-futurism imaginary becomes the core of Cao’s work.

International artists like Cao Fei have employed a critical perspective to reflect on China’s digital technologies and the role of digital technology in society. This becomes an alternative narrative to the official one which is dogged by governmental slogans. The side effects brought about by technological development and modernisation have become the ‘gazed-upon’ object for audiences abroad. The critical approach is ‘well’ in a Western context. Empowered by Sino-futurism, these artists’ works are received by global audiences. However, Sino-futurism is oriented by Western observers and also has its bias. As Gregory Lee (2018, p. 3), a UK scholar on Chinese studies, argues, ‘the “China” we have created, that we have imagined, that we have dreamt up and of which we have dreamt – the China that frightened us as well as fascinated us – has slipped our grasp’. China’s previous Chairman Deng Xiaoping’s (1984) *kexue jishu shi diyi shengchan li* (‘科学技术是第一生产力’, lit. trans. ‘science and technology are the first productive force’) was a slogan for China in the 1980s. In fact, China has been practising this slogan since the reform and opening-up policy in 1978. Now, China is arguably becoming a digital superpower and being recognised by the world. However, China faces another challenge from the preconceived ideas that connect the digital power with China’s political image. Even in South-east Asia, some residual suspicion remains about Chinese cultural products and online applications because of their association with authoritarianism and censorship (e.g., use of facial recognition,

persecution of Uyghurs, Mao, and Xi Jinping) in China (Keane et al., 2020). Hence, in light of Cao's use of VR, for China's soft power, the significance of the newness in DIA is to distract audiences from the political and historical seeing to the cultural or aesthetic seeing instead of using the technology to highlight China as a digital superpower.

6.3 Conclusion

Unlike Japan's teamLab's commercialised approach of being well received by the global market (as I have discussed in Chapter 4), China's DIA works showcased in this chapter are endorsed by the government, shown in international mass events, or supported by institutions for exhibiting art. The chapter explores the range of global reactions to the two examples (Case Study 4 and Case Study 5). The chapter provides a lens to examine China's cultural presence in the world and compares two different approaches to using digital technology to narrate China's story. The first approach, as exemplified in *Beijing 8-Minute Show* (2018), displays China's emerging technological leadership and showcases Chinese digital enterprises. By contrast, the second approach, as shown in *Blueprints* (2020), takes a critical approach by drawing attention to China's rise as a technological superpower in Western audiences' favour.

Digital technology is not only a means to boost the economy and change China's global reputation, but it is also a strategy to enhance 'cultural power' (Keane & Chen, 2017). Digital technology is helping China stage spectacles which, to some extent, are contributing to its presence in the cultural field of the world. China's policymakers want to use digital technology to rejuvenate national culture and foster a positive image to the world. The administration's view on soft power is a significant driver in how official artists envisage spectacles such as *Beijing 8-Minute Show*. Digital immersive technology is used to narrate a positive story about China's technological achievement, and it provides opportunities for China's digital technology companies to enhance their reputation. However, even though some global audiences have recognised China's fast-developing technology, they have not yet connected this technological presence as a cultural imaginary about China. People within China generate a far different imaginary of their nation than one normally sees outside China or in Western media, where China's digital power is correlated to its authoritarianism image.

Moreover, Sino-futurism representing a new technological imaginary about China offers an alternative possibility for representing China to the world. Through the examination of Cao's work, Sino-futurism is shown to empower the art value of DIA; it is used as a trope to criticise the rapid development of technology and allows artists like Cao Fei to step onto the global stage. At the same time, however, Sino-futurism does not counteract biased narratives in the Western imaginary. Nevertheless, this may be turned to DIA's advantage. Sino-futurist DIA, like Cao's work, uses the newness of immersive digital technology to augment the imaginary of Western audiences outside China; thus, these viewers can be engaged by the novelty and, meanwhile, stay at a political distance to see the work. In terms of the use of immersive digital technology in *Beijing 8-Minute Show* (2018), its newness highlights an idea (about a heroic China's digital power) that is contrary to the Western audiences' cultural imaginary.

CHAPTER 7

Conclusion

In this final chapter, I will briefly summarise my arguments before outlining the contributions to the field and the limitations of the research. This study has explored the role of digital technology in China's rejuvenation, especially in relation to digital immersive art (DIA); it has examined how audiences, both in China and globally, are responding to 'Digital China'. It has concentrated on how DIA as a cultural product was produced and consumed in China, examined viewers' cultural experience of China through DIA, and explored how international audiences perceived China's cultural presence in global art exhibitions and mass events. At the start of the project, I had three research questions: (1) Can the cultural presence of DIA overcome preconceived ideas that may exist amongst its audiences and influence their perception of China? (2) Can DIA thus be used to augment China's cultural soft power, and how might it change perceptions of China? In Chapters 1 and 2, I discussed the context and theoretical frame in relation to the DIA of 'Digital China' to address the research questions. In chapter 3, I outlined the research methodology and reasoning for using the selected methods in my study. The 'multi-perspectival' approach was applied, incorporating textual analysis, interviews, and focus groups, to explore the cultural content, production, and audience reception of DIA. Chapter 4 considered the dynamics of DIA production in China's creative industries and the commercial mechanism for regulating the production and distribution of DIA in China's cultural system. Chapter 5 examined viewers' art reception of DIA through three notions of 'illusion', 'playfulness', and 'authenticity'. In Chapter 6, I first investigated the role of China's high-profile art (i.e., the Olympics opening ceremony) as part of a political mechanism and then examined how foreign audiences receive different types of China's DIA works on the global stage.

In this study, some key arguments informed my research findings. Firstly, artists and art are highly placed representational and meaning-making systems of society. 'Human cultures can be regarded as massive distributed cognitive networks, involving linking many minds, often with large institutional structures that guide the flow of ideas, memories, and knowledge' (Donald, 2006, p. 4). Most art is metacognitive in its role – that is, it engages in self-reflection, both individually and socially (Donald, 2006). Secondly, humans take a historical

or political view when they see art (Berger, 2008). That is to say, people use their frames of understanding to make sense of the artistic object and the process that created it; thus, art may influence audience perceptions about the object represented in art or the society from which the artist emerged. Thirdly, technology has a far-reaching influence on art. The medium of artistic expression affects what can be represented, and these media differ tremendously between societies in terms of different histories or geographies (Donald, 2006).

7.1 Does cultural presence of DIA change preconceived ideas? Rethinking perceptions in VR

Can the cultural presence of DIA overcome preconceived ideas? Following this research, my answer would be that cultural presence of DIA has implications for changing/augmenting/alleviating human perception because eliminating distance (immersion) through art is a strategy to influence audiences' minds, and AR/VR facilitates such a strategy. However, it is more important to see art as a technology-driven aspect of cognition (Donald, 2006). In other words, digital technology plays a significant role in cogitation or perception through art, but the dynamic social system, in which humans exist and experience, conditions the functions of technology. As shown in Chapter 4, policy and commercial mechanisms regulate the role of digital technology in the production and distribution of DIA; and as shown in Chapter 5, audiences' cultural imaginary, national identity, and horizon of expectations also influence how the functions of VR/AR are interpreted in the reception of DIA.

According to this study, there are several factors that influence the cultural presence of DIA: viewers' illusion of centring in a virtual world, playfulness generated from the affordance in the VE, and distance allowing viewers to 'read' the work. In the context of art reception, viewers use their emotionality to immerse themselves in the work, while allowing for some distance to use their rationality to understand the work (Wolf, 2013). Hence, digital immersive technology has become an effective means to influence audience perception. The cultural presence of DIA allows its audiences enjoy the moment of being immersed in the virtual cultural context. At the same time, it also educates the masses since the audiences can also make sense of the cultural meanings at a distance. As discussed in Chapter 2, in the 1940s, China inherited the Soviet Union's Socialist Realism art theory that art should be

‘pleasing to the masses’ while, at the same time, educating and galvanising the masses. We are in a post-Socialist Realism stage now, but the political authorities in China still have the memory of how art made China powerful in the past. In present day China, digital technology is not only expected to engage with wider audiences but also is a way to deepen Chinese people’s perception of Chinese culture. Immersion and distance are equally significant in this process. Ideally, the novel immersive experience can attract more audiences, and distance can let audiences understand Chinese culture more deeply. Hence, policymakers, creators, curators, and even entrepreneurs in China are seeking a balanced dynamic that would enable both immersion and distance in DIA to engage with Chinese audiences.

In China’s creative industries, DIA is considered as a novel cultural product to be accepted by mass audiences. We have seen in Chapter 4 that policy and commercialisation both regulate the production of DIA. The creators of DIA have made new cultural elements or recreated existing cultural elements, but they have also needed to adapt to the commercialised circumstance in China. Art is often serving as the creative engine that drives much of the enterprise (Donald, 2006). In recent decades in China, art has become a business, and there are more roles to be played in the art world. Entrepreneurs, as economic inspectors, are now playing a significant role. They capitalise on the newness of immersive experience to attract more visitors and, in doing so, make profits. Moreover, cultural proximity, which is another factor shortening the distance of art, relates to an audience’s familiarity with a cultural context. When entrepreneurs choose the cultural elements, they prefer cultural IP with higher visibility and familiarity to shorten the distance with Chinese audiences. Even though curators hope DIA could help younger Chinese audiences acquire a better understanding about Chinese culture, they are also concerned about the mass audiences’ cultural capital for understanding the cultural meanings of art. As the interviewee C-3 said, ‘Most people have not achieved a very high degree of artistic attainments, including many young people nowadays, although we Chinese are slowly improving ourselves’. Gaining cultural capital through DIA seems to be a way to boost a higher level of perception of Chinese culture. However, the commercialisation mechanism also contributes to a superficial reception of DIA – for example, ‘*daka*’ engages the audience as a ‘sensational player’ rather than a ‘serious reader’. Viewing DIA exhibitions is fancied by younger audiences in first- and second-tier cities in China. When they go to an exhibition, they would take pictures of the works and post them on social media. With more visibility on social media, the exhibition became the next ‘box that needs to be ticked’. Thus, *daka* makes DIA a gimmick for

experiencing newness, a background for taking pictures, and an instrument for showing off on social media. However, newness is a process of change and a matter of time. At the early stage, immersive experiences attracted many viewers (many went to buy tickets and even waited in a long queue to view the exhibition), but ultimately (as shown in the research), viewers found that the experience in these exhibitions was not as effective as non-digital exhibitions in terms of the delivery of cultural value.

This study also examines how the cultural presence of DIA impacts preconceived ideas in minds from the perspective of audience effects. In the 1970s, foremost figures of reception theory Hans Robert Jauss and Elizabeth Benzinger (1970) advanced the concept of the horizon of expectation. The horizon of expectation explains how a person comprehends, decodes, and evaluates any text based on cultural codes and conventions particular to their time in history (Baldick, 2008). The viewer stands at a cognitive distance to read, understand, and interpret the works of art (Berger, 2008; Wolf, 2013). However, with the development of VR and AR, scholars and artists seem to focus more on the immersive experience in virtual art and neglect that the viewer's gaze is situated outside the artwork (Grau, 2003). It is true that immersive experience in VR can shorten the distance between the work and viewers by allowing the viewers to feel that cognitive boundaries and expectations have disappeared temporarily. However, to generate cultural presence, viewers also use rationality to read and understand the cultural meanings, which is a cognitive process. As shown in Chapter 5, viewers use their cognition to decode the represented ideas in virtual environments (VEs) regardless of whether they have visited the originating cultural context in person or not. Especially when the artwork conveys highly formal, integrated worldviews, viewers use their preconceptions to appraise the cultural significance of the work. For example, some Chinese viewers believed the Buddhist Mogao Caves were highly valuable in religious terms, so they did not think that Mogao Caves in the VR had the same value because the affordance in the VE dissolved the sacredness.

Moreover, this project has not only examined individual views of cultural experiences in VR but also considered viewers of DIA as group audiences with collective ideas. The findings surrounding this study testified to the nature of art's influence to the collective processes of thought, memory, and perception in society (Donald, 2006). In China, the concept of 'Digital China' is connected with the 'Chinese Dream' and 'cultural rejuvenation', which have been reinforced as a social imaginary (Taylor, 2003) (see Chapter 2) in people's minds by the Chinese domestic media. Chinese audiences are thus preconditioned to believe in the value of

Chinese culture as it is represented in digital formats. According to the findings in Chapter 5, some domestic audience members expressed admiration for Chinese culture, so when they saw the cultural elements, the viewers projected these preconceived ideas to the DIA work. These audiences' perceptions also allowed a critical view to look at the arts facilitated by digital technology. The value of cultural presence of DIA was derived more from the entrenched cultural aspect (i.e., the cultural value of the real-life artefact) than what the technology provided. Even though VR allows for the simulation of spaces and artefacts, the authenticity of art cannot be reproduced. Outside China, viewers also used their preconceived ideas to appraise the message in DIA. As argued in Chapter 6, the imaginary of audiences outside the PRC is quite different from the imaginary inside China. European and American sinologists and novelists have imagined their own China which has dictated the way the audiences outside China perceive it or its culture (Lee, 2018, p. 3). In the context of 'Digital China', the Western media tends to correlate China's digital power with censorship and authoritarianism (Keane et al., 2020). The Chinese government has attempted to use global cultural presence to change this negative image. China's technological achievements are still not part of a Western audience's imaginary about Chinese culture. Hence, in some global audience members' minds, the spectacles displayed by digital immersive technology may be construed as gimmicks reported by Chinese media or publicity designed by the Chinese government.

7.2 Does DIA augment China's soft power? Rethinking China's cultural presence in the world

As I was writing the conclusion to this thesis, the 2022 Beijing Winter Olympic Games made clear that digital technology was still fancied by the government to upgrade China's old image. At the opening ceremony of the Beijing Winter Olympics, China again used digital immersive technology to display and represent Chinese culture. *China Daily* published a series of news coverage highlighting the digital technology in the Winter Olympics. As reviewed in the *China Daily*, 'with the use of many cutting-edge technologies such as 5G, machine vision and artificial intelligence (AI), the ceremony served as a visual feast with fantastic lighting and images' (Wu, 2022). However, instead of displaying its achievement in terms of technology (like the aeroplane and high-speed train presented in *Beijing 8-Minute Show* in 2018), the curators of the Beijing Winter Olympics opening ceremony used digital

technology to structure an image of a unified, romanticised, and ‘green’ China. The digital immersive performance featured naturalistic elements, such as the 24 Solar Terms, Chinese landscape painting, and snow. This blending of Chinese iconography was non-political, which suggests a more mature use of DIA. It thus distracted from the slogans that were embedded in the ceremony, such as the ‘Community of Shared Future’ narrative, familiar to people in China and parts of Asia, including BRI nations (Keane et al., 2020).

Moreover, the Winter Olympics slogan, ‘Together for a Shared Future’, was incorporated into the entire ceremony. For example, the passing of the Chinese national flag was one of the highlights covered by Chinese media. China’s national flag was passed, by hand, by 100 Chinese people and all ethnic minorities, eventually making it to the hands of the flag-raisers. As another example, at the end of the ceremony, the snowflake-shaped plates, each with a participating nation’s name on it, interlocked with others to form a giant snowflake surrounding the Olympic flame. As *China Daily* wrote, the forming of the snowflake was the feature of the show that perfectly explained the Chinese philosophy of ‘harmony in diversity’ and ‘strength in unity’ (X. Wu, 2022). The snowflake-featuring performance was also reported in the Western media. *The Guardian* includes the performance as one of ‘11 key moments from Beijing 2022 opening ceremony’. As reported in *The Guardian*, ‘one sequence featured children dancing and singing across the arena, while the LED screens beneath them automatically tracked their footsteps, making stars appear at their feet as they performed and moved around’ (Belam, 2022). However, in the same report, ‘protests around the globe as the Games open’, related to China’s non-humanitarian treatment toward ethnic minorities, were listed as another one of the ‘key moments from Beijing 2022 opening ceremony’ (Belam, 2022). Such coverage by *The Guardian* is apparently against the image of a unified China endorsed by the Chinese government. Therefore, it is important to see how prejudice towards, or ignorance of, foreign realities can be perpetuated (Schneider, 2019). People might be thrilled by the digital immersive display, but then some media talk about or hint at how this is linked to political issues, and people may stop thinking China is wonderful.

The 2008 Olympics opening ceremony changed many people’s minds about what China (and Chinese culture) was, and the use of technology there was important. It was about proving China’s capability on the international stage, and the international art exhibitions/performance are like a glue that helps to consolidate a new China. Therefore, DIA could be, and it was, an opportunity for China to augment its soft power by changing or refreshing the perceptions about China. In *Beijing 8-Minute Show* (2018), the Chinese

government and the director of the show aimed at using digital technology to transfer the audience's view from politics to culture. In the Western audiences' minds, the perception of China's technological achievement was not part of their cultural imaginary of China. Adding technology seemed a way to send Chinese culture out more effectively but some of the same problems existed, such as resistance by audiences and censorship by the government. In the mind of Western audiences, China's digital power is related to its authoritarian regime, which is largely a kind of hard power. Historically, China's image was very much associated with cheap products and copies; China has high technology, as I have discussed in Chapter 1, but 'Made in China' is still a problem associated with '*shanzhai*' and lower quality. If all international viewers get is this old history and propaganda, then the stereotype will remain, so it is important that Chinese artists push the boundaries. Interestingly, Chinese artists engaging with Sino-futurism do not reject the perception of China's digital power and authoritarianism. Sino-futurism featured the China's imaginary in Western audiences' minds that had been filtered by an Orientalising impulse, and appeared in contemporary artworks. Sino-futurism DIA works like Cao Fei's *Blueprints* (2020) highlighted China's cultural elements with political connotations while using the newness of immersive digital technology to provide a playful way to see the work. The use of technology (i.e., the novel experience and special effects), to some extent, distracts viewers away from the strong political meanings. These works and the artist have been widely accepted by the Western media, but Sino-futurism that is oriented by Western observers can also be biased. Sino-futurism DIA may change China's historical image of low-quality mass manufacturing by instead featuring the spectacular high technology in an imagined China, but this art genre also features a political view about China's superpower.

In this project, I have investigated 'Digital China' from two sides: international, which accords with the standard definition of how soft power is transmitted globally; and domestic, which is about national identity whereby people within the nation are persuaded via digital technology to believe in the cohesive power of national culture. According to my study of China's domestic audiences and practitioners, the public appreciates the abundant Chinese traditional culture, artists and curators put efforts into recreating and promoting Chinese culture in a digitalised way, and entrepreneurs are involved in digital businesses to change the old image of 'Made in China'. 'Digital China' + 'Shared Future' + 'Chinese Dream' has reinforced the national identity in China. National identity within China is about bringing together all the components (ethnicities) into a big family and showing the world they are

part of it, like in the 2022 Beijing Olympics opening ceremony. It contributes to a new imaginary that is being projected, and also reinforces the idea of the ‘Community of Shared Future’, which is a political slogan that is only really properly understood within China. ‘Community of Shared Future’, or ‘Together for a Shared Future’, signals co-presence symbolically, and has a significant connection with the Confucian influence in China. As I have discussed in Chapter 4, such political slogans are highlighted in works inspired by ancient Chinese wisdom, and represent China’s vision of a more justice, secure, and prosperous world where China sees itself as a builder of world peace and contributor to global development (X. Zhao, 2018). So, as shown in my study, even if the foreign/international audiences were not persuaded by DIA, the domestic audiences responded with some pride. However, I should reiterate that it is equally significant to note that although the domestic Chinese practitioners and audiences were proud of China’s culture, nonetheless they were ambivalent about the usefulness of digital technology for the culture. Therefore, behind the immersive spectacles linked with technological development, cultural presence, and different perceptions, we have been shown a controversial China where the digital superpower was rising but still had problems with its old image associated with cheap products and copies; where cultures were being rejuvenated by digitalisation, but the people had concerns about the implementation of digital technology; and where preconception and connectivity generated two different perceptions about China, inside and outside the nation.

7.3 Contribution to the knowledge

Through examining DIA and the relevant cultural practices in the context of ‘Digital China’, particularly with regard to how practitioners produced and how audiences received cultural messages from digital immersive technology, this study has a threefold significance. First, it provides in-depth qualitative data about the key reasons for why and how practitioners in China use digital immersive technology in cultural production, and about their ambivalent attitudes towards the limited functions of digital technology under the commercial and policy mechanism, along with detailed justifications for their perceptions. Second, perhaps more importantly, given that digital technology should facilitate understanding and appreciation, as well as communicate and safeguard cultural artefacts (ICOMOS, 2008; State Council, 2019)

in particular to younger audiences (see Chapter 4), this project provides a new set of advice for practitioners of China's digital creative industries aimed at this demographic. For instance, some viewers consider the game-like experience in virtual heritage as a kind of blasphemy against the original artefacts which have significant cultural and religious values. VR and AR generated the sense of cultural presence by removing the physical distance between the audience and the work, but audiences were still in their right mind to understand the cultural content of DIA. Inappropriate designs, as above-mentioned, and also the displaying of the works in commercialised places are additional factors causing some viewers' discontent towards the cultural experience in DIA. Third, outside of the domestic perceptions of Chinese culture and digital technology, this project also speaks to much broader concerns regarding global audiences and DIA in high profile international cultural events. It provides clear and specific examples of how Chinese culture can be represented on the global stage through digital technology and how audiences outside China see the international images of China in the present day. Digital technology is not only a means to boost China's economy and change its global reputation but also a strategy to enhance 'cultural power' (Keane & Chen, 2017) at home. The international mass event and art exhibition can help to consolidate the new image of 'China', so this study provides invaluable information for Chinese artists who want to refresh and update it through DIA.

7.4 Future directions for the study

This study brings together a comprehensive picture of China's DIA, from its production to audiences' reception inside and outside China, and paves the way for further research in the field. Firstly, it is important to see the complicated and ever-changing dynamics of producing, distributing, and consuming DIA. The diffusion of VR/AR in creative practice generates new forms of art; and the intervention of commercialisation makes new industrial forms, for instance, the immersive entertainment and retail-museum mentioned in this project. With more novel digital technologies (i.e., AI and blockchain) involved in the production of DIA, more artforms and industrial forms are emerging. For example, the use of non-fungible tokens (NFTs) for the trade or collection of digital assets. NFT is a non-interchangeable unit of data stored on a blockchain, a form of digital ledger, that can be sold and traded (Dean,

2021). NFT changes the production and distribution process of DIA. For instance, VRNFT⁶, a VR gallery with NFT support, allows its users to protect their digital assets, view artworks, and communicate with artists in a blockchain system. In 2021, Hong Kong hosted the first physical and virtual art fair, *Digital Art Fair Asia*, featuring a 360-degree immersive art experience and NFT digital art. Visitors can view the exhibition in Hong Kong or via VR goggles anywhere in the world. Moreover, some world famous artists and art institutions have also engaged in NFT art. In 2021, the Japanese artist Hajime Sorayama unveiled his first limited edition NFT collection, *UNTITLED_SHARK ROBOT*, which is a collaboration between Hong Kong's K11 Musea and the art authentication platform Zhen. In China, Bigverse, a Chinese metaverse company, launched its NFT art platform NFTCN (NFT 中国) in 2021. As stated on its official website, Bigverse (2021) is committed to empowering the digital culture and art industries with technology, promoting Chinese culture, disseminating Chinese stories, and boosting the national strategy of cultural power. NFT art is considered as the means of promoting Chinese culture not only domestically but also internationally. As the media has reported, the International Olympic Committee officially authorised *Bing Dwen Dwen* (冰墩墩), the 2022 Beijing Winter Olympics panda mascot, to be sold on an NFT platform (X. Shen, 2022). Hence, it is significant to see, in the future, how these new digital technologies are changing the dynamics of DIA in creative industries and contributing to China's cultural power.

Secondly, in the context of immersive media research, there was a trend for objectifying the subjective experience using a quantitative approach. However, 'presence is a subjective, slippery, and fundamentally existential term', as Kit Messham-Muir (2018, p. 15) argues in his art critique of Bad Faith's VR work at the 2018 Melbourne International Film Festival. My project demonstrates that cultural presence is an introspection of viewers' subjective experience rather than an evaluation of objective similarity between the experience in VR and in the real world. This project not only enriches the yet to be well-established qualitative methods but also provides useful tools for further analysing the cultural presence of different cultural contexts using three notions, i.e., 'illusion', 'playfulness' and 'authenticity'. The three notions in this study are heavily used to examine the cultural context of VE that the viewers are familiar with or belong to, but considering the definition of cultural presence, it will be significant for future studies to see how viewers react in the cultural context of VR that they do not belong to. 'Illusion', thus, can be used to examine: how viewers are

⁶ See <https://vr-nft.com/art/test-vr-nft-artwork-1/>, retrieved on February 15, 2022.

convinced what they immersed in is real when they are not familiar with the cultural content in VE; whether viewers consider VR is just gameplay rather than a cultural experience when they lack the knowledge or cultural capital to understand the work; and whether a viewer will expect or be able to appraise the ‘authenticity’ of VR work if she/he has not seen or learned about the original artifact in the real world. The three questions above should be further explored, following qualitative approaches, in future studies.

Finally, more research about digital technology is needed to speak to the global audiences and see the different perceptions among different groups, in particular, when a nation’s international status is changing under digital transformation. Unlike the cultural images of South Korea (as featured in K-pop) and Japan (as featured in retro-futurism), recently imagined China is becoming more explicitly related to the imaginary of digital power in the Western context via the immersive and spectacular performances endorsed by the government or through the Sino-futurism genre fostered by artists outside China. DIA is not exclusive to China, but China is an example to other countries that demonstrates some possibilities for using digital technology to deliver aesthetics, ideas, and value through international art exhibitions and mass events. As I have discussed in Chapter 6, Asia, where China is located, is recognised as an emerging digital powerhouse in terms of its significant internet population and its diversity of cultures and geopolitics (Lim & Soriano, 2016). Some scholars (Noronha and D’Cruz, 2019, as cited in Athique & Baulch, 2019, p. 2) claim that South Korea and China are the major players in the manufacturing domain of digital Asia, while India and the Philippines are specialised providers of digital labour. With their development of hard power (infrastructure and finance, for example) facilitated by digital technology, the latter countries may in the future face the same problems as China in terms of soft power. It is important to see whether digital technology will become a means to upgrade their international images.

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Appendix A

| FOCUS GROUP QUESTION GUIDE | | |
|----------------------------|---|--|
| Facilitator: Xinyang Zhao | | |
| Participants | Objective | Questions |
| 18-28 years old | This part of the discussion is designed to aid the interpretation of viewers' sense of cultural presence, more specifically, their reactions or attitudes toward immersion in the virtual (cultural) context. | <ol style="list-style-type: none"> 1. Can you briefly describe how the environments in the VR look or feel? 2. Talk about the most impressive and not impressive experiences when immersed in the work. |
| | This part of the discussion is designed to aid the interpretation of the viewer's cultural understanding of art appreciation. | <ol style="list-style-type: none"> 3. How do you understand the meaning of the work? 4. What kind of idea does this work/exhibition aim to deliver? 5. Do you think VR can help you to perceive these ideas or feelings? And why? |
| | This part of the discussion focuses on getting viewers to reflect on their experience of extending their general art exhibition experience. | <ol style="list-style-type: none"> 6. Is it the first time you have viewed VR? What is the difference between this exhibition/work and the exhibition/work you visited before? Give an example. 7. Do you think VR is a good means of art compared to non-virtual media? 8. What else do you think impacts your art experience? |

Appendix B

Sample interview questions

1. The immersive exhibition *The Unspeakable Openness of Things* was curated in 2018 at Red Brick Art Museum. What was the purpose or occasion of curating this exhibition? And what is the implication for Red Brick Art Museum?
2. What does this exhibition want to convey to the audience? And how does this exhibition attract so many audiences?
3. Would you try to make the exhibition more acceptable to the public? Is immersive media a good way to do this?
4. What is the difference between *The Unspeakable Openness of Things* (2018) and the immersive art exhibitions in shopping centres?
5. The mediums for art practice are restricted by the technological developments of the day. A good artist may be good at applying advanced technology to make art. What do you think of the current digital media art (including VR) in China?